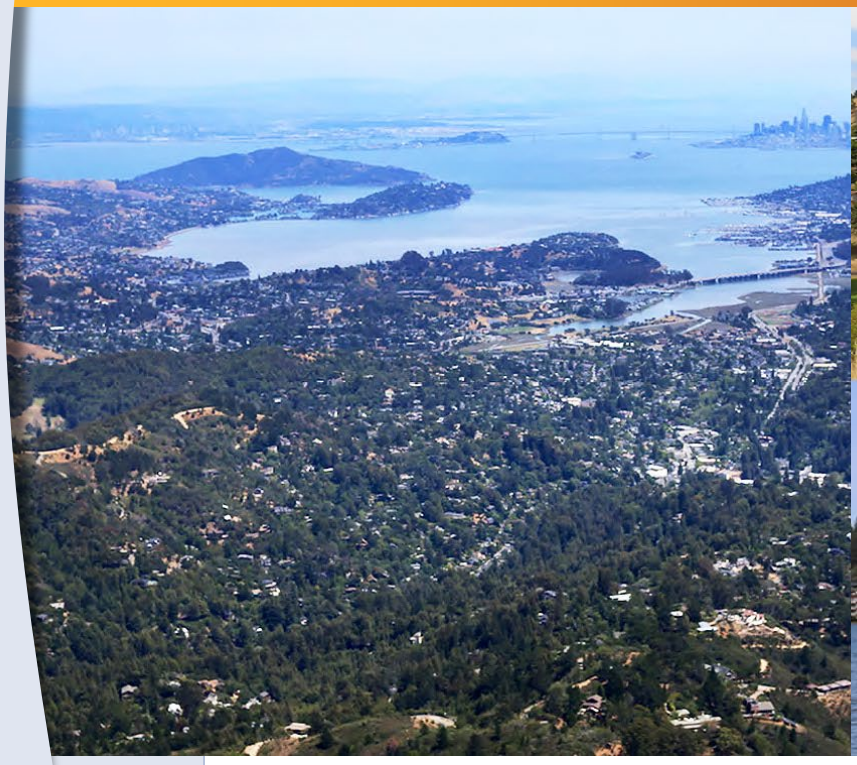
DRAFT ENVIRONMENTAL IMPACT REPORT

North Coast Land Holdings Master Plan and Community Plan Amendment Project (Project ID: P1490)

SCH No. 2020090488



APPENDICES

DRAFT ENVIRONMENTAL IMPACT REPORT - APPENDICES

North Coast Land Holdings Master Plan and Community Plan Amendment Project (Project ID: P1490)

SCH No. 2020090488

Prepared for:

County of Marin
Community Development Agency
3501 Civic Center Dr, Suite 308
San Rafael, CA 94903

Contact:

Michelle Levenson
Principal Planner
415.473.3615

Prepared by:

Ascent Environmental, Inc.
455 Capitol Mall, Suite 300
Sacramento, CA 95814

Contact:

Tanya Jones
Project Manager
949.563.9503

July 2024

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Appendix A

NOP and Scoping Comments

Notice of Preparation of Environmental Impact Report

North Coast Land Holdings, LLC Community Plan Amendment, Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal Permit **Project ID:** P1490

APN(s): 043-261-25; 043-261-26; 043-262-03; 043-262-06; 043-401-05; 043-401-10; 043-401-16; 043-402-03; 043-402-06

Project Address: 201 Seminary Drive, Mill Valley, CA 94941 **Applicant:** North Coast Land Holdings, LLC.

Project Planner: Michelle Levenson, Senior Planner **Phone:** (415) 473-6269

Email: envplanning@marincounty.org

Project Summary: The applicant, North Coast Land Holdings, LLC, is supplementing its previously submitted Community Plan Amendment request with an application for Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal Permit approval to allow the redevelopment of portions of the existing Seminary campus (please see project details on website links referenced below).

Comment period commences: September 25, 2020 **Comment period deadline:** October 26, 2020

Project details: Available on the environmental and planning project webpages under current projects: https://www.marincounty.org/depts/cd/divisions/environmental-review

Appeal Rights: If you disagree with the foregoing determination regarding environmental review of the project, you may appeal it to the Board of Supervisors. A Petition for Appeal and a $1,408.00 filing fee must be submitted in the Community Development Agency - Planning Division, Room 308, Civic Center, San Rafael, within five business days, or no later than 4:00 P.M., October 2, 2020.

More information about this application is available online at http://www.marincounty.org/depts/cd/divisions/planning/projects, where projects are listed for the Alto Strawberry area.

Governor's Office of Planning & Research
OCT 30 2020
STATE CLEARINGHOUSE

COUNTY OF MARIN

COMMUNITY DEVELOPMENT AGENCY
PLANNING DIVISION

NOTICE OF MARIN COUNTY BOARD OF SUPERVISORS HEARING
Appeal of the Environmental Manager's Determination-Notice of Preparation (NOP) of Environmental Impact Report (EIR), North Coast Land Holdings LLC Planning Application on the former Golden Gate Baptist Seminary Site,
201 Seminary Drive, Mill Valley
APN 043-261-25 and -26; 043-262-03 and -06;
043-401-05, -10 and -16; and 043-402-03 and -06
Project ID P1490

NOTICE IS HEREBY GIVEN that the Marin County Board of Supervisors will consider issuing a decision on the Appeal of the Environmental Manager's Determination that the North Coast Land Holdings LLC Planning Application requires the preparation of an Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA) and the County's Environmental Impact Review Guidelines, during a public hearing scheduled on Tuesday, November 10, 2020. The applicant for the appeal is Riley F. Hurd, III, on behalf of the Seminary Neighborhood Association. The property is located at 201 Seminary Drive, Mill Valley, (the former Golden Gate Baptist Seminary site) further identified as Assessor's Parcel 043-261-25 and -26; 043-262-03 and -06; 043-401-05, -10 and -16; and 043-402-03 and -06.

The project that is the subject of the appeal consists of the following: North Coast Land Holdings, LLC has submitted an application for development on the former Golden Gate Baptist Seminary property on the Strawberry Peninsula in Mill Valley. The proposed project includes a residential care facility for senior citizens and would replace a majority of the existing residential housing, as well as provide new residential housing. In addition, a pre-school and fitness center that would both be open to the public are proposed. Twenty percent of the proposed units would be reserved as below market rate housing. More than 75 percent of the 127-acre campus would be preserved as open space, athletic fields, paths and plazas. No change to the scope of the existing use permit for higher educational use is being proposed.

For information regarding environmental review of the application, please visit the Environmental Review Division's project webpage at: https://www.marincounty.org/depts/cd/divisions/environmental-review/current-eir-projects/north-coast-land-holdings-llc.
For more information about the planning application, please visit the Planning Division's project webpage at:
https://www.marincounty.org/depts/cd/divisions/environmental-review/current-eir-projects/north-coast-land-holdings-llc.
Project plans and other documents related to the application and environmental review are available on the project webpages, where you can subscribe to receive email notifications and updates.

In compliance with local and state shelter-in-place orders, and as allowed by Governor Newsom's Executive Order N-29-20, the Board of Supervisors' will not be providing a location for the public to attend the hearing in person. Members of the public may attend and participate in this Board hearing online, using Zoom. To participate in a Board hearing please visit the Board hearings webpage at: https://www.marincounty.org/depts/bs/meeting-archive and follow the instructions provided. You can call (415) 473-7331 if you need more information about the hearing.

The time of the hearing will be indicated on the hearing agenda posted on the Board of Supervisors hearing webpage on the Thursday before the hearing. A staff report will be available on the project webpage on Friday, November 6, 2020.

If you challenge the decision on this application in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the Community Development Agency, Planning Division during or prior to the public hearing. (Government Code Section 65009(b)(2).)

October 26, 2020

Rachel Reid
Environmental Manager

All public meetings and events sponsored or conducted by the County of Marin are held in accessible sites. Requests for accommodations may be made by calling (415) 473-4381 (Voice) 473-3232 (TDD/TTY) or by e-mail at disabilityaccess@marincounty.org at least four work days in advance of the event. Copies of documents are available in alternative formats, upon request.

REVISED NOTICE OF PREPARATION AND EXTENSION OF THE COMMENT PERIOD FOR THE NORTH COAST LAND HOLDINGS LLC PLANNING APPLICATION ON THE FORMER GOLDEN GATE BAPTIST SEMINARY SITE, 201 SEMINARY DRIVE, MILL VALLEY APN 043-261-25 AND -26; 043-262-03 AND -06; 043-401-05, -10 AND -16; AND 043-402-03 AND -06 PROJECT ID P1490

NOTICE IS HEREBY GIVEN that the previous Notice of Preparation for this project has been revised and the comment period extended.

Marin County will be preparing an Environmental Impact Report (EIR) for the North Coast Land Holdings, LLC. Community Plan Amendment, Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal Permit project. Marin County is the lead agency, pursuant to the State Guidelines for the California Environmental Quality Act (State CEQA Guidelines Section 15050) for the preparation of an EIR. This EIR is being prepared by Marin County in accordance with CEQA, the State of California CEQA Guidelines, and County Environmental Impact Review Guidelines. The property is located at 201 Seminary Drive, Mill Valley, (the former Golden Gate Baptist Seminary site) further identified as Assessor's Parcels 043-261-25 and -26; 043-262-03 and -06; 043-401-05, -10 and -16; and 043-402-03 and -06.

North Coast Land Holdings, LLC has submitted an application for development on the former Golden Gate Baptist Seminary property on the Strawberry Peninsula in Mill Valley. The proposed project includes construction of a new residential care facility with up to 100 independent and 50 assisted living and memory care apartments for senior citizens and 336 single- and multi-family residential units that would replace a majority of the existing residential housing. Fifty of the proposed residential units would be reserved as below market rate housing. In addition, a pre-school (3,000 square feet) and fitness center (17,000 square feet) that would both be open to the public are proposed, and an existing maintenance building would be replaced. More than 70 percent of the 127-acre campus would be preserved as open space, athletic fields, paths and plazas. No change to the scope of the existing use permit allowing up to a maximum of 1,000 students for higher educational use is being proposed. A 15,800 square foot addition is proposed as part of the renovation of the Administration Building, resulting in a 41,000 square foot building.

The EIR will evaluate the project with respect to all of the following topical issues, but will focus on some issues more than others. The topical areas that will be addressed in the EIR include: Aesthetics, Agricultural and Forestry Resources, Air Quality, Biological Resources, Cultural Resources, Energy, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mandatory Findings of Significance, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, Transportation, Tribal Cultural Resources, Utilities and Service Systems, and Wildfire.

For information regarding environmental review of the application, please visit the Environmental Review Division's project webpage at:
https://www.marincounty.org/depts/cd/divisions/environmental-review/current-eir-projects/north-coast-land-holdings-llc.
For more information about the planning application, please visit the Planning Division's project webpage at:
https://www.marincounty.org/depts/cd/divisions/environmental-review/current-eir-projects/north-coast-land-holdings-llc.

Project plans and other documents related to the application and environmental review are available on the project webpages, where you can subscribe to receive email notifications and updates.

To ensure that the EIR for this project is thorough and adequate, and meets the needs of all agencies reviewing it, we are soliciting comments on specific issues to be included in the environmental review. Public comments on the scope of issues to be evaluated in the EIR are encouraged.

If you wish to comment during the Notice of Preparation (NOP) comment period we will accept written comments about the scope of the environmental report until the close of the extended NOP comment period at 4:00 p.m. on **Monday, February 1, 2021.** Commenters are advised to mail written comments postmarked on or before February 1, 2021 to the attention of Rachel Reid, Environmental Planning Manager at 3501 Civic Center Drive, Suite 308, San Rafael, CA 94903. Comments can also be submitted by email to **envplanning@marincounty.org** before the end of the comment period deadline. If you have any questions, or need additional information about the project merits, please contact Michelle Levenson, Senior Planner at (415) 473-3615. A public scoping session will be held at a date to be determined, and a subsequent notice will be issued once it is scheduled.

If you challenge the decision on this application in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the Community Development Agency, Planning Division during or prior to the public hearing. (Government Code Section 65009(b)(2).)

Rachel Reid

November 20, 2020

Rachel Reid
Environmental Planning Manager

STATE OF CALIFORNIA Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

RECEIVED

OCT 05 2020

COUNTY OF MARIN
COMMUNITY DEVELOPMENT AGENCY
PLANNING DIVISION

September 28, 2020

Tammy Taylor, Environmental Planner
Marin County Community Development Agency
3501 Civic Center Drive, #308
San Rafael, CA 94903

Re: 2020090488, North Coast Land Holdings, LLC Community Plan Amendment, Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal Permit Project, Marin County

Dear Ms. Taylor:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Keifer
Luiseño

PARLIAMENTARIAN
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Wintun

COMMISSIONER
William Mungary
Paiute/White Mountain Apache

COMMISSIONER
Julie Tumamait-Stenslie
Chumash

COMMISSIONER
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COMMISSIONER
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EXECUTIVE SECRETARY
Christina Snider
Pomo

NAHC HEADQUARTERS
1550 Harbor Boulevard
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AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

a. A brief description of the project.

b. The lead agency contact information.

c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).

d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

a. Alternatives to the project.

b. Recommended mitigation measures.

c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

a. Type of environmental review necessary.

b. Significance of the tribal cultural resources.

c. Significance of the project's impacts on tribal cultural resources.

d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

a. Whether the proposed project has a significant impact on an identified tribal cultural resource.

b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.

b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

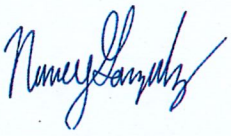
a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,



Nancy Gonzalez-Lopez
Cultural Resources Analyst

cc: State Clearinghouse

Taylor, Tammy

From: Luo, Yunsheng@DOT <Yunsheng.Luo@dot.ca.gov>
Sent: Wednesday, October 21, 2020 10:36 AM
To: EnvPlanning
Cc: Leong, Mark@DOT; OPR State Clearinghouse
Subject: Caltrans comment letter for the North Coast Land Holdings project, NOP
Attachments: North Coast Land Holdings Caltrans.pdf

Good morning Michelle,

Thank you for the opportunity to review the NOP for the North Coast Land Holdings project. Please see the attached Caltrans comment letter for this project. Feel free to reach out to me if you have any questions.

Thank you!

Best,

Yunsheng Luo
Associate Transportation Planner
Local Development - Intergovernmental Review (LD-IGR)
Caltrans, District 4
Cell: 626-673-7057
*For early coordination and project circulation, please reach out to **LDIGR-D4@dot.ca.gov***
*For information about Caltrans' land use and transportation environmental review guidances, please visit the **SB-743 Implementation website**.*

DEPARTMENT OF TRANSPORTATION
DISTRICT 4
OFFICE OF TRANSIT AND COMMUNITY PLANNING
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www.dot.ca.gov

Making Conservation a California Way of Life.

October 21, 2020

SCH # 2020090488
GTS # 04-MRN-2020-00188
GTS ID: 20703
Co/Rt/Pm: MRN/101/4.65

Michelle Levenson, Senior Planner
County of Marin
3501 Civic Center Drive, Room 308
San Rafael, CA 94903

North Coast Land Holdings – Notice of Preparation (NOP) of an Environmental Impact report (EIR)

Dear Michelle Levenson:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the North Coast Land Holdings project. We are committed to ensuring that impacts to the State's multimodal transportation system and to our natural environment are identified and mitigated to support a safe, sustainable, integrated and efficient transportation system. The following comments are based on our review of the September 2020 NOP.

Project Understanding

The proposed project includes the following components: 1) construct a new 20,000 square feet (s.f.) facility to house a pre-school and fitness center; 2) replace a majority of the existing residences and dorm rooms with a mixture of single-family and multi-family residences and construct new single-family and multi-family residence (336 units in total); 3) construct a new 267,354 s.f. residential care facility; 4) renovate and expand the Administration Building; 5) demolish the existing maintenance building and construct a new 2,200 s.f. one in a different location; 6) install landscape and hardscape improvements associated with the school campus and residential development; and 7) provide open space and establish a network of trails throughout the project area. This 123-acre project site is located north of the Golden Gate Bridge and adjacent to US-101 and the Seminary Drive exit.

Travel Impact Analysis
With the enactment of Senate Bill (SB) 743, Caltrans is focused on maximizing efficient development patterns, innovative travel demand reduction strategies, and multimodal improvements. For more information on how Caltrans assesses Transportation Impact Studies, please review Caltrans' Transportation Impact Study Guide. The detailed Vehicle Miles Traveled (VMT) analysis should include the following:

- A VMT analysis pursuant to the County's guidelines or, if the County has no guidelines, the Office of Planning and Research's Guidelines. Projects that result in automobile VMT per capita above the threshold of significance for existing (i.e. baseline) city-wide or regional values for similar land use types may indicate a significant impact. If necessary, mitigation for increasing VMT should be identified. Mitigation should support the use of transit and active transportation modes. Potential mitigation measures that include the requirements of other agencies such as Caltrans are fully enforceable through permit conditions, agreements, or other legally-binding instruments under the control of the City.

- A schematic illustration of walking, biking and auto conditions at the project site and study area roadways. Potential safety issues for all road users should be identified and fully mitigated.

- The project's primary and secondary effects on pedestrians, bicycles, travelers with disabilities and transit performance should be evaluated, including countermeasures and trade-offs resulting from mitigating VMT increases. Access to pedestrians, bicycle, and transit facilities must be maintained.

- Clarification of the intensity of events/receptions to be held at the location and how the associated travel demand and VMT will be mitigated.

Additionally, potential impacts due to the project generated trips on the US-101 should be analyzed, given that the project is in proximity to US-101. Please submit the transportation impact study to Caltrans when it becomes available.

Sea Level Rise
The effects of sea level rise may have impact on the transportation facilities located in the project area. California Executive Order (EO) S-13-08 directs State agencies planning construction projects in areas vulnerable to sea level rise to begin planning for potential impacts by considering a range of sea level

rise scenarios for years 2050 and 2100. Higher water levels may increase erosion rates, change environmental characteristics that affect materials durability, lead to increased groundwater levels and change sediment movement along shores and at estuaries and river mouths, as well as affect sole pore pressure at dikes and levees on which the transportation facilities are constructed. All these factors must be addressed through the geotechnical and hydrological studies conducted in coordination with Caltrans.

Construction-Related Impacts

Because the project area is within close vicinity of US-101, potential impacts to the State Right-of-Way (ROW) from project-related temporary access points should be analyzed. Mitigation for significant impacts due to construction and noise should be identified in the DEIR. Project work that requires movement of oversized or excessive load vehicles on state roadways requires a transportation permit that is issued by Caltrans. To apply, visit: https://dot.ca.gov/programs/traffic-operations/transportation-permits.

Prior to construction, coordination may be required with Caltrans to develop a Transportation Management Plan (TMP) to reduce construction traffic impacts to US-101.

Lead Agency

As the Lead Agency, the County of Marin is responsible for all project mitigation, including any needed improvements to the State Transportation Network (STN). The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures.

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, please contact Yunsheng Luo at Yunsheng.Luo@dot.ca.gov. Additionally, for future notifications and requests for review of new projects, please contact LDIGR-D4@dot.ca.gov.

Sincerely,

Mark Leong

Mark Leong
District Branch Chief
Local Development - Intergovernmental Review
cc: State Clearinghouse

Taylor, Tammy

From: Hultman, Debbie@Wildlife <Debbie.Hultman@wildlife.ca.gov>
Sent: Tuesday, October 20, 2020 11:54 AM
To: EnvPlanning
Cc: OPR State Clearinghouse; Culpepper, Amanda(Mandy)@Wildlife; Weiss, Karen@Wildlife; Weightman, Craig@Wildlife
Subject: North Coast Land Holdings LLC-SCH2020090488
Attachments: North Coast Land Holdings LLC-SCH2020090488-Levenson-CULPEPPER101920.pdf

Ms. Levenson,

Please see the attached letter for your records. If you have any questions, contact Ms. Amanda Culpepper, cc'd above.

Thank you,

Debbie Hultman | Assistant to the Regional Manager
California Department of Fish and Wildlife – Bay Delta Region
2825 Cordelia Road, Ste. 100, Fairfield, CA 94534
707.428.2037 | debbie.hultman@wildlife.ca.gov

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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
2825 Cordelia Road, Suite 100
Fairfield, CA 94534
(707) 428-2002
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

October 19, 2020

Ms. Michelle Levenson
County of Marin
3501 Civic Center Drive, Room 308
San Rafael, CA 94903
envplanning@marincounty.org

Subject: North Coast Land Holdings, LLC, Community Plan Amendment, Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal, Notice of Preparation of a Draft Environmental Impact Report, SCH No. 2020090488, Marin County

Dear Ms. Levenson:

The California Department of Fish and Wildlife (CDFW) reviewed the County of Marin's (County) Notice of Preparation (NOP) of a draft Environmental Impact Report (EIR) provided for the North Coast Land Holdings, LLC, Community Plan Amendment, Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal (Project) located at 201 Seminary Drive, Mill Valley, CA 94941, Marin County.

CDFW is a Trustee Agency with responsibility under the California Environmental Quality Act (CEQA) §15386 for commenting on projects that could impact fish, plant, and wildlife resources. CDFW is also considered a Responsible Agency if a project would require discretionary approval, such as the California Endangered Species Act (CESA) Permit, the Native Plant Protection Act, the Lake and Streambed Alteration Agreement (LSAA) and other provisions of the Fish and Game Code that afford protection to the State's fish and wildlife trust resources. Pursuant to our jurisdiction, CDFW has the following concerns, comments, and recommendations regarding the Project.

PROJECT DESCRIPTION AND LOCATION

Proponent: North Coast Land Holdings, LLC

Objective: The Project will develop a residential care facility for senior citizens, residential housing, pre-school, and fitness center on the 127-acre Golden Gate Baptist Seminary property. Pre-existing buildings, including seminary dorm rooms, residences, and a maintenance building will be demolished or renovated.

Location: The Project is located at 201 Seminary Drive, Mill Valley, CA 94941. While identified as within Mill Valley, the Project occurs in unincorporated Marin County in census-designated Strawberry. The Project is approximately bounded by Richardson

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Bay to the west, Seminary Drive to the south, Storer Drive to the east, and Ricardo Road to the north. It is east of U.S. Route 101.

The CEQA Guidelines (§§15124 and 15378) require that the draft EIR incorporate a full Project description, including reasonably foreseeable future phases of the Project, and that contains sufficient information to evaluate and review the Project's environmental impact. Please include a complete description of the following Project components in the Project description:

- Footprints of permanent Project features and temporarily impacted areas, such as staging areas and access routes.
- Encroachments into riparian habitats, wetlands, or other sensitive areas.
- Tree removal, including the number of trees by species, diameter at breast height, and health status.
- Area and plans for proposed buildings/structures, demolition of existing structures, renovation of existing structures, ground disturbing activities, fencing, paving, stationary machinery, landscaping, and stormwater systems.
- Operational features of the Project, including level of anticipated human presence (describe seasonal or daily peaks in activity, if relevant), artificial lighting/light reflection, noise and greenhouse gas generation, traffic generation, and other features.
- Construction schedule, activities, equipment, and crew sizes.

ENVIRONMENTAL SETTING

Sufficient information regarding the environmental setting is necessary to understand the Project's, and its alternative's (if applicable), significant impacts on the environment (CEQA Guidelines, §§15125 and 15360). CDFW recommends that the CEQA document prepared for the Project provide baseline habitat assessments for special-status plant, fish, and wildlife species located and potentially located within the Project area and surrounding lands, including all rare, threatened, or endangered species (CEQA Guidelines, §15380). Fully protected, threatened or endangered, candidate, and other special-status species that are known to occur, or have the potential to occur in or near the Project site, include, but are not limited to:

- Tiburon jewelflower (*Streptanthus glandulosus* ssp. *niger*), state and federally listed as endangered, California Rare Plant Rank (CRPR) 1B.1
- Salt marsh harvest mouse (*Reithrodontomys raviventris*), state and federally listed as endangered, California fully protected species
- California Ridgway's rail (*Rallus obsoletus obsoletus*), federally and state listed

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as endangered, California fully protected species

- California black rail (*Laterallus jamaicensis coturniculus*), state listed as threatened, California fully protected species
- Longfin smelt (*Spirinchus thaleichthys*), state listed as threatened and federal candidate for listing
- Pallid bat (*Antrozous pallidus*), California Species of Special Concern (SSC)
- Townsend's big-eared bat (*Corynorhinus townsendii*), SSC
- Western red bat (*Lasiurus blossevillii*), SSC
- Hairless popcorn flower (*Plagiobothrys glaber*), CRPR 1A
- Franciscan thistle (*Cirsium andrewsii*), CRPR 1B.2
- White-tailed kite (*Elanus leucurus*), California fully protected species
- Oak woodland (*Quercus* spp.), Areas of Conservation Emphasis-Terrestrial Significant Habitat[1] and sensitive natural community[2]

Habitat descriptions and species profiles should include information from multiple sources: aerial imagery, historical and recent survey data, field reconnaissance, scientific literature and reports, and findings from "positive occurrence" databases such as California Natural Diversity Database (CNDDB). Based on the data and information from the habitat assessment, the CEQA document can then adequately assess which special-status species are likely to occur in the Project vicinity.

CDFW recommends that during Project planning and prior to Project implementation, surveys be conducted for special-status species with potential to occur, following recommended survey protocols if available. Survey and monitoring protocols and guidelines are available at: https://wildlife.ca.gov/Conservation/Survey-Protocols.

Botanical surveys for special-status plant species, including those with a California Rare Plant Rank (http://www.cnps.org/cnps/rareplants/inventory/), must be conducted during the blooming period for all sensitive plant species potentially occurring within the Project area and require the identification of reference populations. Please refer to CDFW protocols for surveying and evaluating impacts to rare plants available at: https://wildlife.ca.gov/Conservation/Plants.

[1] CDFW Areas of Conservation Emphasis (ACE) Fact Sheet for Terrestrial Significant Habitats: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=150834
[2] CDFW maintains a list of vegetation alliances considered sensitive natural communities based on state and global rarity ranks: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153609&inline

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IMPACT ANALYSIS AND MITIGATION MEASURES

The CEQA Guidelines (§15126.2) necessitate that the draft EIR discuss all direct and indirect impacts (temporary and permanent) that may occur with implementation of the Project. This includes evaluating and describing impacts such as:

- Potential for "take" of special-status species.
- Loss or modification of breeding, nesting, dispersal and foraging habitat, including vegetation removal, alteration of soils and hydrology, and removal of habitat structural features (e.g. snags, roosts, overhanging banks, and anthropogenic habitat such as buildings).
- Loss or modification of sensitive natural communities or vegetation associations.
- Permanent and temporary habitat disturbances associated with ground disturbance, noise, lighting, reflection, air pollution, traffic, or human presence.
- Obstruction of movement corridors, fish passage, or access to water sources and other core habitat features.

The CEQA document also should identify reasonably foreseeable future projects in the Project vicinity, disclose any cumulative impacts associated with these projects, determine the significance of each cumulative impact, and assess the significance of the project's contribution to the impact (CEQA Guidelines, §15355). Although a project's impacts may be insignificant individually, its contributions to a cumulative impact may be considerable; a contribution to a significant cumulative impact – e.g., reduction of available habitat for a listed species – should be considered cumulatively considerable without mitigation to minimize or avoid the impact.

Based on the comprehensive analysis of the direct, indirect, and cumulative impacts of the Project, the CEQA Guidelines (§§ 15021, 15063, 15071, 15126.2, 15126.4 and 15370) direct the lead agency to consider and describe all feasible mitigation measures to avoid potentially significant impacts in the draft EIR, and/or mitigate significant impacts of the Project on the environment. This includes a discussion of take avoidance and minimization measures for special-status species, which are recommended to be developed in early consultation with the U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service and CDFW. These measures can then be incorporated as enforceable Project conditions to reduce potential impacts to biological resources to less-than-significant levels. Fully protected species such as California black rail and white-tailed kite may not be taken or possessed at any time (Fish and Game Code § 3511). Therefore, the draft EIR is advised to include measures to ensure complete take avoidance of these fully protected species. CDFW recommends the following mitigation measures be incorporated into the draft EIR to reduce potentially significant impacts to special-status species:

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Mitigation Measure 1: Special-Status Plant Surveys and Avoidance

A Qualified Biologist shall conduct a survey during the appropriate blooming period for all special-status plants that have the potential to occur on the Project site the season prior to the start of construction. Surveys should be conducted following *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities*, prepared by CDFW, dated March 20, 2018[3]. If special-status plants are found during surveys, the Project will be re-designed to avoid impacts to special-status plants to the greatest extent feasible. If impacts to special-status plants cannot be avoided completely during construction, the draft EIR should outline adequate compensatory mitigation, and, for species listed as threatened or endangered pursuant to CESA, the Project will apply for an Incidental Take Permit from CDFW.

Mitigation Measure 2: California Ridgway's Rail and California Black Rail Habitat Assessment, Surveys, and Avoidance

The CEQA document should outline the location of salt marsh habitat relative to the Project activities. Any Project activities within or adjacent to tidal marsh or suitable California Ridgway's rail (CRR) or California black rail (CBR) habitat shall be avoided during rail breeding season, (January 15 to August 31 for CRR, February 1 to August 31 for CBR), each year unless appropriately timed, yearly protocol level surveys are conducted and survey methodology and results are submitted to and accepted by CDFW, or, the Project implements noise and vegetation avoidance measures below. Surveys shall focus on suitable habitat that may be disturbed by Project activities during the breeding season to ensure that CRR or CBR are not nesting in these locations.

If breeding rails are determined to be present, no activities, visual disturbance (direct line of sight) and/or an increase in the ambient noise level shall occur within 700 feet of areas where CRR or CBR have been detected during the breeding season. If surveys have not been conducted, all work shall be conducted 700 feet from rail habitat during nesting season.

If work must be done during the breeding season within 700 feet of CRR or CBR habitat, noise levels cannot exceed 10 dBA over existing ambient noise levels and a noise attenuating fence or visual barrier must be installed to reduce visual and/or acoustic impacts.

Mitigation Measure 3: Salt Marsh Harvest Mouse Habitat Assessment and Avoidance

The CEQA document should outline the location of salt marsh habitat relative to the Project activities. Prior to impacting salt marsh habitat, a Qualified Biologist or Biological

[3] https://www.wildlife.ca.gov/Conservation/Survey-Protocols#377281280-plants

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Monitor, familiar with salt marsh harvest mouse (SMHM), shall walk through and inspect suitable habitat prior to vegetation removal and search for signs of harvest mice or other sensitive wildlife and plants. Following inspection, personnel, under the supervision of the qualified biologist, will disturb (e.g., flush) vegetation to force movement of SMHM into adjacent marsh areas. Flushing of vegetation will first occur in the center of the site then progress toward the two sides away from the open water areas or in this case, away from impacted habitat. Immediately following vegetation flushing, personnel, under the supervision of the qualified biologist or biological monitor, will remove vegetation with hand tools (e.g. weed-eater, hoe, rake, trowel, shovel, grazing) so that vegetation is no taller than two inches.

After vegetation removal, a mouse-proof barrier shall be placed along the edge of the area removed of vegetation to further reduce the likelihood of SMHM returning to the area prior to construction. The fence shall be made of a heavy plastic sheeting material that does not allow salt marsh harvest mice to pass through or climb, and the bottom shall be buried to a depth of 4 inches so that salt marsh harvest mouse cannot crawl under the fence. Fence height shall be at least 12 inches higher than the highest adjacent vegetation with a maximum height of 4 feet. All supports for the exclusion fencing shall be placed on the inside of the work area. An approximately 2-foot wide de-vegetated buffer shall be created along the habitat side of the exclusion fence. The SMHM exclusion fencing shall remain in operating condition throughout the duration of the Project. The Qualified Biologist or Biological Monitor shall daily inspect the integrity of the exclusion fencing to ensure there are no gaps, tears or damage. Maintenance of the fencing shall be conducted as needed. Any necessary repairs to the fencing shall be completed within 24 hours of the initial observance of the damage. Any mice found along or outside the fence shall be closely monitored until they move away from the Project area.

Mitigation Measure 4: Nesting Bird Surveys and Protections

If construction, grading, vegetation removal, or other Project-related activities are scheduled during the nesting season of protected raptors and migratory birds, February 1 to August 31, a focused survey for active nests of such birds shall be conducted by a Qualified Biologist within 7 days prior to the beginning of Project-related activities. If an active nest is found, Permittee shall consult with USFWS and CDFW regarding appropriate action to comply with the Migratory Bird Treaty Act of 1918 and Fish and Game Code. If a lapse in Project-related work of 7 days or longer occurs, another focused survey shall be required before Project work can be reinitiated.

Mitigation Measure 5: Roosting Bat Surveys and Protections-Buildings

Buildings shall be surveyed for bats by a Qualified Bat Biologist within 15 days prior to any building demolition or renovation. Demolition or renovation plans shall cease if bats are found roosting within the buildings until proper eviction and exclusion plans have

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been implemented. Eviction and exclusion of bats shall consist of daytime installation of blockage material or one-way exits between March 1 and April 15 or September 1 and October 15 (outside of maternity season and hibernation season). Exclusion materials shall be re-evaluated for effectiveness by the Qualified Biologist up to two weeks prior to building demolition.

Mitigation Measure 6: Roosting Bat Surveys and Protections-Trees

Removal of trees containing suitable potential bat roosting habitat in the form of crevices, cavities, or exfoliating bark, as with exclusion/eviction from buildings, must be conducted only during seasonal periods of bat activity, and under supervision of a Qualified Bat Biologist. Trees within the Project area shall be assessed by a Qualified Bat Biologist within 15 days prior to any tree removal. If trees are identified as potential bat roost trees, tree removal shall occur outside of the maternity season and hibernation season and via a two-step method conducted over two consecutive days. On day one, create noise and vibration by cutting non-habitat branches and limbs from habitat trees using chainsaws only (no excavators or other heavy machinery). The noise and vibration disturbance, together with the visible alteration of the tree, is effective in causing bats that emerge nightly not to return to the roost that night. On day two, the remainder of the tree will be removed.

Mitigation Measure 7: Tree Removal Mitigation

Live trees removed from the Project area shall be replaced on-site at the following ratios:

Oak trees:

- 4:1 replacement for trees 5 to 10 inches diameter at breast height (DBH)
- 5:1 replacement for trees greater than 10 inches to 15 inches DBH
- 15:1 replacement for trees greater than 15-inch DBH, which are considered old-growth oaks

Replacement oaks will come from nursery stock grown from locally sourced acorns, or from acorns gathered locally, preferably from the same watershed in which they are planted.

Other tree species greater than or equal to 6-inch DBH will be mitigated at the following ratios:

- 1:1 replacement for non-native trees
- 3:1 replacement for native trees

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Sea Level Rise

The Project should assess potential sea-level rise in the area and evaluate development location and habitat impacts with future conditions in mind. The State of California Sea-Level Rise Guidance/2018 Update[4] provides a science-based methodology for state and local governments to analyze and assess the risks associated with sea-level rise and incorporate sea-level rise into their planning, permitting, and investment decisions. The Marin Shoreline Sea Level Rise Vulnerability Assessment/Bay Waterfront Adaptation & Vulnerability Evaluation (BayWAVE)[5] provides context and estimates of the physical and fiscal impacts across the County's bayside shoreline over the coming decades. It includes sea level rise scenarios ranging from 10 inches in the near-term (15 years) to 20 inches in the medium-term (mid-century) and to 60 inches in the long-term (end of century). Since the purpose of the Project is to provide long-term residential and associated structures and it is located on a small peninsula in Richardson Bay, CDFW recommends incorporating the long-term (end of century) scenarios for sea level rise to fully evaluate Project impacts.

REGULATORY REQUIREMENTS

California Endangered Species Act

Please be advised that a CESA Incidental Take Permit (ITP) must be obtained if the Project has the potential to result in take[6] of plants or animals listed under CESA, either during construction or over the life of the Project. Issuance of a CESA Permit is subject to CEQA documentation; the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the Project will impact CESA listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA ITP.

CEQA requires a Mandatory Finding of Significance if a project is likely to substantially restrict the range or reduce the population of a threatened or endangered species. (Pub. Resources Code, §§ 21001, subd. (c), 21083; CEQA Guidelines, §§ 15380, 15064, and 15065). Impacts must be avoided or mitigated to less-than-significant levels unless the CEQA Lead Agency makes and supports Findings of Overriding Consideration (FOC).

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[4] California Natural Resources Agency. 2018. State of California Sea-level Rise Guidance. https://opc.ca.gov/webmaster/ftp/pdf/agenda_items/20180314/Item3_Exhibit-A_OPC_SLR_Guidance-rd3.pdf

[5] Marin County. 2017. Marin Shoreline Sea Level Rise Vulnerability Assessment/Bay Waterfront Adaptation & Vulnerability Evaluation. Prepared by BVB Consulting LLC for Marin County Department of Public Works, June 2017. https://www.marincounty.org/-/media/files/departments/cd/planning/slr/baywave/vulnerability-assessment-final/final_allpages_bvbconsulting_reduced.pdf?la=en

[6] Take is defined in Fish and Game Code section 86 as hunt, pursue, catch, capture, or kill, or attempt any of those activities.

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The CEQA Lead Agency's FOC does not eliminate the project proponent's obligation to comply with CESA.

Lake and Streambed Alteration Agreement

CDFW requires an LSA Notification, pursuant to Fish and Game Code section 1600 et. seq., for Project activities affecting lakes or streams and associated riparian habitat. Notification is required for any activity that may substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank including associated riparian or wetland resources; or deposit or dispose of material where it may pass into a river, lake or stream. Work within ephemeral streams, washes, watercourses with a subsurface flow, and floodplains are subject to notification requirements. CDFW will consider the CEQA document for the project and may issue an LSA Agreement. CDFW may not execute the final LSA Agreement until it has complied with CEQA as a Responsible Agency.

Migratory Birds and Raptors

CDFW also has authority over actions that may disturb or destroy active nest sites or take birds without authorization. Fish and Game Code sections protecting birds, their eggs, and nests include sections 3503, 3503.5, and 3513. Fully protected species may not be taken or possessed at any time (Fish and Game Code, § 3511). Migratory birds are also protected under the federal Migratory Bird Treaty Act.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. [Pub. Resources Code, § 21003, subd. (e)]. Accordingly, please report any special-status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNNDB online field survey form and other methods for submitting data can be found at https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found at https://wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

FILING FEES

CDFW anticipates that the Project will have an impact on fish and/or wildlife, and assessment of filing fees is necessary (Fish and Game Code, § 711.4; Pub. Resources Code, § 21089). Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW.

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If you have any questions, please contact Ms. Amanda Culpepper, Environmental Scientist, at amanda.culpepper@wildlife.ca.gov, or Ms. Karen Weiss, Senior Environmental Scientist (Supervisory), at karen.weiss@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Gregg Erickson
BE74D4C93C604EA...

Gregg Erickson
Regional Manager
Bay Delta Region

cc: State Clearinghouse

Taylor, Tammy

From: Reid, Rachel
Sent: Wednesday, May 26, 2021 2:25 PM
To: EnvPlanning
Subject: Fw: City of Mill Valley NOP Comment Letter for North Coast Land Holdings, LLC Project
Attachments: 2021-05-24 COR Seminary NOP Comment.pdf

From: Lisa Newman <lnewman@cityofmillvalley.org>
Sent: Wednesday, May 26, 2021 2:23 PM
To: Reid, Rachel <rreid@marincounty.org>
Cc: Patrick Kelly <pkelly@cityofmillvalley.org>; Alan Piombo <apiombo@cityofmillvalley.org>; Moulton-Peters, Stephanie <smoultonpeters@marincounty.org>; Parton, Maureen <MParton@marincounty.org>; SDobrovolny, Sarah <SDobrovolny@marincounty.org>; Adam Wolff <awolff@tcmmail.org>; lwhalen@sausalito.gov <lwhalen@sausalito.gov>; dtasini@townoftiburon.org <dtasini@townoftiburon.org>; Levenson, Michelle <MLevenson@marincounty.org>
Subject: City of Mill Valley NOP Comment Letter for North Coast Land Holdings, LLC Project

Rachel,

Thank you for the opportunity to comment on the scope of the EIR analysis for this significant development project. The City of Mill Valley provided EIR Scoping comments on the Seminary development project via mail to your office prior to the end of the comment period on May 25, 2021. A copy of this letter is attached for your convenience and as information to other adjacent jurisdictions and Supervisor Moulton-Peters.

We look forward to working with you as this project progresses. Please contact me if you have any questions.

Best regards,
Lisa

Lisa P. Newman
Senior Planner | City of Mill Valley
26 Corte Madera Avenue | Mill Valley, CA 94941
P. 415-388-4033

CITY HALL IS CLOSED TO THE GENERAL PUBLIC. WE HAVE REDUCED STAFFING TO PROTECT PUBLIC HEALTH AND TO FOCUS ON ESSENTIAL SERVICES. THE PLANNING DIVISION IS CURRENTLY RESPONDING TO INQUIRIES VIA PHONE AND E-MAIL AND WE ARE ACCEPTING COMPLETE APPLICATIONS SUBMITTED VIA MAIL WITH PDF FILES OF ALL APPLICATION MATERIALS OR DROP OFF AT REAR ENTRANCE TO CITY HALL.

PLEASE REVIEW THE DEPARTMENT'S WEBSITE FOR MORE INFORMATION.

MILL VALLEY

May 24, 2021

Rachel Reid
Environmental Planning Manager
3501 Civic Center Drive, Suite 308
San Rafael, CA 94903

Dear Rachel,

Thank you for this opportunity to provide comments on the EIR Notice of Preparation for the revised North Coast Land Holdings, LLC development project located at the former Golden Gate Baptist Seminary property. The City of Mill Valley has provided input on the previous project concepts in 2015/2016 (Branson High School Campus) and 2018 (mixed-use development with college component) due to the significant scale of the project and proximity to the Mill Valley General Plan Sphere of Influence. The City of Mill Valley will continue to actively engage in the process as it unfolds.

As previously stated, the City of Mill Valley recognizes that redevelopment of the Seminary property will have potentially significant impacts upon Southern Marin, both positive and negative. Mill Valley has vital interests in the proposed land use changes and intensity for this site. Project-related impacts to local and regional traffic are the primary area of concern and staff expects this issue to receive intensive evaluation in the Draft EIR. On the positive side, we recognize the importance of new and affordable housing, community-serving facilities, and educational opportunities.

City staff have reviewed the proposed Scope of Work for the EIR and provide the following comments on the proposed Draft Transportation Impact Study (TIS) that will include CEQA impact analysis of vehicle miles travelled (VMT), as well as a Level of Service (LOS) assessment of vehicle delay. Similar to the County of Marin General Plan, the Mill Valley General Plan contains policies and standards related to LOS. It is important to local jurisdictions for the EIR to carefully analyze LOS impacts and transportation mitigations needed to improve local circulation post project implementation.

For the LOS assessment, please include the following intersections in the analysis during weekday and weekend peak periods:

Redwood Highway Frontage Road/Tiburon Blvd
US 101 Northbound offramp/Tiburon Blvd
US 101 Southbound offramp/Tiburon Blvd
US 101 Northbound onramp/eastbound Tiburon Blvd
US 101 Southbound onramp/eastbound E. Blithedale Avenue
E. Blithedale/Tower/Kipling
E. Blithedale/Lomita/Roque Moraes
E. Blithedale/Camino Alto

For the traffic scenarios being analyzed, the baseline should reflect current school traffic to local schools including Edna Maguire, Mill Valley Middle School, and Tampalpais High School. The cumulative analysis should reflect projected school enrollment and post-Covid travel projections.

If the above analysis indicates inconsistency with County General Plan policies, including CD-5.2 and TR-1.e., the City requests that Improvement Measures be identified for the project merits analysis and recommended Conditions of Approval. Further, staff recommends that identified Improvement Measures be reviewed for CEQA compliance within the EIR. Measures to be evaluated shall include:

- Infrastructure improvements;
- Review of wayfinding signage, turning restrictions, and/or roadway operational changes to encourage drivers to use the Redwood Highway Frontage Road/De Silva Island Road 101 northbound onramp and the "Seminary Drive"/Redwood Highway Frontage Road 101 southbound onramp rather than using Tiburon Blvd to leave the site. For arrivals, directions on websites and other materials should direct people to exit Hwy 101 at these locations;
- Transportation Demand Management improvements that encourage off-peak travel in addition to VMT mitigation measures.

In addition to the analysis of vehicles, the Transportation Impact Study should forecast project-related and cumulative increases in bicycle use. Improvement Measures should be developed for constrained corridors providing access to the project, including the Mill Valley-Sausalito Multiple-Use Path.

Please contact Lisa Newman, Senior Planner (lnewman@cityofmillvalley.org / 415-384-4811) or me (pkelly@cityofmillvalley.org / 415-388-4039) if you have questions regarding these comments. Thank you for your consideration of local interests and concerns in preparation of the EIR.

Best regards,

Patrick Kelly, AICP, Director
Mill Valley Planning and Building Department

Cc: Maureen Parton, Aide to Supervisor Moulton-Peters
Thomas Lai, Community Development Agency Director
Michelle Levenson, Senior Planner & Project Manager
Alan Piombo, City Manager, City of Mill Valley
Dina Tasini, Community Development Director, Town of Tiburon
Adam Wolff, Director of Planning and Building, Town of Corte Madera
Lilly Whalen, Community Development Director, City of Sausalito

Taylor, Tammy

From: Amezcua, Reyna@BCDC <reyna.amezcua@bcdc.ca.gov>
Sent: Friday, May 28, 2021 2:06 PM
To: EnvPlanning
Cc: Reid, Rachel; state.clearinghouse@opr.ca.gov; Sinha, Shruti@BCDC
Subject: BCDC Comments on the NOP of the Environmental Impact Report on the North Coast Land Holdings Project on the Former Golden Baptist Seminary Site
Attachments: Marin NOP Comment Letter - North Coast Land Holdings EIR.pdf

Dear Rachel Reid,

On behalf of Shruti Sinha, please find comments on the Environmental Impact Report for the above-referenced project.

Should you have any questions, please contact Ms. Sinha at 415/352-3654 or shruti.sinha@bcdc.ca.gov.

Thank you.

Reyna Amezcua
Secretary | Regulatory Division
San Francisco Bay Conservation and Development Commission
Bay Area Metro Center
375 Beale St., Suite 510
San Francisco, CA 94105
reyna.amezcua@bcdc.ca.gov
info@bcdc.ca.gov
Main Office Number: (415) 352-3600

___ ***ONLY BY ELECTRONIC TRANSMISSION***. *During the Coronavirus (COVID-19) pandemic, this office will be working remotely, not able to send physical mail as usual, and is therefore using only electronic mail.*

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San Francisco Bay Conservation and Development Commission
375 Beale Street, Suite 510, San Francisco, California 94105 tel 415 352 3600 fax 888 348 5190
State of California | Gavin Newsom – Governor | info@bcdc.ca.gov | www.bcdc.ca.gov

May 28, 2021

Rachel Reid
Environmental Planning Manager
Marin County Community Development Agency
3501 Civic Center Drive, Suite 308
San Rafael, CA 94903
Via email: <envplannin@marincounty.org>

SUBJECT: Notice of Preparation of an Environmental Impact Report for the North Coast Land Holdings LLC Planning Application on the Former Golden Baptist Seminary Site; BCDC Inquiry File No. MC.MC.7415.26

Dear Ms. Reid:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) of the Environmental Impact Report (EIR) on the North Coast Land Holdings Project received by our office on April 27, 2021. We understand that the proposed project includes construction of a new residential care facility with up to 100 independent and 50 assisted living and memory care apartments for senior citizens, 336 single- and multi-family residential units that would replace a majority of the existing residential housing, a pre-school (3,000 square feet) and fitness center (17,000 square feet) that would both be open to the public, and the replacement of an existing maintenance building, with more than 70 percent of the 127-acre campus intended for open space, athletic fields, paths and plazas.

The San Francisco Bay Conservation and Development Commission (BCDC or the Commission) is a responsible agency for this project and will rely on the EIR when considering approvals related to the project. While the description of the project in the NOP is not specific enough for BCDC staff to comment on every potential issue that could be raised with respect to BCDC's laws and policies, staff has prepared the following comments outlining issues under BCDC's jurisdiction that should be addressed as part of the EIR. Please note that the Commission itself has not reviewed the NOP. The following comments are based on BCDC staff review of the NOP, the *San Francisco Bay Plan* (Bay Plan), and the McAteer-Petris Act (Title 7.2 of the California Government Code (CGC)), the State legislative act by which the Commission and the Bay Plan is authorized.

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1. **JURISDICTION**

Portions of the project site identified in the NOP are within BCDC's permitting jurisdiction. Via the McAteer-Petris Act, the California Legislature has charged BCDC with granting or denying permits for any proposed fill, extraction, or substantial change in use in any part of the San Francisco Bay, its tidelands, and shoreline (CGC § 66632). More simply, BCDC jurisdiction can be understood in two categories:

"Bay Jurisdiction": San Francisco Bay, being all areas subject to tidal action, including tidelands (land lying between mean high tide and mean low tide) and submerged lands (CGC § 66610(a)).

"Shoreline Jurisdiction": A shoreline band consisting of all territory located between the shoreline of the Bay and 100 feet landward of and parallel to the shoreline (CGC § 66610(b)).

Of the nine parcels identified in the NOP, three parcels fall within one or both areas of BCDC's permitting jurisdiction:

- **Parcel A.** Parcel **043-401-16 (Parcel A)** is a land parcel whose western edge falls within the 100-foot shoreline band, and thus under BCDC's shoreline jurisdiction.
- **Parcel B.** Parcel **043-262-06 (Parcel B)** is a land parcel whose western edge falls within the 100-foot shoreline band and, likewise, falls under our shoreline jurisdiction.
- **Parcel C.** Parcel **043-262-03 (Parcel C)** is a Bay parcel that is largely submerged, but whose eastern edge includes land along the 100-foot shoreline band. This parcel is therefore under both Bay jurisdiction and shoreline jurisdiction.

The EIR should map and describe the elements of the project that will occur within BCDC's permitting jurisdiction, distinguishing between the Bay and shoreline band jurisdictions. Approval of BCDC permits requires consistency with the McAteer-Petris Act and the Bay Plan, portions of which will be discussed below under their corresponding CEQA Appendix G topics.

2. **LAND USE AND PLANNING**

The EIR should refer to the Bay Plan and McAteer-Petris Act when considering the proposed project's consistency with land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Bay Plan establishes policies for development and resource conservation within BCDC's jurisdiction, covering

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public access; the protection of Bay resources, including fish, other aquatic organisms, and wildlife; water quality; climate change; fills; shoreline protection; water-related uses; appearance, design, and scenic views; and mitigation.

3. **AESTHETICS**

The EIR should cite the Bay Plan and BCDC's Public Access Design Guidelines in the regulatory settings for the aesthetics analysis and discuss the project's consistency with these policies.

The Bay Plan's Appearance, Design, and Scenic Views policies are concerned with preserving and enhancing the scenic quality of the Bay and shoreline and ensuring that shoreline access paths feel inviting to the public. The policies state, in part, that "all bayfront development should be designed to enhance the pleasure of the user or viewer of the Bay," and "maximum efforts should be made to provide, enhance, or preserve views of the Bay and shoreline" (Policy 2); "structures and facilities that do not take advantage of or visually complement the Bay should be located and designed so as not to impact visually on the Bay and shoreline" (Policy 4); "access routes to Bay crossings should be designed so as to orient the traveler to the Bay" and "guardrails, fences, landscaping, and other structures related to such routes should be designed and located so as to maintain and to take advantage of Bay views" (Policy 7); and "views of the Bay from vista points and from roads should be maintained by appropriate arrangements and heights of all developments and landscaping between the view areas and the water" (Policy 14).

The construction of numerous residential buildings could drastically change the look and feel of the surrounding areas. Although the NOP does not state the exact location of the residential buildings, it is likely that the siting of large residential buildings near the shoreline will affect Bay view corridors. Thus, the EIR should evaluate whether the proposed development would have an adverse effect on scenic vistas and physical and visual public access to the Bay and shoreline.

4. **RECREATION**

The Bay Plan's Recreation policies state, in part, that "diverse and accessible water-oriented recreational facilities, such as marinas, launch ramps, beaches, and fishing piers, should be provided to meet the needs of a growing and diversifying population" (Policy 1). The EIR should consider the possible impacts the project may have on existing public access spaces nearby, including a BCDC designated Water Access Point in Brickyard Park and an approximately 1-mile segment of the Bay Trail. The Bay Trail runs along the shoreline adjacent to Parcel A, and along Seminary Drive adjacent to Parcel B's eastern border. These segments of the trail can be viewed at https://baytrail.org/baytrailmap.html.

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The NOP does not indicate whether any part of the 70 percent of the project area that is reserved for open space, athletic fields, paths and plazas will be open to the public. The EIR should map these facilities, determine the number of people they can accommodate and what, if any, part of these proposed facilities will be open to the public, and discuss the impact that public interaction with these facilities will have on the neighborhood. This will aid BCDC in determining whether the project will invite or discourage the public from venturing towards the shoreline from the nearest public thoroughfare.

As a matter of course, the construction of a preschool, fitness center, residential care facility, and apartment complex will bring more people to the Strawberry area. The EIR should therefore project the number of new residents, workers, customers, and other users expected at the site, their impact on existing public access areas, and evaluate whether the proposed new public access areas will accommodate these users and/or mitigate for these impacts.

Additionally, given the large quantity of assisted care housing for elderly residents, the EIR should consider the accessibility of public spaces within and adjacent to the project sites. The Bay Plan's Public Access Policy 8 states, in part, that public access improvements "should provide barrier free access for persons with disabilities, […] include an ongoing maintenance program, and should be identified with appropriate signs." For purposes of evaluating the accessibility of public access provisions, the EIR should also refer to California Building Code (CBC) Chapter 11B, Division 4 standards for accessible routes.

Providing this information will aid the Commission in determining whether the public access proposed with the project is the maximum feasible and consistent with the project.

5. **GEOLOGY AND SOILS**

The McAteer-Petris Act defines fill as "earth or any other substance or material, including pilings or structures placed on pilings, and structures floating at some or all times and moored for extended periods, such as houseboats and floating docks" (CGC § 66632). It is unclear from the NOP if the proposed project would require any filling of the Bay, or whether any portion of the proposed project would be taking place on fill. If, however, the project does involve fill, the preparers should keep in mind the Bay Plan's Safety of Fills finding that "hazards exist on the poor soils throughout the Bay Area, including soft natural soils, steep slopes, earthquake fault zones, and extensively graded areas," and that in order to "reduce risk of life and damage to property, special consideration must be given to construction on filled lands in San Francisco Bay" (Finding 1).

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The EIR should clearly state whether any aspect of the project involves fill, map those locations, and identify the materials to be used and the purpose for which they are to be used. The impact analysis of proposed fill should include discussion of the structural integrity of all proposed development given the seismological risk involved. Additionally, to aid BCDC's efforts to understand the sediment composition of the Bay and shoreline, the EIR should provide as much information on the existing soil in the project area as possible.

6. **HAZARDS AND HAZARDOUS MATERIALS**

The Bay Plan's Safety of Fills policies state that even where "the Bay Plan indicates that a fill may be permissible, no fill or building should be constructed if hazards cannot be overcome adequately for the intended use in accordance with the criteria prescribed by the Engineering Criteria Review Board" (Policy 2). The Bay Plan's Water Quality policies also have relevance to the EIR's hazards and hazardous materials discussion. New projects are required to be "sited, designed, constructed, and maintained to prevent or […] minimize the discharge of pollutants in the Bay" by controlling pollutant sources at the project site, using appropriate construction materials, and applying best management practices (Policy 3).

The EIR should identify whether any portions of the project site are polluted with toxic or hazardous substances, any anticipated effects associated with such pollution, and the role other regulatory agencies, including the State and Regional water boards and the Department of Toxic Substances Control, will take in reviewing and approving the project. In addition to Bay-related hazards, the EIR should also address include air pollution and refuse. Given that any increase in population will likely be accompanied by an increase in automobile traffic, the EIR should address the impact of projected traffic on pollution, and whether such pollution may have a negative impact on wildlife in the area. Furthermore, as the assisted living and memory care apartments may include medical facilities or involve storage, dispensation, or disposal of medical supplies and waste, the EIR should discuss the impacts of potentially toxic medical supplies and biohazards. The EIR should also identify the provision of waste disposal systems for such chemical hazards and evaluate their safety and efficacy.

7. **HYDROLOGY AND WATER QUALITY**

The EIR's hydrology and water quality analysis should refer to the following Bay Plan policies when considering the potential significance of any impacts.

Water Quality. Water Quality policies in the Bay Plan include requirements that water pollution be "prevented to the greatest extent feasible" (Policy 1); water quality "should be maintained at a level that will support and promote the beneficial uses of the Bay as identified in the Regional Water Quality Control Board's Water Quality Control Plan" and "should be protected from all harmful or potentially harmful pollutants" (Policy 2); "new

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projects should be sited, designed, constructed, and maintained to prevent or minimize the discharge of pollutants into the Bay" (Policy 3); projects in an area polluted with toxic or hazardous substances "will not cause harm to the public, to Bay resources, or to the beneficial uses of the Bay" (Policy 4); and, to protect the Bay from nonpoint source pollution, "new development should be sited and designed consistent with standards in municipal stormwater permits and State and regional stormwater management guidelines," and "to offset impacts from increased impervious areas and land disturbances" (Policy 6).

The proposed facilities – especially the residential developments – will require plumbing and wastewater infrastructure to support the large number of residents and visitors they will likely induce to the project sites. The EIR should map and describe sewer and other wastewater systems that will serve the proposed developments and clearly identify the location and expected contents of any drains that empty into the Bay. The EIR should also determine the capacity and vulnerability of these systems, and discuss the impacts of possible damage, overload, and malfunction, especially where such events might result in flooding. This will aid BCDC in assessing the risk of contamination in the Bay and safety hazards for people and wildlife in the Bay and on the shoreline.

Climate Change. Although climate change is not a requisite consideration in CEQA analyses, BCDC highly recommends that the EIR investigate the probability and impact of sea level rise as a matter of hydrology and water quality, and to consider how sea level rise may affect the significance of impacts in other topic areas, such as those related to geological hazards. Sea level rise threatens water quality not only through the release of contaminants into shoreline developments by overland flooding, but also through groundwater contamination caused by saltwater incursions into fresh groundwater reservoirs.

The Bay Plan's Climate Change policies require shoreline projects to provide a risk assessment by a qualified engineer that takes into account "the best estimates of future sea level rise" and current and planned flood protection (Policy 2); projects within areas determined through a risk assessment to be "vulnerable to future shoreline flooding that threatens public safety […] should be designed to be resilient to a mid-century sea level rise projection" (Policy 3); and if a proposed project is likely to remain in place longer than mid-century, "an adaptive management plan should be developed to address long-term impacts […] using the best available science-based projection for sea level rise at the end of the century" (Policy 3). As of May 2021, the best available science-based projections for sea level rise can be found in the State of California's 2018 Sea-Level Rise Guidance, available at: http://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20180314/Item3_Exhibit-A_OPC_SLR_Guidance-rd3.pdf.

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The EIR should also determine the locations of possible groundwater incursions, and analyze the impact of saline groundwater rise on the level and quality of fresh groundwater and the efficacy of possible prevention and mitigation methods (e.g., groundwater barriers).

Flooding. The Bay Plan's Safety of Fills policies state, in part, that the project should be "properly engineered to provide erosion control and flood protection for the expected life of the project based on a 100-year flood event that takes future sea level rise into account, by 'professionals knowledgeable of the Commission's concerns, such as civil engineers experienced in coastal processes'" (Policy 1); "authorized protective projects should be regularly maintained according to a long-term maintenance program to assure that the shoreline will be protected from tidal erosion and flooding" (Policy 4); "shoreline protection projects should include components to retain safe and convenient water access, for activities such as fishing, swimming, and boating" (Policy 6), and "all contamination remediation projects in the Bay or along the Bay shoreline should integrate the best available science on sea level rise, storm surge, and associated groundwater level changes into the project design in order to protect human and ecological health by preventing the mobilization of contaminants into the environment" (Policy 8).

The EIR should discuss the impact of the project on water quality in the Bay and shoreline areas, and their effectiveness against flooding from sea level rise, groundwater rise, runoff, and flash floods. To this end, the EIR discussion of flood hazards and the potential for flooding to result in the release of pollutants should include a description of the project site's existing and future vulnerability to inundation and storm surge. This description should identify the Mean Higher High Water line, the 100-year flood elevation, mid-and end of century sea level projections using the 2018 State of California Sea Level Rise Guidance, anticipated site-specific storm surge effects, and a preliminary assessment of the proposed project's vulnerability to future flooding and sea level rise. In addition, the EIR should describe how the project has been designed to tolerate, adapt to, and manage shoreline flooding at the site to ensure the project is resilient to mid-century sea level rise projections, and, if it is likely to remain in place longer than mid-century, how it can adapt to conditions at the end of the century.

Resources available to assist the preparers of the EIR in the above assessments include Adapting to Rising Tides (ART) maps and data products developed by BCDC, including the Bay Shoreline Flood Explorer (http://www.adaptingtorisingtides.org/maps-and-data-products), and the Sea Level Rise and Coastal Flooding Impacts Viewer developed by NOAA Coastal Services Center in collaboration with a number of other agencies and organizations (https://coast.noaa.gov/slr).

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8. **UTILITIES AND SERVICE SYSTEMS**

The introduction of new residential housing units may require construction or expansion of the existing infrastructure for utilities and service systems to meet the needs of increased population. The Bay Plan's Other Uses of the Bay and Shoreline policies state, in part, that "high voltage transmission lines should be placed in the Bay only when there is no reasonable alternative" (Policy 5); power distribution and telephone lines should either be placed underground [or in an attractive, streamlined overhead arrangement] in any new residential, commercial, public, or view area near the shores of the Bay (Policy 6); and sewage treatment or wastewater reclamation plants, power plants and pipeline terminal and distribution facilities may be located near the shoreline if they "do not interfere with and are not incompatible with residential, recreational, or other public uses of the Bay and shoreline" (Policies 7, 9, and 13).

The EIR should map and determine the current capacity of any existing utilities and service systems in the project area. The EIR should also map any proposed additions, removals, or improvements to these systems, analyze their safety and capacity, and whether they comply with the Bay Plan's policies on where and how such facilities should be installed. This will aid BCDC in determining the impact they might have on appearance and public access.

Additionally, the EIR should project the output of waste produced by operations in the new developments, and identify the waste disposal services that will be used to manage that output. If the assisted living units operate in any way as a healthcare facility which might introduce hazardous medical waste to the area, the EIR should discuss the capacity of those services for handing such waste.

9. **TRANSPORTATION**

The Bay Plan's Transportation policies address transportation as a matter of reducing fill, providing that "county congestion management agencies and other public and private transportation authorities should avoid planning or funding roads that would require fill in the Bay and certain waterways" (Policy 1); and that transportation projects on the Bay shoreline "should be designed to maintain and enhance visual and physical access to the Bay and along the Bay shoreline" and "should include pedestrian and bicycle paths that will either be a part of the Bay Trail or connect the Bay Trail with other regional and community trails" (Policy 4).

The Bay Plan also addresses transportation issues in its Public Access policies. Under the McAteer-Petris Act, the project must provide "maximum feasible public access, consistent with a proposed project." The Bay Plan's Public Access Policies expound on this directive, stating, in part, that "maximum feasible access to and along the waterfront and on any permitted fills should be provided in and through every new development in the Bay or on the shoreline" (Policy 2); "access to and along the

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waterfront should be provided by walkways, trails, or other appropriate means and connect to the nearest public thoroughfare where convenient parking or public transportation may be available" (Policy 10); "roads near the edge of the water should be designed as scenic parkways for slow-moving, principally recreational traffic" and "should maintain and enhance visual access for the traveler" (Policy 11); and that all such access should be sited, designed, and managed "to prevent significant adverse effects on wildlife" (Policy 4) and "avoid significant adverse impacts from sea level rise and shoreline flooding" (Policy 6).

The EIR should discuss how the proposed project's siting and the projected influx of new people to the area will impact traffic in the area, and how that traffic will impact air quality and noise. The EIR should discuss changes to road design and traffic patterns, identifying any areas expected to experience congestion or high speeds. In particular, the EIR should discuss the potential for construction vehicles and commuter traffic to impact users of the Bay Trail segment. If the project's site access improvements would affect the configuration of Seminary Drive, the EIR should discuss whether those improvements would pose a safety hazard for users of the Bay Trail segment. If the analysis shows that the project would result in increased traffic congestion along the Bay Trail, the EIR should discuss whether the increase would pose a safety hazard for users of the trail or otherwise affect its usability.

The EIR should also map existing and proposed parking spaces, identify where and when these parking accommodations are available to the public, and determine whether they meet CBC 11-B standards for accessibility. This will aid BCDC in determining whether the project provides adequate public access accommodations commensurate with the projected increase in population and vehicle traffic.

We appreciate your attention to the topics discussed above and for the opportunity to make the above comments on the scope of the EIR. If you have any questions or concerns regarding this matter, please do not hesitate to contact me at (415)-352-3654 or by email at shruti.sinha@bcdc.ca.gov.

Sincerely,

DocuSigned by:
DD5E3B0D1CA04EF...

SHRUTI SINHA
Shoreline Development Analyst

cc: State Clearinghouse

SS/ra

Taylor, Tammy

From: Barbara Rowe <barbrowe@aol.com>
Sent: Thursday, September 24, 2020 4:11 PM
To: EnvPlanning
Subject: Fwd: North Coast Land Holdings Community Plan Amendment/Master Plan Amendment/Design Review/Tree Removal Permit/Master Use Permit/Tentative Map on the Golden Gate Baptist Seminary property Update

I have been a resident of Strawberry for 44 years.

This incredible piece of property MUST HAVE MAXIMUM NUMBER of low cost and affordable homes for the many people who work in Marin and need them (teachers, medical workers, caregivers, fire fighters, postal workers.....you know what I mean.
The development plan should not be determined by a few nearby neighbors.

PLEASE MAKE IT HAPPEN.

Thank you

Barbara Rowe
100 Ricardo Rd, Mill Valley
415-686-1549, 415-383-8006

-----Original Message-----
From: Marin County Subscriptions <camarin@public.govdelivery.com>
To: barbrowe@aol.com
Sent: Thu, Sep 24, 2020 3:51 pm
Subject: North Coast Land Holdings Community Plan Amendment/Master Plan Amendment/Design Review/Tree Removal Permit/Master Use Permit/Tentative Map on the Golden Gate Baptist Seminary property Update

Greetings Subscriber,
This is to announce that the Notice of Preparation of an Environmental Impact Report for the North Coast Land Holdings, LLC Community Plan Amendment, Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal Permit (Project ID P1490) has been released and is available to review online. Please review the environmental project webpage through this link for more information. The Planning project page can also be viewed through this link. If you wish to comment during the Notice of Preparation (NOP) comment period we will accept written comments about the scope of the environmental report until the close of the NOP comment period at **4:00 p.m.** on **Monday, October 26, 2020**. Commenters are advised to mail written comments postmarked on or before October 26, 2020 to the attention of Rachel Reid, Environmental Planning Manager at 3501 Civic Center Drive, Suite 308, San Rafael, CA 94903. Comments can also be submitted via email to envplanning@marincounty.org before the end of the comment period deadline. Please visit the above linked webpages for more information. If you disagree with the foregoing determination regarding environmental review of the project, you may appeal it to the Board of Supervisors. A Petition for Appeal and a $1,408.00 filing fee must be submitted in the Community Development Agency - Planning Division, Room 308, Civic Center, San Rafael, within five business days, or no later than 4:00 P.M., Friday, October 2, 2020.

If you are a person with a disability and require an accommodation, copies of documents are available in alternative formats upon request by calling (415) 473-4381 (Voice), (415) 473-3232 (TDD/TTY), or by email.

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This email was sent to barbrowe@aol.com using GovDelivery Communications Cloud on behalf of: County of Marin

Taylor, Tammy

From: Penny Crow <pennyec10@gmail.com>
Sent: Sunday, October 25, 2020 11:43 PM
To: EnvPlanning
Subject: North Coast Land Holdings

As a 25 year resident of Strawberry, I am appalled to know that you are going ahead with the EIR.

The disregard for the Strawberry Design Review Board recommendation and Strawberry community input is shameful.

I am in complete support of Riley Hurd's letter of appeal to the Board of Supervisors, dated October 1, 2020.

Penny Crow

Taylor, Tammy

From: Davis Law Offices <pmd@davislawoffice.com>
Sent: Monday, October 26, 2020 12:08 PM
To: EnvPlanning
Subject: Emailing: EIR OBJECTION 001.PDF
Attachments: EIR OBJECTION 001.PDF

Please see attached and send acknowledgment of receipt.

P. M. Davis
Attorney at Law
10/26/2020 at 1206 hrs.

SEATTLE
(206) 497-1188
WASHINGTON, DC
(202) 241-1316
SAN MATEO
(650) 349-0700

PAUL M. DAVIS
ATTORNEY AT LAW
1 BLACKFIELD DRIVE #193
TIBURON, CALIFORNIA 94920-2053
TELEPHONE: (415) 884-2555

PAUL M. DAVIS
ALSO ADMITTED IN THE
DISTRICT OF COLUMBIA
AND THE
STATE OF WASHINGTON

October 26, 2020

BY EMAIL TO: envplanning@marincounty.org
AND BY FIRST-CLASS MAIL

Michelle Levenson
Senior Planner
County of Marin
3501 Civic Center Drive
Room 308
San Rafael, California 94903

In re: Project ID no. P1490

OBJECTION AND OPPOSITION TO APPLICATION

Dear Michelle Levenson:

I, by and through my Trust, am the owner of residential real property located entirely within the unincorporated CDP of the County of Marin commonly known as Strawberry and/or Alto Strawberry, which is within the scope of Project No. P1490.

Without waiving any of the objections set forth below to the fatally defective purported Notice of Preparation of Environmental Impact Report ("Notice") I hereby OBJECT to the application of North Coast Land Holdings, LLC relative to the referenced project and further object to the preparation of the proposed environmental review and preparation of an Environmental Impact Report ("EIR").

First of all, I was not provided with proper or adequate notice of the application because, for the reasons I shall discuss below, the Notice I received was improperly addressed to me, inadequate and legally insufficient. I include herewith as Exhibit "A" a true copy of the document I received on Saturday September 24, 2020, purporting to be the Notice. Even though the Notice was allegedly mailed to me on September 25, 2020, I did not receive it in a timely manner because it was addressed to me at "160 Seminary Drive, Unit 3C, Mill Valley, California 94941." That is not now, nor has it ever been, my address for any purpose; I have no idea where that address and have never been there.

Next, the Notice states that the "comment period" for anyone choosing to offer comments on the proposal set forth in the Notice opens on September 25, 2020, the same day it was allegedly mailed. The Notice further states that the comment period closes on October 26, 2020. Inasmuch as the Notice was not mailed *before* the opening of the comment period (September 25, 2020), it is fatally defective because the full thirty day period for comment was not afforded.

Additionally, because the Notice was mailed to me at an incorrect address I was not provided with proper or timely notice of the proposed action, thus the Notice is fatally defective in that regard as well.

Moreover, the Notice is vague and uncertain. It does not adequately describe the scope of the project under consideration as it simply refers the reader to some vague and obscure websites for further vague and obscure information, which requires the reader to attempt to figure out, from vague and incomprehensible data, what the scope of the proposed project is. It also assumes everybody has online access so such vague and obscure information, a false assumption. Notwithstanding that, most lawyers could not figure this out; I doubt any non-lawyer who is not trained in urban planning would even have a clue. The absence of adequate information in the Notice is, in and of itself, a fatal defect that should bar the proposed review and ensuing EIR.

Next, the Notice also states that an administrative appeal may be taken "within five business days, or no later than 4:00 P.M., October 2, 2020." For the reasons stated above, it would have been impossible to file an appeal "within five business days" because (i) the defective Notice does not state when the "five business days" begins to run, and (ii) it was not properly addressed to me in any event. Additionally, the last day to file an appeal, according to the Notice, was October 2, 2020, twenty-four days *before* the close of the comment period of October 26, 2020, rendering the comment period a sham. Accordingly, the Notice is fatally defective in these respects as well.

Finally, the Notice is thus fatally defective for each, every, and all of the reasons set forth above. Accordingly, the County cannot proceed with the applicant's Application an EIR report or if one has been prepared is must be recalled, set aside and vacated.

IMPROPER CONDUCT BY COUNTY BUREAUCRATS

I am absolutely convinced that the way this matter has been handled by Marin staffers and the Board of Supervisors as well, and the decision to proceed with the review set forth in the Notice, the outcome was predetermined long before the Notice was sent out, and that the act of sending out the Notice was nothing more than a pretext, sham in the form of a lame and hollow attempt to give the mere appearance of compliance with the law solely for the purpose of providing some county bureaucrat with an empty and disingenuous means of stating they followed the law when in fact they had not.

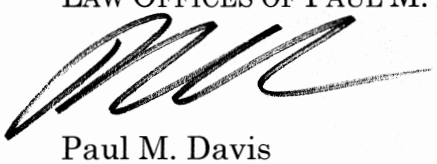
It is absolutely crystal clear to me that the entire Board of Supervisors and the Marin Planning Department, collectively and individually, are not acting in good faith or in the best interests of those of us who elected the several members of the Board of Supervisors who are supposed to act in our best interest; rather, their goal and motive was, and it still is, to embrace, adopt and advance the flawed policy of the far-left state government in its quest to impose its far-left agenda on every city and county in this state. They accomplish this by enacting state laws to circumvent local zoning and other local controls in order to replace local controls with incompatible and inconsistent state controls thereby usurping local control and subordinating the rights of homeowners and businesses to those of the unfortunate ranks of the homeless population. The state's way of handling the unfortunate homeless crisis is to simply shove it down our throats without regard to local needs and desires. There are plenty of venues throughout this state, such as the Central Valley, that are better suited to handle the unfortunate homeless problem. But the state politicians, including Newsom, cannot get cities and counties to implement what they want. These politicians are not interested in examining such alternative venues because their goal is a total egalitarian state, so they simply enact state legislation to put the clamps on local governments' right to govern locally. Marin, which for decades has been a unique and very safe place to live, will soon be indistinguishable from San Francisco with all the crime and blight that prevails there. This is a major concern of many, perhaps most, residents of Marin.

I am most hopeful that the horrible things that are now taking place in Marin will bring about major changes in the elected composition of every city council in Marin and the Marin Board of Supervisors as well so that those who are elected to hold office to represent us actually represent the interests of only the residents of Marin, not the entire state of California, and when the state attempts to usurp local power and shove down our throats problems occurring outside Marin we can at least be assured that our elected local officials will have our backs and will zealously defend our interests against the state.

Nothing contained herein is in any way intended to, nor should it be deemed as, a waiver of the defects discussed above as well as all rights and remedies I have or may have.

Very truly yours,

LAW OFFICES OF PAUL M. DAVIS



Paul M. Davis
Attorney at Law

Enclosure (Exhibit "A")

cc: Kathrin Sears (Supervisor)
Michael McGuire (State Senator)
Marc Levine (Assemblyman)

nunity Development Agency
ing Division
Civic Center Drive, Suite 308
afael, CA 94903-4157
73-6269 T
73-7880 F
73-2255 TTY
narincounty.org/pla

Notice of Preparation of Environmental Impact Report

North Coast Land Holdings, LLC Community Plan Amendment, Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal Permit **Project ID:** P1490

APN(s): 043-261-25; 043-261-26; 043-262-03; 043-262-06; 043-401-05; 043-401-10; 043-401-16; 043-402-03; 043-402-06

Project Address: 201 Seminary Drive, Mill Valley, CA 94941 **Applicant:** North Coast Land Holdings, LLC.

Project Planner: Michelle Levenson, Senior Planner **Phone:** (415) 473-6269

Email: envplanning@marincounty.org

Project Summary: The applicant, North Coast Land Holdings, LLC, is supplementing its previously submitted Community Plan Amendment request with an application for Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal Permit approval to allow the redevelopment of portions of the existing Seminary campus (please see project details on website links referenced below).

Comment period commences: September 25, 2020 **Comment period deadline:** October 26, 2020

Project details: Available on the environmental and planning project webpages under current projects: https://www.marincounty.org/depts/cd/divisions/environmental-review

Appeal Rights: If you disagree with the foregoing determination regarding environmental review of the project, you may appeal it to the Board of Supervisors. A Petition for Appeal and a $1,408.00 filing fee must be submitted in the Community Development Agency - Planning Division, Room 308, Civic Center, San Rafael, within five business days, or no later than 4:00 P.M., October 2, 2020.

More information about this application is available online at http://www.marincounty.org/depts/cd/divisions/planning/projects, where projects are listed for the Alto Strawberry area.

EXHIBIT "A"

Taylor, Tammy

From: Family <sdisenhof@comcast.net>
Sent: Monday, October 26, 2020 3:05 PM
To: EnvPlanning
Subject: North Coast Holding EIR
Attachments: Seminary letter 23 Oct 2020.pdf

Attached is the letter I've sent to the Board of Supervisors and will be forwarding to the media ahead of the November 10th hearing.

-sd

Steve Disenhof
family@disenhof.com

Stephen Disenhof
Joanne Hom, M.D.
34 Topside Way
Mill Valley, CA 94941
family@disenhof.com

23 October 2020

Board of Supervisors
c/o Community Development Agency
County of Marin
3501 Civic Center Drive, Suite #308
San Rafael, CA 94903

Re: North Coast Land Holdings Community Plan Amendment/Master Plan/Design Review/Master Use Permit/Tentative Map/Tree Removal Permit on the former Golden Gate Baptist Seminary property (P1490)

Dear Members of the Board of Supervisors,

I write to you as a past President of the Strawberry Point Homeowners Association. While I no longer speak for the HOA, I am confident my views reflect my fellow homeowners.

I consider myself neither naïve, nor particularly cynical, yet am astonished at the Planning Department decision to go ahead, again, with an environmental review of the North Coast Plan.

Thirty years ago, I had the honor to work with Al Aramburu and the Planning Department on a solution to long-standing issues in our community and was delighted in the thoughtfulness and professionalism of the Department. Yet this current decision leaves me incredulous. The Strawberry Design Review Board again unanimously rejected the North Coast Plan, given that it was even more intensive than the plan originally presented and rejected by your Board. And how can North Coast's simply lining out sections of our Community Plan possibly be acceptable?

In the intervening years between the 1953 adoption of the CUP, Strawberry Point was developed. Strawberry Spit was developed. Seminary Cove was built out. Homes were added on Chapel and Storer Drives. And throughout Strawberry, undeveloped lots were turned into homes. Meanwhile, the two roads leading in and out of Strawberry remain essentially as they were in 1953. Narrow and frequently congested. Occasionally impassable on East Strawberry when the elementary school is transitioning.

When Branson briefly considered moving into the Seminary property, its own traffic study indicated that it would need to take extreme measures to mitigate the additional traffic. And that was for a day school where carpooling was an option and where thoughts of going beyond 400 students was something for the far distant future, it at all.

In the experience of our 33 years in Strawberry, the Baptist Seminary never had more than a few hundred students on campus, and overwhelmingly they lived on site. To move to a 1,000 student (plus

staff) college, plus all of the additional non-student housing and recreational activities being proposed, this plan should be a non-starter.

What the thinking is of North Coast does make me feel cynical. Perhaps this is how things are done in Texas? Perhaps one of the wealthiest families in America believes it can buy whatever it wants? Perhaps it is believing that the residents' concerns of this unincorporated area served by a single member of the Board won't be taken seriously by the other members of your Board? I don't know.

However, I ask your Board to take into consideration the unanimous recommendation of the Strawberry Design Review Board and the points elaborated in the Appeal by Mr. Hurd and again reject the environmental review by the Planning Department.

Thank you for your time and consideration.

Regards,

-sd

Stephen Disenhof

Taylor, Tammy

From: paulkayfetz@yahoo.com
Sent: Friday, October 30, 2020 4:54 PM
To: EnvPlanning
Subject: NORTHCAL EIR PREPAREDNESS

Paul Kayfetz would like information about:
.
337 to 546 townhouses, a quarter of a million square foot set of buildings for 150 seniors with attendants, and several business structures are proposed.

Not included in the Environmental Review is the claimed existing right to also build and operate a 1000 student commuter college.

The 1000 students and 2000 staff -- not afforded on-campus housing -- would be looking for housing in Marin.

These 1200 individuals, some with thus would be displacing that many others seeking Marin housing.

Or, they would be added to the bridge traffic in the morning and afternoon rush hours.

A primary reason for the Appeal in front of the Supervisors on November 10 is that the College and its 1200 person housing/traffic impact are excluded from the Project Environmental Review.

Paul Kayfetz
405 East Strawberry Dr.
Mill Valley, CA 94941

415 380-8494

Taylor, Tammy

From: Davis Law Offices <pmd@davislawoffice.com>
Sent: Sunday, November 08, 2020 6:38 PM
To: EnvPlanning
Cc: Riley F. Hurd III
Subject: Emailing: EIR - Objection to Hearing on Appeal COPY.pdf
Attachments: EIR - Objection to Hearing on Appeal COPY.pdf

Please see attached.

SEATTLE
(206) 497-1188
WASHINGTON, DC
(202) 241-1316
SAN MATEO
(650) 349-0700

PAUL M. DAVIS

ATTORNEY AT LAW

1 BLACKFIELD DRIVE #193

TIBURON, CALIFORNIA 94920-2053

TELEPHONE: (415) 884-2555

PAUL M. DAVIS

ALSO ADMITTED IN THE
DISTRICT OF COLUMBIA
AND THE
STATE OF WASHINGTON

November 8, 2020

BY EMAIL TO: envplanning@marincounty.org
AND BY FIRST-CLASS MAIL

Rachel Reid
Planning Manager
County of Marin
3501 Civic Center Drive
Room 308
San Rafael, California 94903

In re: Project ID no. P1490

OBJECTION AND OPPOSITION TO HEARING ON APPEAL

Dear Rachel Reid:

For the reasons set forth in my written OBJECTION AND OPPOSITION TO APPLICATION, dated October 26, 2020, a true and correct copy of which I include herewith, the Board of Supervisors is without jurisdiction to proceed, and therefore cannot proceed, to hear the appeal on November 10, 2020.

I request that this OBJECTION AND OPPOSITION TO THE HEARING ON APPEAL, including the OBJECTION AND OPPOSITION TO THE APPLICATION of October 26, 2020, be made a part of, and incorporated into, the record.

Very truly yours,

LAW OFFICES OF PAUL M. DAVIS

Paul M. Davis
Attorney at Law

Enclosure

cc: Riley Hurd, Esq. (w/enclosure)

COPY

SEATTLE
(206) 497-1188
WASHINGTON, DC
(202) 241-1316
SAN MATEO
(650) 349-0700

PAUL M. DAVIS
ATTORNEY AT LAW
1 BLACKFIELD DRIVE #193
TIBURON, CALIFORNIA 94920-2053
TELEPHONE: (415) 884-2555

PAUL M. DAVIS
ALSO ADMITTED IN THE
DISTRICT OF COLUMBIA
AND THE
STATE OF WASHINGTON

October 26, 2020

BY EMAIL TO: envplanning@marincounty.org
AND BY FIRST-CLASS MAIL

Michelle Levenson
Senior Planner
County of Marin
3501 Civic Center Drive
Room 308
San Rafael, California 94903

In re: Project ID no. P1490

OBJECTION AND OPPOSITION TO APPLICATION

Dear Michelle Levenson:

I, by and through my Trust, am the owner of residential real property located entirely within the unincorporated CDP of the County of Marin commonly known as Strawberry and/or Alto Strawberry, which is within the scope of Project No. P1490.

Without waiving any of the objections set forth below to the fatally defective purported Notice of Preparation of Environmental Impact Report ("Notice") I hereby OBJECT to the application of North Coast Land Holdings, LLC relative to the referenced project and further object to the preparation of the proposed environmental review and preparation of an Environmental Impact Report ("EIR").

First of all, I was not provided with proper or adequate notice of the application because, for the reasons I shall discuss below, the Notice I received was improperly addressed to me, inadequate and legally insufficient. I include herewith as Exhibit "A" a true copy of the document I received on Saturday September 24, 2020, purporting to be the Notice. Even though the Notice was allegedly mailed to me on September 25, 2020, I did not receive it in a timely manner because it was addressed to me at "160 Seminary Drive, Unit 3C, Mill Valley, California 94941." That is not now, nor has it ever been, my address for any purpose; I have no idea where that address and have never been there.

COPY

Next, the Notice states that the "comment period" for anyone choosing to offer comments on the proposal set forth in the Notice opens on September 25, 2020, the same day it was allegedly mailed. The Notice further states that the comment period closes on October 26, 2020. Inasmuch as the Notice was not mailed *before* the opening of the comment period (September 25, 2020), it is fatally defective because the full thirty day period for comment was not afforded.

Additionally, because the Notice was mailed to me at an incorrect address I was not provided with proper or timely notice of the proposed action, thus the Notice is fatally defective in that regard as well.

Moreover, the Notice is vague and uncertain. It does not adequately describe the scope of the project under consideration as it simply refers the reader to some vague and obscure websites for further vague and obscure information, which requires the reader to attempt to figure out, from vague and incomprehensible data, what the scope of the proposed project is. It also assumes everybody has online access so such vague and obscure information, a false assumption. Notwithstanding that, most lawyers could not figure this out; I doubt any non-lawyer who is not trained in urban planning would even have a clue. The absence of adequate information in the Notice is, in and of itself, a fatal defect that should bar the proposed review and ensuing EIR.

Next, the Notice also states that an administrative appeal may be taken "within five business days, or no later than 4:00 P.M., October 2, 2020." For the reasons stated above, it would have been impossible to file an appeal "within five business days" because (i) the defective Notice does not state when the "five business days" begins to run, and (ii) it was not properly addressed to me in any event. Additionally, the last day to file an appeal, according to the Notice, was October 2, 2020, twenty-four days *before* the close of the comment period of October 26, 2020, rendering the comment period a sham. Accordingly, the Notice is fatally defective in these respects as well.

Finally, the Notice is thus fatally defective for each, every, and all of the reasons set forth above. Accordingly, the County cannot proceed with the applicant's Application an EIR report or if one has been prepared is must be recalled, set aside and vacated.

COPY

IMPROPER CONDUCT BY COUNTY BUREAUCRATS

I am absolutely convinced that the way this matter has been handled by Marin staffers and the Board of Supervisors as well, and the decision to proceed with the review set forth in the Notice, the outcome was predetermined long before the Notice was sent out, and that the act of sending out the Notice was nothing more than a pretext, sham in the form of a lame and hollow attempt to give the mere appearance of compliance with the law solely for the purpose of providing some county bureaucrat with an empty and disingenuous means of stating they followed the law when in fact they had not.

It is absolutely crystal clear to me that the entire Board of Supervisors and the Marin Planning Department, collectively and individually, are not acting in good faith or in the best interests of those of us who elected the several members of the Board of Supervisors who are supposed to act in our best interest; rather, their goal and motive was, and it still is, to embrace, adopt and advance the flawed policy of the far-left state government in its quest to impose its far-left agenda on every city and county in this state. They accomplish this by enacting state laws to circumvent local zoning and other local controls in order to replace local controls with incompatible and inconsistent state controls thereby usurping local control and subordinating the rights of homeowners and businesses to those of the unfortunate ranks of the homeless population. The state's way of handling the unfortunate homeless crisis is to simply shove it down our throats without regard to local needs and desires. There are plenty of venues throughout this state, such as the Central Valley, that are better suited to handle the unfortunate homeless problem. But the state politicians, including Newsom, cannot get cities and counties to implement what they want. These politicians are not interested in examining such alternative venues because their goal is a total egalitarian state, so they simply enact state legislation to put the clamps on local governments' right to govern locally. Marin, which for decades has been a unique and very safe place to live, will soon be indistinguishable from San Francisco with all the crime and blight that prevails there. This is a major concern of many, perhaps most, residents of Marin.

COPY

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Nothing contained herein is in any way intended to, nor should it be deemed as, a waiver of the defects discussed above as well as all rights and remedies I have or may have.

Very truly yours,

LAW OFFICES OF PAUL M. DAVIS

Paul M. Davis
Attorney at Law

Enclosure (Exhibit "A")

cc: Kathrin Sears (Supervisor)
Michael McGuire (State Senator)
Marc Levine (Assemblyman)

COPY

nunity Development Agency
ing Division
Civic Center Drive, Suite 308
afael, CA 94903-4157
73-6269 T
73-7880 F
73-2255 TTY
marincounty.org/plan

COPY

Notice of Preparation of Environmental Impact Report

North Coast Land Holdings, LLC Community Plan Amendment, Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal Permit **Project ID:** P1490

APN(s): 043-261-25; 043-261-26; 043-262-03; 043-262-06; 043-401-05; 043-401-10; 043-401-16; 043-402-03; 043-402-06

Project Address: 201 Seminary Drive, Mill Valley, CA 94941 **Applicant:** North Coast Land Holdings, LLC.

Project Planner: Michelle Levenson, Senior Planner **Phone:** (415) 473-6269

Email: envplanning@marincounty.org

Project Summary: The applicant, North Coast Land Holdings, LLC, is supplementing its previously submitted Community Plan Amendment request with an application for Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal Permit approval to allow the redevelopment of portions of the existing Seminary campus (please see project details on website links referenced below).

Comment period commences: September 25, 2020 **Comment period deadline:** October 26, 2020

Project details: Available on the environmental and planning project webpages under current projects: https://www.marincounty.org/depts/cd/divisions/environmental-review

Appeal Rights: If you disagree with the foregoing determination regarding environmental review of the project, you may appeal it to the Board of Supervisors. A Petition for Appeal and a $1,408.00 filing fee must be submitted in the Community Development Agency - Planning Division, Room 308, Civic Center, San Rafael, within five business days, or no later than 4:00 P.M., October 2, 2020.

More information about this application is available online at http://www.marincounty.org/depts/cd/divisions/planning/projects, where projects are listed for the Alto Strawberry area.

EXHIBIT "A"

Taylor, Tammy

From: Alex Johnson <johnsona@yahoo.com>
Sent: Saturday, December 05, 2020 12:07 PM
To: EnvPlanning
Subject: Seminary EIR Comment
Attachments: Dec 5 EIR Letter _Johnson.pdf

Dear Rachel,
Please see my attached comments regarding the North Coast Development Proposed EIR.

Please confirm receipt.

Thank you.

Alexander L. Johnson
Mill Valley, CA

December 5, 2020

379 East Strawberry Drive
Mill Valley, CA 94941

From: Alexander L. Johnson, Strawberry Resident

To: Rachel Reid, Environmental Planning Manager, Country of Marin

Re: Revised Notice of Preparation and Extension of Comment Period for Environmental Impact Report for The North Coast Land Holdings. Community Plan Amendment, Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal Permit project

Dear Planning Manger Reid:

To ensure the EIR is thorough and adequate, please consider the negative impact on Transportation safety and usability for bikers and pedestrians on East Strawberry Drive resulting from added vehicle traffic due to the proposed development.

In this area there are no sidewalks in many places nor safe shoulders. Increased vehicle traffic between Heron Drive and Strawberry Point Elementary school will put our residents and children at risk.

Any increase in risk of traffic fatalities due to this development should not be acceptable to our community.

Please see Exhibits (Photos) 1-5 which are attached on subsequent pages and are integral context to my comments below.

Background:

- The neighborhood is heavily residential.
- Strawberry Point Elementary School has 300+ students
- Many neighborhood students walk and bike to School for transportation using East Strawberry Drive.
- The roadway today has the lowest form of biker safety (Class III Bike Lane – Shared Roadway) – no barriers at all. Any additional traffic will increase hazards for pedestrians and bikers.
- There are no sidewalks on long sections of E. Strawberry Drive between the between Heron Drive (road outlet from Proposed North Coast Development) and Strawberry Point School, making the road even more dangerous.

Concerns for EIR to Address:

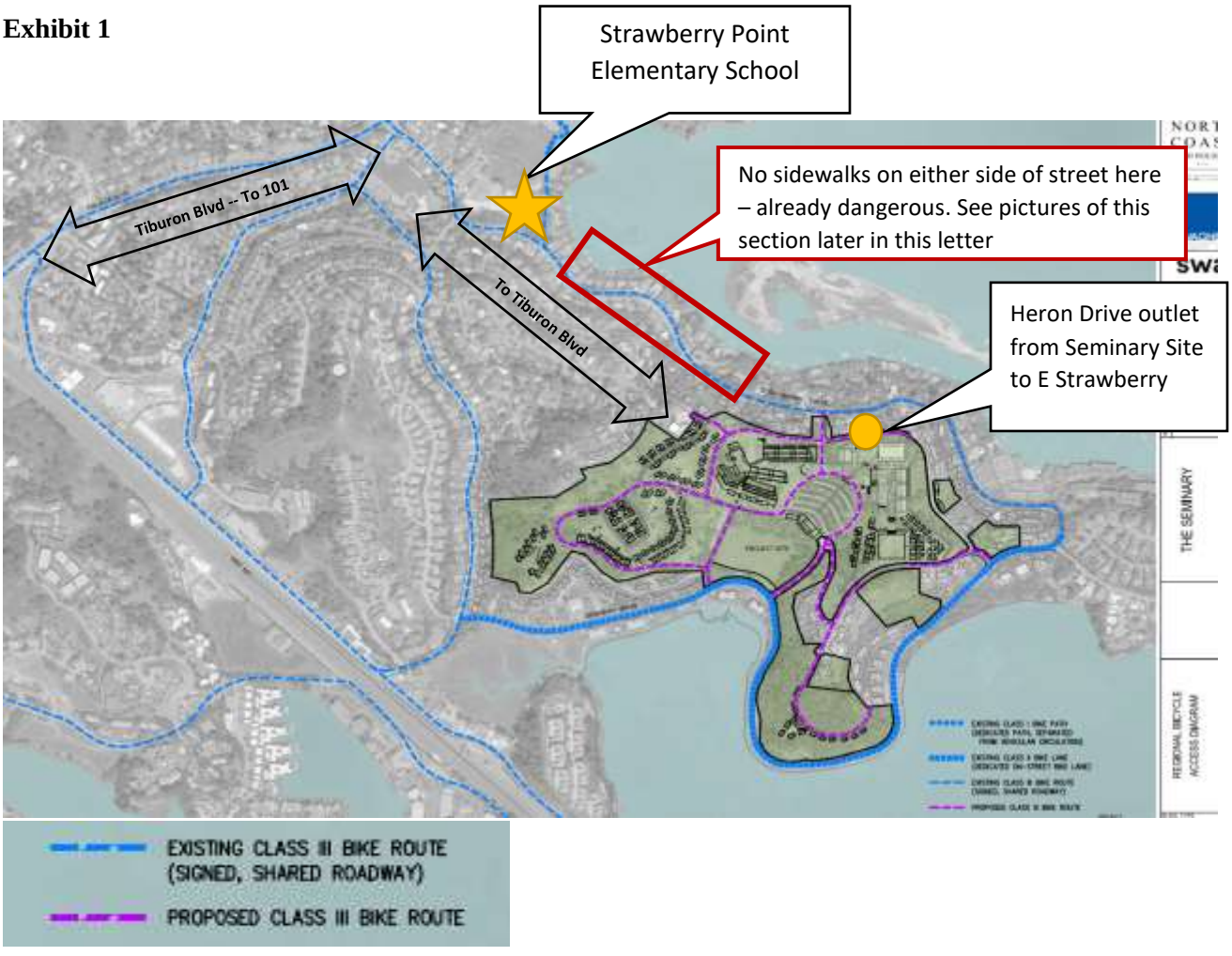
- **Added Risk of Injury on Street from More Cars.** Consider how the added traffic will create added risk to pedestrians and bikers on E. Strawberry Drive as there is already substantial risk cars hitting pedestrians.
- **Traffic Volumes Not Consistent With Road Capacity Or Intended Use**. Consider that E. Strawberry Drive is a small back road. If the proposed school and large number of general residences are built as proposed there will be substantial added vehicle traffic along E Strawberry Drive, and such traffic is not consistent with the intended use or capacity of the road as build today.

- **Shortcut will add even more traffic**. Consider the possibility that North Coast school and resident traffic will use East Strawberry as 'shortcut' to/from the Heron Drive / North Coast Development. The is because the easiest and fastest way to/ from 101S to/from the Seminary Development will be to use Tiburon Blvd Exit to East Strawberry Drive rather than go farther south and use the Seminary Exit off the 101S.
- **Intensity of Use of Road during Peak School Walking Hours.** Consider not just the amount of daily traffic increase, but the increase at specific hours. Given the proposed use of the development (large school and residences) a large percentage of new traffic trips will occur at the same time (7-9 AM, and 2-5 PM) as Strawberry Point Elementary children are walking and biking to and from school along the exact same route on East Strawberry Drive.
- **Reduced Use of Biking and Walking in Area.** Such increase in traffic will reduce usage of biking and walking on this and surrounding 'feeder streets' as it will become a high-risk method of transportation. This will lower value of living in the area

As a resident of Marin and Strawberry, please add these important transportation issues to the EIR for consideration and analysis.

Sincerely,
Alexander L. Johnson

Exhibit 1



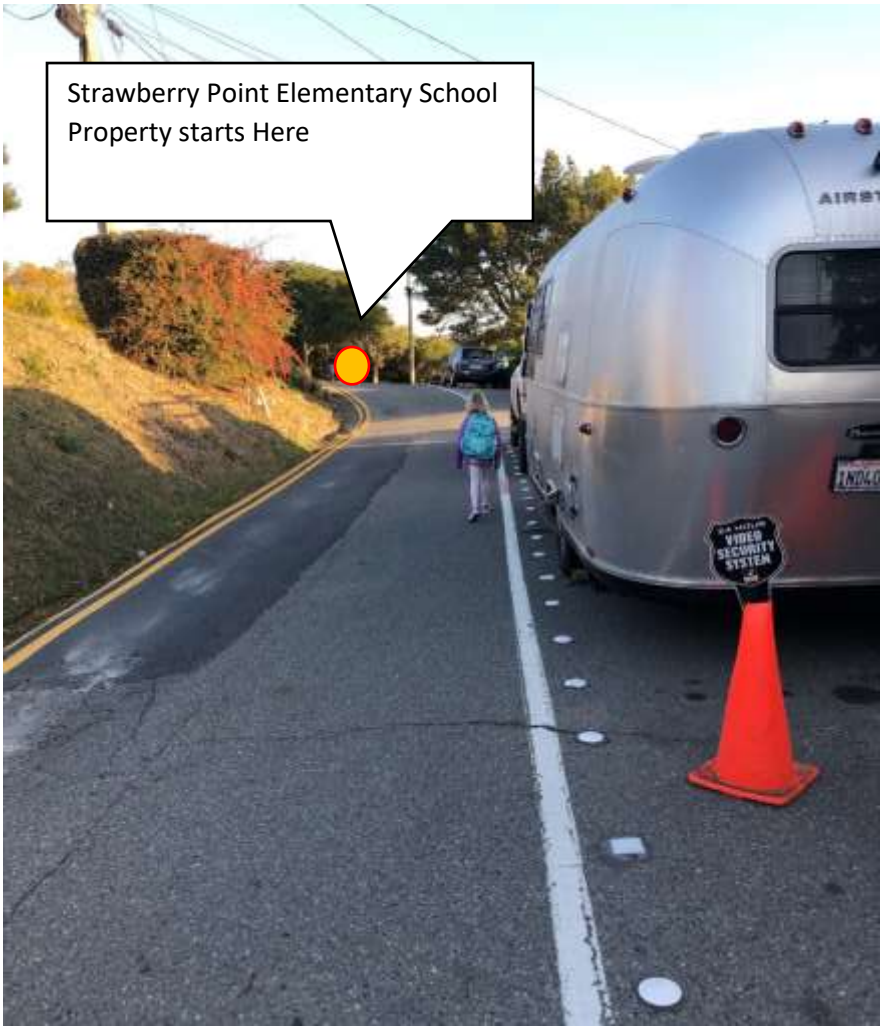
Exhibits 2-6 (All Pictures of East Strawberry Drive in Red Section on Map Above)

East Strawberry Drive

No sidewalks for pedestrians or dedicated bike lanes; walkers, & bikers

More cars would have high negative impact on safely here.

New Car Traffic to /from Heron Drive would use this road.



East Strawberry Drive: Blind Corner with limited sight lines

East Strawberry Drive: Example of typical roadway without roadway separation sidewalks on East Strawberry in this section

Children at Strawberry Point Elementary are encouraged to bike and walk to school as part of Marin County Initiatives.

This is a 'reward stamp' for a child walking to Strawberry Point Elementary by using the route shown earlier in the pictures.

Any increase in child risk of

HABLAS ESPAÑOL

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HOME FIRM OVERVIEW PRACTICE AREAS BLOG TESTIMONIALS CO

OCT 09 2020

Mill Valley, CA: Pedestrian Hit and Injured by Vehicle at Strawberry Drive and Cove Way

1 Sustains Minor Injuries in Mill Valley Pedestrian Accident at Strawberry Drive and Cove Way

Mill Valley, California (October 9, 2020) – The California Highway Patrol is investigating the circumstances that led to a pedestrian accident Thursday morning at an intersection in Mill Valley.

Mill Valley, CA: Pedestrian Hit and Injured by Vehicle at Strawberry Drive and Cove Way

The minor injury crash happened at the intersection of Strawberry Drive and Harbor Cove Way in Mill Valley at about 9:40 a.m.

As per the report, a white Nissan Rogue hit an individual at the Mill Valley intersection in unclear circumstances.

The initial report indicated that there were no footpaths or traffic control at the scene where the crash occurred.

Minor Injury Mill Valley Pedestrian Collision

Free Legal Consultation

FIND OUT IF YOU HAVE A CASE

Name

Phone

Email

How Can We Help You?

SUBMIT

Request A Free Police Report

If you or your family are involved affected by this accident and wou the official Police Report of this incident, Pacific Attorney Group m be able to help. Please click here t request the police report.

Taylor, Tammy

From: Don Newhouse <dnewhouse42@gmail.com>
Sent: Monday, January 11, 2021 12:34 PM
To: EnvPlanning
Subject: North Coast Land Holding Application for GG Baptist Seminary Site

Ladies /Gentleman - I have lived 2 doors from the Seminary for over 36 years. (we live at 303 Reed Blvd almost across from the fire dept.) I CAN NOT believe what NC Land Holding is applying for. It can not be accepted. Over the years we have seen this property go through many changes. With all these changes the the biggest by far is the massive increase of traffic on Reed blvd. This traffic is not limited just to cars and trucks, but also residence with kids walking and riding their bikes. Some also have dogs. To this point, it took me over 2 years to have a long stretch of the curb painted red so "people" could not park there. Even so many do including worker's trucks. The red curbs stretches from the fire house past 300 Reed. My concern was not just with the increase of traffic coming and going into the seminary but MAINLY so the FIRE TRUCKS can get out of their station for their constant emergencies. Even with the new red curbs, It is amazing how often there are issues. So fare so good!!!!!! Trouble is just around the corner. One other point on is issue: not recently I was driving from Strawberry shopping center to my home. Some one passed me going to the seminary!!!!! It blew me away.

I have followed the different possible options for this property. I had a few of the property "tours" from different developers. First of all, I never trusted any of them. I did trust what The Branson School proposed to do. Our son went there and we know the school very well. However even that option would have had SO many issues. We are glad that never worked out. I can not image how this property could have low income housing, a large student body, pre school, fitness center , etc etc.. The impact on the overall environment would be so tragic. The traffic issues would be incredible and should not be allowed. The NC Landing is "blowing smoke". I have had too many dealings with developers over the years. My wife are 76 and not any smarter than other.....we have just had more experience in our life.

You are welcome to call us. My cell is (415) 328-5913 Please do not hesitate.

Respectfully submitted,
Don Newhouse

Sent from my iPad

Taylor, Tammy

From: Reid, Rachel
Sent: Monday, January 25, 2021 11:29 AM
To: Taylor, Tammy
Subject: Fw: Important information regarding the NCLH application for the Seminary
Attachments: Ltr - CUP - 1.25.2021.pdf

Please include with North Coast NOP letters.

From: Riley Hurd <rhurd@rflawllp.com>
Sent: Monday, January 25, 2021 10:47 AM
To: Lai, Thomas <TLai@marincounty.org>
Cc: jsale@tril.com <jsale@tril.com>; PlanningCommission <PlanningCommission@marincounty.org>; Reid, Rachel <rreid@marincounty.org>; Levenson, Michelle <MLevenson@marincounty.org>; Washington, Brian <BWashington@marincounty.org>; Moulton-Peters, Stephanie <smoultonpeters@marincounty.org>
Subject: Important information regarding the NCLH application for the Seminary

Dear Tom and esteemed others,

Attached please find an important letter regarding the seminary property. I understand it is 6-pages long, but I would ask that you pay it special attention.

This letter is not simply a regurgitation of old arguments, it is the result of countless hours of research of old minutes, documents, and the law. We have determined that the now-expired Master Plan for the property superseded the old CUP for the Seminary. What this means is that the applicant needs a new CUP if they want to run a school. This isn't actually that surprising given that the old permit was for a self-contained seminary, but we now have direct proof of this fact.

This also explains why the EIR process has been so cumbersome. The missing details on the school are preventing any type of meaningful review that would inform the County decisionmakers. You can't analyze a project if the data on the biggest part just isn't provided.

Thank you for your attention to this matter, and please consider the letter a comment regarding the EIR NOP, as well as the merits, and include it in the administrative record.

Thank you,

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Riley F. Hurd III
rhurd@rflawllp.com

January 25, 2021

Via E-Mail Only

Thomas Lai
Community Development Department
County of Marin
3501 Civic Center Drive, Room #308
San Rafael, CA 94903

Re: North Coast Land Holdings (P1490) -- New CUP required for educational use

Dear Mr. Lai:

Our office continues to represent the Seminary Neighborhood Association in connection with North Coast Land Holdings' proposal to redevelop the old Seminary site. This letter is regarding a critical missing component of the application currently on file with the County.

Specifically, if NCLH seeks an educational use at the property, a new CUP for that use is required. The 1953 Use Permit allowing a self-contained seminary to operate at the property was superseded by the approval of a 1984 Master Plan for the site. When the Master Plan expired, so did the right to operate an educational use. Accordingly, in order for the current application to be complete, it must also include a request for a Use Permit for a school, and clearly describe the operational characteristics of said school such that there can be meaningful environmental review, as well as an informed consideration of the required CUP findings.

Background

The Golden Gate Baptist Theological Seminary ("GGBTS") bought the Strawberry property in September of 1953. In October of 1953, the GGBTS obtained an initial CUP from the County that allowed for a very specific use: "**a Theological Seminary and dormitories and other building incidental to such use**."

USE PERMIT

Under the provisions of Section 20 of Ord. No. 264, the Zoning Ordinance of the County of Marin, State of California.

A USE PERMIT is hereby granted authorizing Edward D. Landels
(Name of person)
to permit the construction of a Theological Seminary and dormitories and xxx other buildings incidental to such use, subject to the attached con-
(Use of land, building or structure proposed to be conducted) dition.

The record for the CUP indicates that there were specific operational characteristics that were a part of the Seminary's application, and that a single initial condition of approval was also placed on the CUP.

On October 6, 1953, the Planning Director for the County wrote a staff report for the Board of Supervisors in advance of their consideration of the Seminary's Use Permit. This report set forth a set of six "general facts" regarding the application. In summary, the general facts about the application were as follows:

1. The property would be developed as a "self-contained unit."
2. A buffer of "recreational open land" would surround the entire property.
3. There would be approximately 1,000 students, and **all of the students would be housed on-site**. Married students would live in on-site apartments, and single students would live in on-site dorms.
4. The community supported the presence of a post-graduate institution.
5. The community liked that the school would pay its fair share to local service districts.
6. Further review of a development plan for the property would be needed to ensure an appropriate layout of buildings on the site.

The conclusion of the October 6, 1953, staff report noted that the Planning Commission voted to recommend that the Board of Supervisors approve the CUP **"as above set forth,"** on the condition that the Seminary come back to the Commission for approval of a development plan for the property.

The Board of Supervisors then approved the application, **inclusive of its details regarding housing, open space, and enrollment,** and did impose the condition that "prior to any construction or improvement, the applicant shall secure the approval of the Marin County Planning Commission."

After approval of the initial 1953 CUP, GGBTS spent years developing a campus plan and returning to the Planning Commission for what the minutes repeatedly describe as **"Reconsideration of Use Permit."** The record is clear that many conditions beyond the sole original condition were added to the CUP over the years. For example, on July 29, 1957, a hearing was held regarding "**reconsideration of original use permit conditions**." At this hearing, a condition regarding the construction of one of the residences on the Seminary property was amended (i.e. the condition **already existed**, so clearly more conditions were added beyond the first one). The CUP, and its conditions, evolved as the Campus Plan was developed, and new and different conditions were added.

On October 28, 1957, another use permit condition was amended regarding the dedication of West Seminary Drive. Even on April 3, 1958, the Planning Commission was holding a hearing for the GGBTS project labeled "**reconsideration of use permit conditions**." Clearly, the original condition to the CUP that the applicants return to the Planning Commission for approval of their development plan led to a much more robust and evolved set of conditions and an ultimate CUP allowing for the construction of the project.

Why does all of this matter?

Because, in the early 1980's, GGBTS applied for a Master Plan for the entire property in order to allow for more development. The narrative in this Master Plan indicates that, at the time, GGBTS felt it had a vested right in its existing CUP, and therefore a Master Plan was not necessary for further development. However, the Master Plan itself states that **GGBTS ultimately decided not to try and rely on any allegedly remaining vested rights, and instead applied for, and fully participated in, the Master Plan process.** The Master Plan was eventually approved by the County Board of Supervisors in March of 1984.

Condition 19 of the Master Plan stated the following:

> **"With the approval of this Master Plan, the previously approved 1959 Campus Plan Use Permit shall become null and void and of no further effect or benefit."**

The Master Plan is unequivocal that it became the governing entitlement document for the property, and that the CUP, as amended by the many hearings through 1959, was now null and void.

However, when asked about this specific language, we were informed by County staff that the term "1959 Campus Plan Use Permit" was not referring to the use permit for the property, but instead to an approval for a roadway. Only recently have we actually been provided with the document that the County claimed was nullified by the Master Plan, and it simply is not, and cannot be, the referenced "1959 Campus Plan Use Permit."

Instead, what the County provided was a document entitled "**Improvement Agreement** Under Conditional Use Permit." Just as it sounds, this document is an improvement agreement by which the GGBTS agrees to dedicate and bond a roadway, which was a condition of its amended CUP. All throughout the Improvement Agreement there are specific references to the actual use permit that required the improvement agreement. Nearly all of the WHEREAS sections of the Improvement Agreement reference the Use Permit granted to GGBTS, and that the Improvement Agreement is being entered into as a condition of said use permit. Despite further requests, the County has failed/refused to provide the actual ultimate CUP referenced time and again in years of minutes.

It is unclear how or why the County would ever assert that an Improvement Agreement was somehow the document deemed null and void by the Master Plan, when the Master Plan so clearly states it is replacing a 1959 Campus **Use Permit**. Unfortunately/mysteriously, the staff report for the BOS meeting where the Master Plan was approved has gone missing from the County files. There are multiple examples countywide of Master Plans in the 80's replacing Conditional Use Permits from the 50's and 60's. During this era, Master Plans were utilized as site-specific zoning, approving both **uses** and physical development. That's exactly what happened here. If the County is unaware of these examples, we are happy to provide specific references.

GGBTS ended up obtaining quite a windfall from the Master Plan, including a significant amount of market rate housing, which was supposedly going to finance future school infrastructure. Of course, we now know that the market rate housing was built and sold, but the needed campus improvements were never made.

Ultimately, on December 12, 2017, after many extensions, the Master Plan for the Seminary expired. When the Plan expired, the property reverted back to its traditional RMP zoning designation, which, pursuant to Table 2-3 in Code Section 22.10.030, **only allows educational uses with a conditional use permit**. Accordingly, if NCLH seeks to establish a new academic use at the property, a new Master Use Permit is required.

What if the 1953 Use Permit Still Applies?

It doesn't matter, **unless** NCLH is interested in running a self-contained seminary. While CUPs run with the land (unless nullified) -- "Subsequent owners of the land have no greater rights than those of the owner at the time the conditional use permit was issued." A use permit, "is both a grant of authority to use and a limitation on the authorized uses of the property." (*Sports Arenas Properties, Inc. v. City of San Diego* (1985) 40 Cal. 3d. 808, 815.) "Absence of conditions in the use permit does not mean that the permittee may make use of the property permitted neither by the use permit nor by the zoning ordinance without permit." (*Id.*) "A use permit "must be read **in the light of the application for it**, and when that is done, it is apparent that the terms of the permit are clear." (*Id.* at 815-16.)

Here, GGBTS applied for and was granted a CUP for a theological seminary and, pursuant to the cases cited above, the terms of the application as described by the Planning Director's report to the Board are tantamount to "conditions." Setting case law aside, it is clear that the terms of the application describe and control the use being approved. The applicant has stated *as nauseum* that they have a right to an enrollment level of 1,000 students. This number only comes from the project description, not from a particular condition. Specifically, the project description stated:

> "There would be approximately 1,000 students, and **all of the students would be housed on-site**. Married students would live in on-site apartments, and single students would live in on-site dorms."

So, any assertion of a right to 1,000 students cannot ignore the words immediately following that number, which clearly required all students to be housed on site. One cannot cherry pick only the project specifications they desire, while ignoring other specifics that may be limiting.

The difference between the community impacts of a seminary, versus the impacts of other types of schools, cannot be understated. It was these very differences that played a central part in the granting of the CUP in the first place (the self-contained nature of the Seminary carried the day).

Other types of school uses generate significantly more vehicle trips, noise, and other impacts, at a level far greater than the self-contained post-graduate institution contemplated in 1953. So, even if the voided CUP were somehow still valid, it would only allow for a theological seminary with on-campus housing, not any and every "school" type of use.

Conclusion

In order for the current application to be complete, it must include a request for a Use Permit for a school, and clearly describe the operational characteristics of said school such that there can be a meaningful environmental review, as well as an informed consideration of the required CUP findings. The current failure to provide **any information whatsoever** about the new school use, which is central to the property, and most significant in its impact, leaves a gaping hole in the application. It is this total lack of data that caused the Seminary Neighborhood Association to appeal the decision to start an EIR. Despite requests from the Board of Supervisors, and assurances from planning staff, there has yet to be any description of the new school use the applicant seeks to entitle. The County needs to hit pause until this information is provided.

Any entitlement or EIR without a school CUP will be null and void, and subject to legal challenge. Accordingly, it seems best for all involved that the school be described and analyzed.

Thank you.

Very Truly Yours,

Riley F. Hurd III

CC: Seminary Neighborhood Association
Supervisor Moulton-Peters
Marin County Planning Commission
Brian Washington
Michelle Levenson
Rachel Reid

Taylor, Tammy

From: rickharris44@comcast.net
Sent: Tuesday, January 26, 2021 11:51 AM
To: EnvPlanning
Subject: North Coast Land Holdings, LLC Community Plan Amendment, Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal Permit. Project ID: P1490
Attachments: water_supply_systems_capacity.pdf

Ladies/gentlemen:

I am writing as a former MMWD Board member and President to reflect my concern that MMWD does not have the continuously available water supply, critical distribution/transmission infrastructure, nor the pumping capacity to reliably supply potable water to its 61,900 service connections while at the same time being able to deliver the required instantaneous flow for fire suppression. The Paradise fires in 2018 should have taught us that it would not take more than 12 hours for all of Mt. Tamalpais to burn. Unfortunately, major fire suppression has never been a meaningful part of MMWD's demand/capacity analysis.

I have attached a U.S. Fire Administration report entitled "Water Supply Systems and Evaluation Methods" for your review and education. It addresses formulas for calculating appropriate capacity levels. I think you will find that current demand, even in non-drought years, exceeds responsible capacity levels. Building additional demand without substantially increasing water capacity is imprudent.

Please don't hesitate to contact me if you have any questions or require additional clarification.

Sincerely,

Richard L. Harris, Jr.
Cell: 415.730.4072
Email: rickharris44@comcast.net

U.S. Fire Administration

Water Supply Systems and Evaluation Methods

Volume I: Water Supply System Concepts

October 2008

FEMA

U.S. Fire Administration

Mission Statement

We provide National leadership to foster a solid foundation for local fire and emergency services for prevention, preparedness and response.

FEMA

Water Supply Systems and Evaluation Methods

Volume I: Water Supply System Concepts

Harry E. Hickey, Ph.D.

Acknowledgment

This project was performed by the Society of Fire Protection Engineers (SFPE) and was supported by the Department of Homeland Security's Science and Technology Directorate and the U.S. Fire Administration (USFA). SFPE is an engineering association for advancing the science and practice of fire protection engineering. Water supply is an important subject to the fire service, fire protection engineers, and city managers. These manuals are intended to provide a reference for concepts and terminology to facilitate communication and understanding between these organizations.

About the Author

Dr. Harry E. Hickey's career in fire protection spans more than 50 years. He taught Fire Protection Engineering at the University of Maryland for 26 years. He also has extensive experience in the fire services both as a firefighter, fire officer and Emergency Coordinator. His combination of municipal fire administration and fire protection engineering experience provides him with unique insight into the challenges of design and operation of municipal water supplies.

He received his Ph.D. in Public Administration from American University in Washington, DC. He has authored many book and articles including *Public Fire Safety, A Systems Approach*, *Fire Protection Hydraulics*, and two editions of *The Fire Suppression Rating Schedule Handbook*.

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CHAPTER 1: Fundamental Considerations

Water for human consumption comes from one of two basic sources:

1) Water from a well to supply an individual residence, well water for farmstead properties, and well water for small public sector properties that include schools, public buildings, and small commercial enterprises.
2) Municipal water systems that provide potable water to a wide array of commercial property and domestic use buildings including apartments, condominiums, duplex housing, and single family dwellings.

This chapter uses the Washington, DC, Water System as an example in order to introduce concepts associated with a fundamental understanding of water distribution systems. This system was selected because it typifies many of the water systems in the United States that rely on water sources including rivers, lakes, and low-level water retention dams. Other water supply sources are examined under Topic 3 in this chapter.

Understanding the fundamentals of a municipal water supply delivery system is essential to closely examining the many features of a water system and the many options in designing a water delivery system. Chapter 1 provides a basic overview of:

- The Anatomy of a Water System
- The Need for a Continuously Available Water Supply
- Considerations for Establishing Municipal Water Supply Systems
- Classification of Water Supply Sources
- The Classification of Water Supply Systems

TOPIC 1: Anatomy of a Water System

The purpose of municipal water delivery systems is to transport potable water from a water treatment facility to residential consumers, for use as drinking water, water for cooking, water for sanitary conditions, and other water use in a domestic environment. Water supply also is essential for business and industry to operate in a municipal environment. Of no less importance is the need to supply water to properly located fire hydrants to provide the public with an effective level of fire protection. Municipal water systems also may need to provide water for special services that include street cleaning, the selling of water to contractors for erecting buildings, parks and recreation, and miscellaneous uses.

A water system has two primary requirements: First, it needs to deliver **adequate** amounts of water to meet consumer consumption requirements plus needed fire flow requirements. Second, the water system needs to be **reliable**; the required amount of water needs to be available 24 hours a day, 365 days a year.

Anatomy may be defined as "separating or dividing a function into parts for detailed examination." (1) A water supply system is analogous to the human circulatory system. The heart pumps blood through the arteries, veins, and capillaries to supply oxygen to all part of the body. A water pump supplies water through primary, secondary, and distributor water mains to supply water to consumers and for fire protection.

This section examines the functional components of the water system by tracking the water from the sources that feed the municipal water system to the water *tap*. The term *tap* is used in a generic sense to mean any reference point on the water distribution piping where a connection or tap is made to supply a lateral pipe to a domestic connection, a commercial connection, or a lateral line to a fire hydrant.

Washington, DC, has a very old water system that has been updated in many ways. It serves as an excellent example of a basic municipal water supply system. Variations to this system are reviewed later in this manual.

Every municipal water system has to have a water supply source that is both adequate and reliable for the city to be served. The primary water source of water for Washington, DC, is the Potomac River. With minor exceptions due to ice jams and flooding, this water supply has been reliable since before the Civil War. Water is fed to the city from intakes at Great Falls and Little Falls both by a gravity aqueduct and by a more modern pumping station. The aqueduct water serves residents of the District of Columbia, Arlington County, Virginia, and Falls Church, Virginia.

Figure 1-1 illustrates a progressive view of the water system. Two holding reservoirs supply water to a treatment plant that processes the water to remove impurities and adds chemicals to bring the water into compliance with the Environmental Protection Agency (EPA) regulations on *clean water* for drinking and commercial cooking. The actual water treatment process is discussed. The purified water, or *finished water*, then is pumped to several different storage tanks and storage basins around the city for release into the distribution system piping network on demand for consumer use or in the case of a working fire. Depending on the different elevations points throughout the city, additional pumping stations are provided to maintain adequate pressure in the water system during varying periods of consumer use or emergency waster supply demand requirements. Water flows from the storage locations through the primary, secondary, and distributor mains to supply service lines to individual water consumers and lateral lines to supply fire hydrants.

This simplified illustration tracks raw water that originated at the Potomac River through the treatment plant, the storage of water, and the movement of water through different sizes of water mains to service outlets throughout the city to supply consumer demands. At the same time, water in the street mains is maintained at adequate pressure to supply fire department pumpers that may need to take water from fire hydrant to suppress structural fires and handle other emergency situations.

Figure 1-2 illustrates eight basic steps that are used to produce a supply of potable water. These specific steps are associated with the treatment plant for the city of Washington, DC, and fit into the treatment facility portion of **Figure 1-1**. While this is a generally acceptable method of purifying water, it should be recognized that every water supply has its own specific requirements for establishing potability. Chapters 2 and 3 continue the discussion of processing water for consumer use and establishing water quality standards by the EPA.

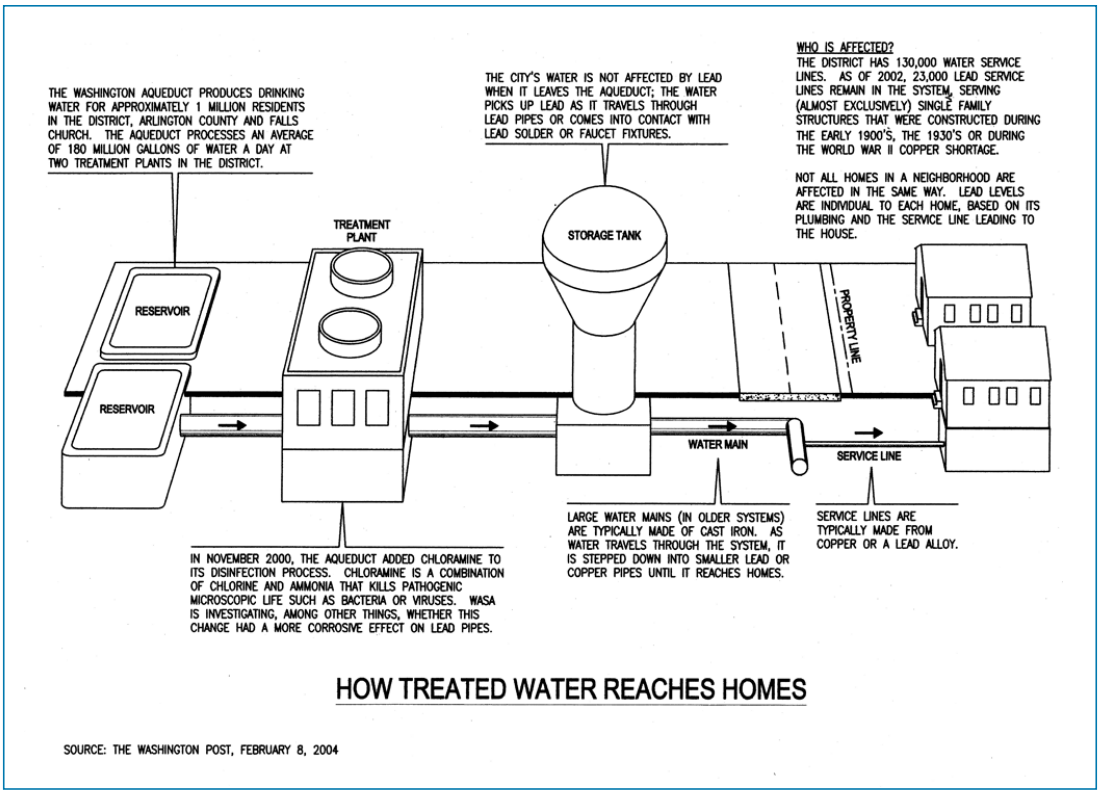

Figure 1-1: Features of a Small Community Water Distribution System

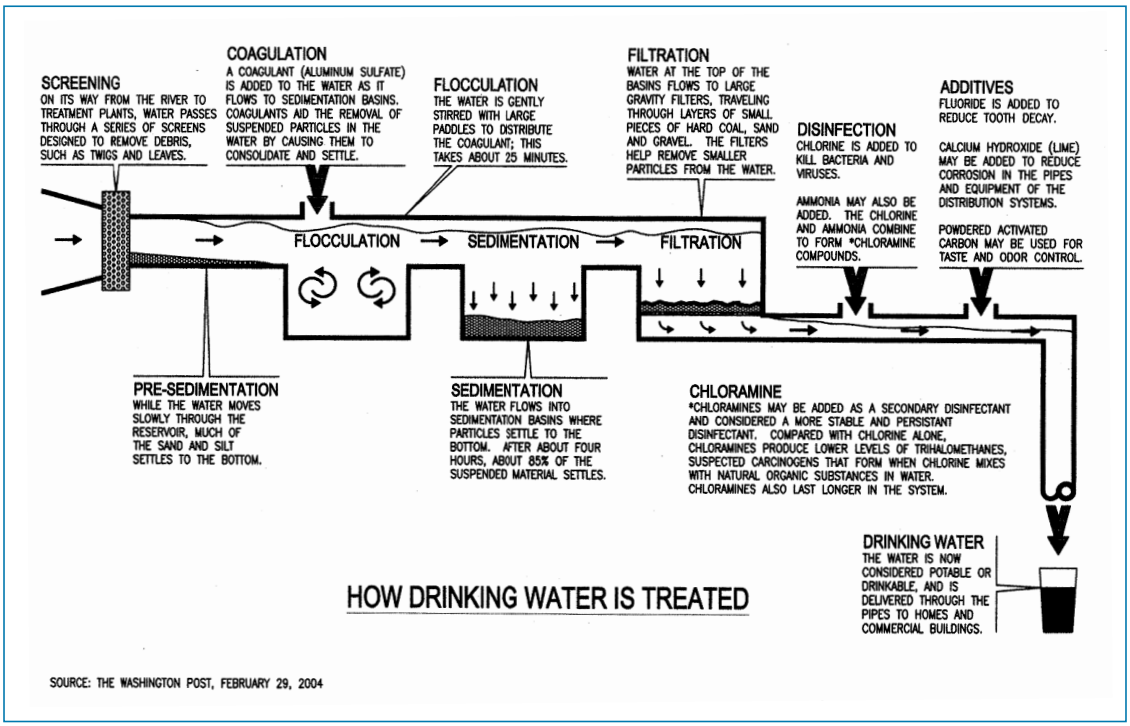

Figure 1-2: Features of a Minimum Size Community Water Distribution System

Step 1: Screening - Water passes through a series of screens designed to remove debris such as twigs, leaves, paper, stones, and other foreign matter. Screens are frequently removed for cleaning or are back-washed from high-pressure pumps to prevent clogging.

Step 2: Presedimentation - While the water moves slowly through each reservoir, much of the sand and silt settles to the bottom. Treatment lines and basins are shut down periodically during times of minimum domestic consumption for cleaning. This applies to the portions of the physical plant described in Steps 2 through 8.

Step 3: Coagulation - A coagulant, aluminum sulfate, is added to the water as it flows to sedimentation basins. Coagulants aid in the removal of suspended particles in the water by causing them to consolidate and settle.

Step 4: Flocculation - The water is gently stirred with large paddles to distribute the coagulant. This takes approximately 25 minutes.

Step 5: Sedimentation - The water flows into sedimentation basins where particles settle to the bottom. After about 4 hours, roughly 85 percent of the suspended material settles out.

Step 6: Filtration - Water at the top of the basins flow to large gravity filters, traveling through layers of small pieces of hard coal, sand, and gravel. The filters help remove smaller particles from the water.

Step 7: Disinfection - This may be accomplished by these methods:

- Chlorine is added to kill bacteria and viruses.
- Ammonia also is added.
- The chlorine and ammonia combine to form chloramines compounds.

Step 8: Additives - Depending on the quality of the water at this point, the following additives may be injected into the water stream to accomplish the stated benefits:

- Fluoride is added to reduce tooth decay.
- Calcium hydroxide is added to reduce corrosion in the pipes and equipment of the distribution system.

After processing, the water is considered potable or suitable for drinking and is delivered through the pipes to homes and businesses throughout the city. However, due to special conditions associated with the District of Columbia Water Delivery System, two other additives have been introduced into the water supply before it enters the water distribution system:

1) Chloramines were added recently as a secondary disinfectant because they were considered to be more stable and persistent compared to the chlorine alone. Chloramines produce lower levels of trihalomethanes, a suspected carcinogen that forms when chlorine mixes with the natural organic substances in water. Chloramines also are favored because the have a longer use expectancy time in the water supply without settling out.
2) The District of Columbia has experienced a severe problem of excessive traces of lead in the finished water from old lead-lined pipes in portions of the city. To counteract this problem, orthophosphates have been added to the drinking water to reduce the lead level. Orthophosphates form a protective coating on pipes to prevent lead from leaching into the water.

There are several different adaptations of the components of water systems in order to provide adequate water pressure throughout the entire water distribution system and to assure an adequate quantity of water to meet domestic consumption needs, fire protection needs, and special-use needs. Different arrangements for supplying municipal water, and the arrangements of water storage in municipal water systems are explored in Chapter 4.

Topic 2: Continuous Availability of Water Supply

A municipal water supply system cannot service its customers unless there is a continuous supply of water to meet domestic consumption needs in the broadest sense and water needs for structural fire protection. Water sources need to be selected carefully to make sure that this fundamental requirement is met. Two main factors that affect water supply selection are

1) Quality of water: Water must be treated or purified to meet Regulatory Requirements established by the EPA (United States Government). The requirements are divided into 2 categories:
   a. residential communities with populations not exceeding 3,000; and
   b. combined residential and commercial communities that serve a population demand over 3,000.

   Water quality standards are covered in Chapter 3.
2) Quantity of water: The quantity of water must be adequate to meet consumer consumption and fire-flow demands at any time of the day, day of week, and week of the year.

Maintaining a continuous or uninterrupted supply of water for municipal demands is a major challenge to many municipalities because of the following conditions:

- droughts;
- growing demands that cannot be met by the treatment plant;
- lack of adequate storage capacity;
- other communities drawing water from the same supply sources such as a lake or a river;
- a major commercial fire or wild land/urban interface fire that exhausts the water supply; and
- undetected underground leakage on the pipe distribution system.

A municipality must recognize that the quantity of available water needs to be such that maximum daily consumption demands are satisfied at all times, even during periods of drought or after years of community growth. The water delivery system needs to expand as the municipality expands.

Design Considerations

In the design and construction of community water systems, economics are extremely important. This dictates that the source of supply should be selected so that little maintenance for the operational factors will be required to furnish an adequate supply of water to the community. Even though surface water supplies such as lakes and rivers, with proper treatments, are by far the more suitable from the standpoint of adequacy, the use of surface water supply systems is confined to municipalities that have a water demand in excess of 75,000 gallons per day domestic consumption to be economically feasible. This translates to a community of about 300 residents with 12 commercial establishments, but with no manufacturing, and the ability to supply a fire flow of 500 gallons per minute (gpm) for 2 hours. This also means that ground water sources are suitable only for quite small communities typically found in more rural areas of the country.

There is an important exception to the above conclusions that ground water sources typically are limited to the very small communities. This assumes that a well site or a few well sites use well pumps to supply water directly into the distribution system after water treatment. Ground water sources can be used to pump water directly into holding basins, small reservoirs, ground-level storage tanks, or even elevated storage tanks where the amount of treated water in storage governs both the population served and the available water supply for fire protection. A southern city, which shall remain nameless, with a population

of approximately 75,000 obtains all its water from well sites and then pumps this water into storage which then supplies the distribution system upon demand. However, the price per thousand gallons of finished water is substantially higher than where surface water is used as a community water supply.

Ground Water

In the original planning of ground water supplies, little can be done about determining the chemical quality of the water because the water will be obtained from several well-defined and different water-bearing geological layers or strata. The chemical or mineral quality of the water contributed from each of these water-bearing formations or *aquifers* will be dependent on the dissolution of material within the formation. Therefore, water withdrawn from any ground water source will be a composite of these individual aquifers. The water quality can be determined by actual sampling and analysis of the completed wells. Local and State health departments, along with State departments of environmental conservation (DECs), will have general and helpful information on water quality within their jurisdiction from years of test data. Most State geologists and hydrologists also will have information on both quantity and quality of water within certain regions of their State. All such information is valuable, and should be obtained when considering ground water sources as either primary or secondary supply sources.

Ground water generally will be considered the most readily available source of water because it can be tapped from below the water table beneath the earth. In contrast, surface waters may not be readily available. In many cases, impounding reservoirs provide adequate water for large communities. The water then must be piped some distance to service the community. The quality of the water also may need to be considered when investigating surface waters because of pollution, which may render available water unusable for potable water supplies, even if complete treatment is provided.

Ground water is an integral part of the hydrological cycle of rain and evaporation of water between the earth's bodies of water and the vast moisture content of the atmosphere. This portion of the water cycle

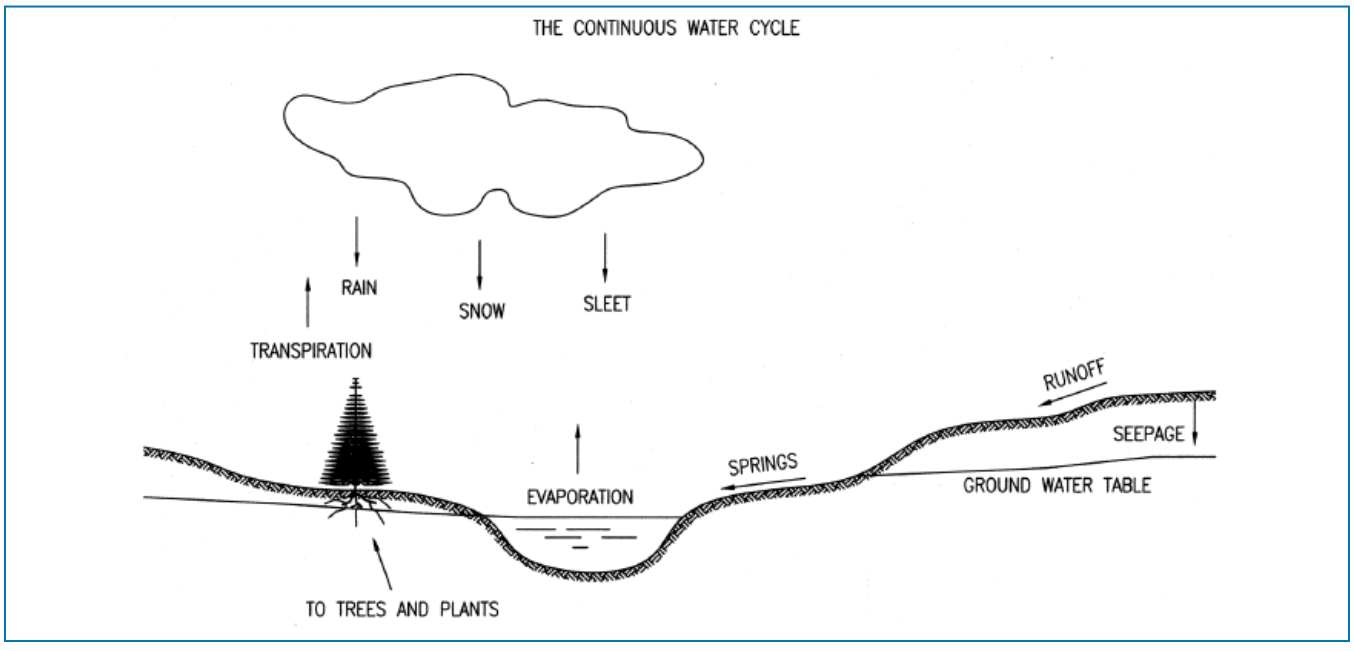

Figure 1-3: Typical Small City Distribution System

is illustrated in **Figure 1-3**. The water content of the atmosphere precipitates from small nuclei and falls to the earth in the form of rain, sleet, and snow. Approximately 70 percent of this precipitation finds its way into the streams, rivers, and finally to the oceans. The remaining 30 percent seeps into the earth and joins the ground water table. Some of this water returns as surface water from springs, flowing wells, etc. Some is used by plants and trees. The remaining portion joins the ground water and appears in layers known as aquifers. The seepage of this water through the earth depends on properties of the soil and rock formations under the earth's surface. Seepage is much greater through porous formations than through the impervious formations. Water seeps at much greater rates through fissures or cracks within the underlying formations. Ground water in the aquifers flows from higher elevations to lower elevations.

In the continuous cycle of water transportation from the earth to the atmosphere, water leaves the earth by evaporation from bodies of water and transpiration from plant life, and returns to the atmosphere where it is retained until again released in the form of rain, sleet, or snow. Replenishment of the ground water table may be accomplished to some extent by the location of ponds and lakes on watersheds. This phenomenon, relating to ponds and lakes, is reversible, as it supplements the ground water table during periods of drought and supplements sustaining flows during the wet season.

TOPIC 3: Municipal Water Supply Considerations

There are two fundamental considerations for both designing and evaluating municipal water supply systems. The first and most important is the quality of the water for human consumption—*drinking water*. The second is the quantity of water required.

In recent years the standards for water quality have been transferred from State health control agencies to the Federal government through two organizations:

1) The United Sates Public Health Service.
2) The EPA.

Water quality is the subject of Chapter 3. Some foundation concepts that relate to the other topic of Chapter 1 will be covered.

The quality of water provided by a municipal water system is based on three distinct characteristics, each of which may independently govern the desirable portability of the water. These characteristics are

1) **Physical quality of water**: The physical quality of water is the *appearance* of the water to the consumer. Physical quality includes the clearness of the water, taste, odor, and temperature. For water to be of attractive physical quality, it must be clear in appearance, or have low turbidity (less than 5.0 units of turbidity). The color of the water must be low in concentration so as not to distract the consumer's attention. Color should be less than 15.0 units of color.

   The water should be free of substances that may produce taste and odors upon the addition of chlorine, or upon use of water for cooking purposes. It also should be free of trouble-producing organisms such as aromatic oils of algae or higher bacteria.

   The temperature of the water will affect the attractiveness to the extent that use by consumers will decrease if the water is of extremely high temperature. Ground water temperatures vary slightly from around 40 to 55 °F (4 to 13 °C). Such temperature changes are dependent upon well depth and aboveground storage facilities. Surface water temperatures vary with seasonal change from around 40 to 80 °F (4 to 27 °C) with even higher temperatures in the deep South and Southwest.

2) **Bacterial quality of water**: The most important quality of water is that of bacteria content. In the early 20th century, disease outbreaks from water and food-borne bacteria were common throughout the world. Progress in bacteriology and water treatment engineering has all but eliminated outbreaks of water-borne communicable diseases in the United States. Chapters 2 and 3 address this issue in detail.

3) **Water chemistry**: Water is an excellent solvent, so it is not surprising that it picks up other chemicals. During this cycle of water movement, water picks up many solid and gaseous components. As the raindrops fall to the earth, they absorb gases. Most gases within the atmosphere are carbon, sulphur, and nitrogen compounds. The raindrops may also pick up particulate materials in the atmosphere. Many of the particulates are soluble in water and will dissolve within the raindrop.

   Other constituents are added to the water cycle from surface or ground water flow. Many and varied constituents are added to the water from dissolution of rocks and minerals which come in contact with the water and its movement. Of particular importance to the water supplier are the following constituents:

   ~ acidity and alkalinity;
   ~ calcium;
   ~ carbon compounds;
   ~ chlorides;
   ~ fluorides;
   ~ iron;
   ~ magnesium;
   ~ manganese;
   ~ nitrogen compounds;
   ~ silica; and
   ~ sulphur compounds.

   All of the above and others dissolved in water, determine the chemical quality of the water. Each of these constituents has threshold limits that are governed by the EPA, as discussed later.

Municipal Water System Demands

The demand for water supplied by a municipal water system has two driving components: 1) consumer consumption: the amount of water in gpm or gallons per day that is used by all of the taps on the water mains to supply single-family homes, multiple-family residences of all types, health care facilities, schools at all levels of education, commercial enterprises, industrial complexes, and adjunct uses (street cleaning; water fountains; watering public grass areas; shrubs, trees, and flowers; parks and recreation including swimming pools; and the sale of water to contractors for building roads, structures, etc.) and 2) an adequate and reliable water supply for fire protection. Each of these topics is considered in length in future chapters. However, some important terms associated with water demand need to be identified and operationally defined at this time because these terms will be used throughout both the *Concepts Manual* and the *Evaluation Manual* on Municipal Water Supply Systems.

Consumer consumption: Consumer consumption is assessed by determining the amount of water that actually is used by consumers, based on three levels of usage as follows:

1) **Average daily consumption (ADC)**: Each municipal water system services a defined population as determined by census figures. For example, assume that the municipality in question has a population of 22,570. It was determined from water meter readings that the average daily consumption was 137 gallons per person per day or the community consumed 22,570 × 137 gallons = 3,092,090 gallons. This means that on an average day, the water supply works need to have available nearly 3.1 million gallons of water over a 24-hour period, or an average delivery rate of 2,147 gpm of finished water delivered into the water supply distribution system.

   An ADC rate of 137 gallons per day per person is just below the 2003 American Water Works Association (AWWA) average of 141 gallons per day per person. The number reflects the total amount of water used in a day by the population and does not consider usage by different classes of occupancy including commerce and industry. AWWA reports this figure varies considerably by State and region. This information will be broken down in detail in Chapter 5.

2) **Maximum Daily Consumption (MDC)**: This value represents the single day within a year-long period on which the consumption rate was the highest. AWWA reports that the MDC rate for any given community is approximately 150 percent of the ADC rate. For the average community in the United States, this would be 221 gallons per day per person. The MDC rate often is reached in the summer months or during times of peak water demand for industrial use. For example, a company in a community of about 14,000 in western New York produces ketchup for a major retailer during the tomato season. In this case, the MDC rate went to 420 gallons per day per person, a rate of 4,083 gpm at the peak delivery time into the distribution system. When the plant was working at full capacity, a rate of only 130 gpm was available in the center of the municipality for fire protection.

3) **Instantaneous flow demand**: There are generally two peak periods in the day when consumption is greatest: between 7 a.m. to 9 a.m. and between 5 p.m. to 7 p.m.

   The water supply superintendent, or a person of equal responsibility, has to predict these rates in order to control the amount of water delivered to the water distribution system and water pressure such that any given tap can supply water at the desired pressure.

Fire flow demand: At any time, the municipal water supply system should be able to deliver needed fire flows to representative fire risks throughout the municipality from properly located fire hydrants.

An adequate amount of water is essential to confining, controlling, and extinguishing hostile fires in structures. The actual amount of water needed differs throughout a municipality, based on different building and occupant conditions. Therefore, water damage for structural fire protection must be determined at a number of different locations throughout a given municipality or fire protection district. These locations are selected by the Insurance Services Office, Inc. (ISO), to represent typical fire risks, including residential, commercial, mercantile, institutional, and industrial properties for insurance rating purposes.

According to the ISO, the minimum creditable water supply is 250 gpm for 2 hours or a total water supply of 30,000 gallons. Most residential occupancies have a minimum water requirement of 500 gpm, and commercial properties can range up to 12,000 gpm for 4 hours. Chapter 6 covers this subject in detail.

Topic 4: Water Sources

Before moving forward with specific details of municipal water systems, we will identify the primary sources of water available for use by municipal water systems and the adequacy and reliability of each. Many municipal water systems use more then one type of water source.

Impounding Reservoirs

Reservoirs created by placing dams across rivers, streams, or at the neck of a valley to capture runoff have been a source of North American municipal water supplies since the mid-1600s. The Grand Coulee Dam on the Columbia River provides water not only to municipal water systems but also to irrigation systems. Reservoir systems are especially common in the northern and northeastern United States. A dam just 200 feet high at the overflow point can create a pressure of nearly 87 pounds per square inch (psi) pressure at the base of the dam. In many cases, this permits the water to flow through the lower portion of the dam to the treatment plant without any pumping requirements.

[Sidebar: Basic concept of hydraulics applied to water supply systems will be covered in *The Manual on Evaluation Municipal Water Supply Systems.*]

In Topic 1, an analogy was made between a water system and the circulatory system of a human being, with the water pump serving as the heart of a municipal water system. In the case of properly designed reservoirs, the head of water creates a pressure to move the water not only through the treatment plant but also through the water distribution system. This concept is illustrated in **Figure 1-1**. Many communities in the United States were supplied with water without pumping stations until after World War II, when increasing demand required the installation of pumps to maintain needed water pressure on the system or to pump water up to grading tanks on the water system that then would supply water by gravity feed to portions of the municipality.

Impounding reservoir systems without a mechanical interface are considered the most reliable and economical source of municipal water supply. More recently constructed water supply systems use this concept through the use of standpipe tanks or gravity tanks on water systems when there is a minimum demand on the system. When there is a higher demand, the water flows by gravity feed from these holding tanks to meet the system demand. Standpipe tanks and gravity tanks will be covered in a subsequent chapter.

Fresh-Water Lakes

The best examples of fresh-water lakes for supplying municipal water come from communities surrounding the Great Lakes, including Chicago, Detroit, Cleveland, Erie, PA, Buffalo, NY, and Rochester, NY. These lakes are supplied by countless streams and rivers that, in turn, are supplied from water runoff from hills, especially during the winter and spring seasons. This is generally considered a functionally, inexhaustible supply of water, provided the intake lines are below the ice formation level, in order to prevent jamming at the inlet ports of the water supply system.

Inland fresh water lakes, such as the Finger Lakes in New York, also supply water to many municipalities. Manmade lakes may be an important solution for coping with increasing water demand.

Without question, rivers across the country provide the most primary sources of water for municipal water systems. The Colorado, the Missouri, the Mississippi, the Ohio, the Tenessee, the Hudson, the Susquehanna, the Potomac; the list could go on and on. However, water shortages are reported on some of these rivers because of the reduction in snowfall and rainfall during periods of the year. Several articles call attention to the radical reduction in the waterway of the Missouri River of late, and the fact that some municipalities have actually run out of water at their intake locations.

Side water damming is one approach to retaining water during dry spells. Other approaches to this problem include cross-connecting rivers and lakes with aqueducts that could be opened on demand to move water from one region to another. There even has been consideration of a transcontinental aqueduct

that could be fed from the North to supply the South, the East, and the West. When desalination becomes economically feasible, this aqueduct could be supplied from both oceans.

Wells

Driven or bored wells are excavated to the level of the water table. Artesian or flow wells are a special classification of wells in which the water is trapped below a rock formation, which causes the water to be under pressure of varying intensity. When a tap is made through the bedrock, the water flows to the surface under pressure. This pressure may be sufficient to move the water to the treatment plant. All other types of well require low-lift or high-lift pumps depending on the depth of the water or the distance of the water from the surface.

Wells are the primary source of water for municipalities with populations up to around 5,000. Larger municipalities may use a series of well fields, and usually pump up to gravity tanks to provide the required flow and pressure to the distribution system. **Figure 1-1** illustrated a basic well site, treatment plant, and elevated storage of the finished water.

In many parts of the country, especially on the east coast, the underground supply of water is not being replenished as quickly as it is being consumed. At the end of 2005, this was a special problem in the States of New York, Pennsylvania, Ohio, Virginia, and Florida. In some cases, water is being transported by tanker trucks to meet the minimum needs for domestic consumption. Alternative water sources such as streams, rivers, ponds, and lakes are the only source of water supplies for mobile tankers to provide fire protection. This subject will be covered in a later chapter.

Oceans and Bays

Until recently, the salinity of the water has made this source unacceptable for human consumption and therefore, not a source for municipal water supplies. New technology is now making desalination cost-effective.

Water systems using ocean and bay water for fire protection have been used on both the east coast and west coast for over a century. Pumping stations provide both low-pressure and high-pressure water supplies to specially marked fire hydrants, primarily in the commercial and industrial districts of large cities like New York, Philadelphia, and San Francisco. Some coastal communities in Florida make use of limited coverage fire protection systems that take water from the Atlantic Ocean or the Gulf of Mexico.

Topic 5: Classification of Water Systems

Civil engineers have developed three classifications for water supplies:

1) **Fresh water**: This implies that the water source comes from either the surface of the earth or from the natural runoff of water through the water cycle discussed in Topic 2. By definition, these waters are not "brackish," are not to be considered "polluted," and have no trace of salt. This category includes only those water supplies that can be treated by standard methods covered in Chapter 3 to meet EPA criteria for human consumption. Availability of fresh water supplies is becoming an ever-increasing problem throughout the United States. What this means to the consumer is that, like almost every other commodity, the unit cost of finished water is rising, more in some areas of the country then in others. Municipalities need to enforce the Federal government's Clean Water Act.

2) **Salt water**: As stated above, salt water traditionally has not been used as a source of water for domestic consumption. However, recent developments in the reverse osmosis and filtering technology allow the elimination of almost all salt content from ocean waters. The military has used this basic technology aboard ships and through special army units since the Vietnam era, but it has not been cost-effective for municipal water systems.

   The latest technology is in evidence in the Tampa Bay, Florida, municipal water system which now satisfies 60 percent of the consumer use needs from a salt water source. This technology has great promise for coastal areas of the country and possibly for transport to interior regions of the country. Cape May, NJ, opened two desalination plants in July 1998. This is certainly the wave of the future for many, many municipal water supply systems.

3) **Reclaimed water**: Sewer water also is required by health regulation to be filtered and treated before it can be discharged into lakes, rivers, and landfills. Once this process has been completed it can be "reclaimed" by going through another treatment plant process for re-entry into a municipal water system. Although technology is available, the cost is unacceptable for most cities. However, scientific work still is progressing in this area.

Chapter 2: Processed Water for Domestic Consumption

Surface Water Sources

Surface water sources are derived directly from stream and river flow, or are stored prior to use, usually from behind high- or low-level dams that form water retention lakes anywhere from a few acres to many square miles in size. Factors such as chemical and bacterial quality greatly influence the economics of water treatment and the physical quality of the water.

Surface water supplies are divided into two distinct classifications, filtered and unfiltered. These classifications are based upon the type of treatment necessary to produce potable water, and upon the quality of such water prior to any required treatment process.

Topic 1: Unfiltered Surface Water Sources

In many instances, a water supply is delivered from a watershed area that is entirely owned or completely controlled by the water company or water authority.

The enforcement of specific rules and regulations is necessary to ensure water quality with an unfiltered water supply. All types of habitation, cultivation, recreation, or other nonwatershed-related use need to be prohibited. In addition, forest fires could create widespread erosion problems, making the water unsuitable unless complete treatment in the form of coagulation and filtration is used. Therefore, a well-planned forestry program including timbering operations, thinning, reforestation, and maintenance of fire lanes throughout the entire watershed area should be inaugurated under the supervision of a trained forester.

All such operational plans should include location and construction of logging roads, repair of equipment, refueling of equipment, and sanitation procedures for workers within the watershed area. Care should be taken so that the discharge of greases, oils, and other fuels is avoided to the fullest extent possible. Sanitation rules involving the disposal of excreta and garbage should be strictly enforced. Central stations, for use by workers, for the disposal of excreta and garbage should be established, preferably below the water works intake. If such stations are located above the intake works, extreme care should be taken in their location and their use should be rigidly enforced.

The entire watershed area should be posted and properly patrolled. The frequency of inspections should depend upon the potential hazard for pollution. If the area is more isolated, the frequency may be monthly; otherwise, constant patrolling should be established. Required water treatment facilities must be adequately supervised on a daily basis or more frequently as deemed necessary!

Treatment of water derived from such a controlled watershed usually consists of coarse screening and continuous chlorination. Preferred treatment would consist of fine screening, pressure sand filtration, pH adjustment, corrosion control, and continuous chlorination.

Watershed sizes and yields will be discussed in the following section, applicable to both unfiltered and filtered supplies.

Topic 2: Filtered Surface Water Sources

Surface water sources requiring complete treatment include those that are not entirely owned, supervised, or controlled by the water company or authority. The water will contain *normal* bacteria content commonly associated to the community life; this excludes gross pollution from sewage, industrial waste, or additives to "spoil" the water. Given these exclusions, proper treatment will render the water potable.

Present EPA bacterial standards indicate that the bacterial load should be less than 5,000 coliforms per 100 milliliters. Present-day loadings indicate that complete treatment of the water, providing coagulation and super-chlorination, will capably treat bacterial loading much greater then this. Water from human-inhabited environments generally will contain high turbidity and possibly some taste- and odor-producing substances.

The final decision in the selection of a source of water for a surface supply should balance consideration of both water quality and water quantity. Water quality includes such factors as bacteria, suitability for treatment, taste- and odor-producing substances, and the effect of further land use along the tributary streams from which the water is to be taken. The source should be adequate for many years into the future, taking into account expected community growth.

In the balance of quality and quantity of water sources, it is desirable to use the largest watershed or resource possible. However, this is not possible in many cases because of the existing pollution of such a source. Therefore, to reach this balance, smaller watershed areas are developed by means of raw water impoundments, often with low-level dams, thereby meeting the requirements of an average water quality with a better-than-average water yield.

The pollution problem of large water sources is becoming more apparent. These larger bodies of water are more suitable for receiving sewage and industrial waste because of dilution and oxygen assimilating capacity. From the polytonal standpoint, the water quality of smaller lakes, rivers, and streams probably will be the most suitable for municipal water supplies in the future.

There are several methods of evaluating the yield of a watershed, storage requirements:

- The MASS Diagram allows the use of past records of rainfall and runoff, gauging station measurements of stream runoff. On the MASS Diagram, the accumulated stream measurement is plotted versus time. On the same diagram, the maximum daily draft is plotted in the same manner (as accumulated values). The required amount of storage is equivalent to the largest depression or dip within the curve, plotted from runoff and as measured down from a parallel of draft.
- Applying storage requirement information from other water management system companies within the same catchment basin. Such information should include a draft, yield of watershed per square mile, and adequacy of present storage, with figures indicating draw-down of these facilities during extended drought periods.

- With knowledge of average yield of a watershed, the maximum daily draft of the community supply provides a reservoir with storage of 180 days' capacity with additional capacity for silting and evaporation.

Using a simplified method with a combination of the above methods, along with accepted practice and experience, it is possible to derive certain simplified equations that will provide reliable information concerning watershed yield, maximum daily draft, and the required storage for known watershed areas and predesignated drafts. These drafts may be stated as follows:

From un-impounded streams or rivers where the water is taken directed from the flowing water, by means of a small diversion dam, the draft will depend directly upon the minimum stream flow.

Experience over the years has indicated that the *minimum* dependable yields for watershed areas will be approximately within the values in **Table 2-1**.

Table 2-1

Average Annual Rainfall: Inches per Year	Minimum Dependable Yield: MGD per Square Mile*
30	0.0055
32	0.0062
34	0.0075
36	0.0088
40	0.012
42	0.014
44	0.016
46	0.020
48	0.023
50	0.026
52	0.030
54	0.035
56	0.040
58	0.048
60	0.056

*MGD = Million Gallons per Day

Dependable draft rate (DD) can be calculated based on watershed area and yield. The water system should be designed so the water source will be dependable for a long period of time. If the area of the watershed is 27 square miles (and the annual rainfall is 46 inches per year), what would be the dependable draft available from the retention area of the watershed?

$$\underset{\text{(MGD)}}{\text{Dependable Draft (DD)}} = \underset{\text{(Square Miles)}}{\text{Area of Watershed } (W_i)} \times \underset{\text{(MGD) per Square Miles Table 2.1}}{\text{Minimum Yield of Watershed (Y)}}$$

A simplified formula can be used for the determination of the amount of storage required to supply certain daily requirements from a known watershed area. This formula relates back to the previous operation for minimum dependable yield of watershed areas based on average rainfall data. An impoundment should not be expected to yield an average daily amount greater than 25 times the

minimum dependable yield of the watershed area. The following simplified formula is applied to relate draft and watershed to area reservoir volume.

Volume of Storage Required in Million Gallons* = Draft in MGD − Minimum Dependable Yield (MGD) per Square Mile × Area of Watershed In Square Miles

$$V_r = 4.68 \times (24 - 0.02 \times 72)^2$$

$$= 2{,}370 \text{ Million Gallons}$$

It is possible to calculate the maximum actual draft for an existing reservoir using the same equation, if the volume of storage, the minimum dependable yield of the watershed, and the watershed area are known.

$$DACT = DD + (0.214V_r)^{1/2}$$

or

$$DACT = (W_s \times Y) + (0.214V_r)^{1/2}$$

V_r = Reservoir Volume

DACT = Actual Draft

DD = Dependable Draft = $W_s \times Y$

For example, given the area of the watershed as 75 square miles and an average rainfall of 46 inches per year, the amount of storage can be calculated using the above equation with the values from **Table 2-1**.

TOPIC 3: Water Treatment Plants

The treatment facilities for surface water sources are more complex than ground water treatment facilities in both design and operational standpoints, because of the lower quality of the raw water to be treated. Such treatment facilities generally include the following components:

1) **Intake works:** The intake works are structures that are used to divert and lift the water from a stream or impoundment to the treatment works. Intake structures may be concrete in the form of towers with multiple ports located at different elevations, or a crib weighted down within a stream channel. When intakes are located in stream channels, it is important to protect them from floodwaters or damage from floating debris. If possible, the intake structure should be located in the quiescent portion of a stream rather than the highly turbulent portion. The location and design of the structure will minimize the entrance of sand, silt, fish, and debris. Rough or course screening is necessary, and openings should be provided with bars spaced from 1 to 3 inches apart, with the area of the openings restricting the entrance velocity to less than 20 feet per minute. If a diversion dam is used within the stream channel, provisions should be made for the removal of silt and sediment from behind the dam.

   All raw water pumping facilities should be provided in duplicate. Standby or auxiliary gasoline- or diesel-driven pumps also should be provided for large installations. For proper maintenance of equipment, all-weather roads should serve all installations easily.

   The intake structure for raw water impoundment should be located within the deeper portions of the reservoir. Inlets for the intake structure should be located at various levels, depending on the mean and low water level and depth of the water at this location. Surface water is subject to algae growths,

whereas the lower waters carry organic matter, silt, and high concentrations of iron, manganese, and sulphide. Course screening or gratings should be provided and designed as mentioned to satisfy stream intakes.

All piping or tunnels for intake structures should be designed for water velocities of 2 to 4 feet per second in order to be self-cleaning. Fine screens are desirable for the protection of water pumps from grit and other debris.

2) **Raw water impoundments:** The capacity of the raw water reservoir should be calculated in accordance with the material presented previously. Certain basic requirements need to be followed concerning the preparation of the reservoir:

   a) An adequate amount of land should be purchased in addition to that acquired for the water area so that proper controls may be put into place regarding the prevention of pollution from use of the land along the water's edge. The additional strip of land should be measured from the high water margin of the reservoir. It will also be used for patrol and reservoir maintenance programs.

   b) An area of 2 feet above the high water margin and 5 feet below the mean level of the reservoir should be cleared and grubbed of all growth. This will prevent the creation of an environment for breeding insects.

   c) The entire area below the 5 foot level from mean water elevation should be cleared and grubbed of all growth. It may be desirable to cut off stumps of 6" and larger at ground level. All such material should be burned or removed from the reservoir area to prevent the presence of organic decay, which leads to taste and odor problems. Care should be taken in the planning of the clearing and grubbing program for large reservoirs. The long period of time involved in construction of the dam, spillway, and intake structure will provide ample time for the vegetation to regrow, necessitating clearing and grubbing the reservoir a second time.

   d) Of extreme importance is the preparation of the areas where the tributary streams enter the reservoir, as these areas usually will be somewhat swampy. Therefore, islands should be constructed to give deeper water areas **or** the material dredged entirely from the reservoir. In many cases, small impoundments are constructed within these areas so that it is possible to control the breeding of mosquitoes by fluctuation of the water level within the small impoundment. The small impoundment must be constructed with the toe of the dam within the larger reservoir in order to prevent the creation of a shallow water area. It will also serve a secondary purpose in that not only will it provide some additional storage, but it also will act as a settling basin for incoming silt from the watershed area.

   e) Raw water pipelines: All pipes or tunnels used for intake conduits should be designed for water velocities of from 2 to 4 feet per second in order to be self- cleaning. An adequate number of blowoff valves and air relief valves should be provided along all pipelines for maintenance purposes.

3) **Water treatment plants:** The water treatment plant provides chemical treatment in the form of coagulation of suspended solids, screening or filtering, corrosion control, and chlorination. These processes result in high quality, potable water. The principle of operation is that the water enters the plant; chemicals are added; mixing, sedimentation, and filtration follow; then final adjustment of the water is provided for corrosion control and disinfection. Details of design of these appurtenances are as follows:

Mixing process: One of the most important processes in water treatment is the mixing process whereby the added chemicals are mixed in proper proportion to the incoming water, thus causing precipitation. Mixing may be done by hydraulics or by mechanical equipment:

a) **Baffle mixing:** Acceptable practice for a baffle mixing basin, either around-the-end or over-and-under, is that a velocity of 1.5 feet per second be maintained for the first third of the basin, a velocity of 1.75 feet per second through the last third. In many cases, a flash mechanical mixer at the entrance of the baffled basin will assist in the coagulation process. The flash mixer should have a shaft speed of 350 to 750 revolutions per minute (rpm) and the time of the mix should be from 1 to 5 minutes.

b) **Mechanical mixing:** Mixing should be adequate to disperse the chemicals thoroughly in the raw water prior to its entrance into the flocculation basin. If the mix is done by high-velocity mixers, such as by pump or turbine-type mixer, the velocity should be 5 feet per second or greater, and the retention time should be 1 minute, more or less. If a flash mixer is used, it should be as discussed above under baffle mixing. Paddle-type mixers equipped with variable speed regulators should provide a peripheral speed of 1 to 3 feet per second and a retention time of not less than 5 minutes.

   Air mixing devices provide benefits in addition to agitation or mixing of the chemicals. Air being blown through the basin provides this additional treatment in the removal of taste and odors from the water. It also provides oxidation of iron and manganese to aid in their removal. Air mixing units should be designed to provide three stages of agitation: violent, intermediate, and quiescent. The requirement of the air supply is at least 0.5 cubic feet or air per square foot of tank area or 0.05 to 0.20 cubic feet of air per gallon of water. The time of aeration contact of the water should be from 10 to 30 minutes. Air mixing devices may be used in conjunction with either baffle or mechanical mixers.

   The final step of mechanical mixing is that of mechanical flocculation, that is, the slow agitation of the fine flox to hold it in suspension so that the size may build up before the sedimentation process. Mechanical flocculators should be of variable speed, with the peripheral speed of the paddles being from 0.5 to 2.0 feet per second. The basin should be sized to provide a retention period of from 20 to 40 minutes.

All conduits carrying coagulated water to the sedimentation basin should be designed to provide a velocity of 0.5 to 1.0 feet per second. Less than 0.3 feet per second, the floc will settle, while at greater than 1.0 feet per second, it will be broken up. Therefore, the 0.5 feet per second is considered the optimum velocity for coagulated water.

4) **Sedimentation basin:** The sedimentation basin is provided for the removal of the floc from the coagulation process. In a well-operated plant, the majority of the purification process takes place in this coagulation process. Therefore, the design of this basin is of importance. The sedimentation basin consists of a diffusion wall and the basin itself. The diffusion wall acts to diffuse the floc over the entire width of the basin. It should be located from 5 to 10 feet from the end of the basin. The size and number of the slots within the wall should be based on a velocity of 0.4 to 0.8 feet per second through the slots and to provide uniform distribution and velocity across the basin. The diffusion wall may be omitted, provided that other methods are used to give this uniformity of distribution.

   The sedimentation basin should provide a theoretical detention period of at least four hours. The velocity of flow through the basin should be from 0.3 to a maximum of 1.0 feet per minute. The

length-to-width ratio of the basin should be from 2 to 1 to a maximum of 3 to 1. The depth of the basin should be from 10 to 16 feet.

The bottom of the basin should be sloped to a drain sized to empty the basin within a period of 4 hours. An independent overflow should be provided for each basin. The outlet device for settling tanks should be either of the submerged weir-type or large openings to prevent high velocities.

5) **Solids contact or up-flow units:** In fairly recent years, the solids contact or up- flow unit has come into use. This compact unit provides chemical mixing and sedimentation where the settled floc is recirculated to mix with the newly formed floc, thus providing a heavy floc for settling. This type of unit also provides for continuous sludge removal by an automatic timing device. Even though these units have been used in the water softening processes for many years, their application to clarification of turbid waters for community systems requires care in design and operation.

   The maximum rise rate of the clarification of water should be in the range of 1.00 to 1.25 gpm per square foot of clarification area. In certain instances where the quality of raw water contains a high concentration of hardness, the rise rate may be increased to 2.25, but in doing so considerable study should be made of the year-round water quality.

   The detention period for this type of treatment unit should not be less than 2 hours, with a mixing and flocculating zone averaging not less than 35 minutes. At the greater rise rates, the detention period may be lowered accordingly, but not less than 1 hour. The mixing device should be a variable speed type agitator with a ratio of 2 to 1, and should be designed so that there will be no dead space in the bottom zone of mixing. Sludge removal from the unit should be somewhat continuous, with the sludge removal mechanism controlled by an adjustable automatic timer. The effluent weir of the unit should provide for uniform collection of the clarification area at a lead not to exceed 7 gpm per foot of weir length.

6) **Rapid gravity sand filters:** Sand filters provide the final treatment for the removal of suspended matter for the water. Filtration as a treatment process provides greatest efficiency when a layer of floc creates a mat on the sand surface to filter through. Sand filters are designed on the basis of filtration and backwash rate. The filtration rate is established at 2 gpm per square foot of filter area. In certain instances, this rate may be increased to 3 gpm per square foot of filter area, in which case the plant design and operation must be extremely good that the backwash water rate is established at 24 inches rise per minute. This will give a flow of 15 gpm per square foot of filter area. When Anthrafilt is used, the backwash rate should be around 18 inches rise per minute. To meet these two flow conditions, the filter underdrain and other controls must be designed properly.

   For proper operation of a filter, proper controls and gauges must be installed on the filter. These include rate-of-flow controller, loss of head gauges, rate of flow gauges, and wash water rate gauges. Filter bottoms must be adequate to provide filtration and backwash water flows. Bottoms may be either cast-iron manifolds, concrete cast-in-place, or precast plates or blocks. Surface agitator or sweeps are very desirable for proper cleaning of the filter media during the washing cycle.

   Filter sand should be of the following specifications:

   - Effective size: 0.35 to 0.55 millimeters;
   - Uniformity coefficient: 1.70 or less;
   - Dust content: Less than 0.5 percent; and
   - Depth of sand: 24 to 30 inches.

If Anthrafilt is used, the following specifications apply:

- Effective size: 0.65 to 0.75 millimeters;
- Uniformity coefficient: 1.7 or less; and
- Water wash rate: should be adjusted to give 18-inch rise per minute.

Supporting gravel for the filter media should consist of:

- First 3-inch layer of 5/8- to 1-inch size stone;
- Second 3-inch layer of 3/8- to 5/8-inch size stone;
- Third 3-inch layer of 3/16- to 3/8-inch size stone; and
- Fourth 3-inch layer of number 10 to 3/16-inch stone or Torpedo sand.

To provide for proper expansion of the filter media curing the washing cycle, the minimum distance from the top of the wash through to the top of media should be at least 27 inches. Wash water troughs to the top of the media should be at least 27 inches, and should be of dimensions adequate to carry the maximum wash water rate. The spacing of such troughs should not be greater than 5 to 7 feet.

7) **Chemical feed equipment:** Chemical feed equipment should be of dependable make and accuracy to provide correct dosages. They should be sufficient in number so that split dosage is unnecessary for any one machine except the chlorinator, which is best operated from a panel and has several points of application. Dry chemical feeders should have capacities ranging from 50 to 100 pounds per million gallons of water treated. The upper limit should be provided for the coagulant feed machines.

   Chlorinators and chlorine cylinders should be kept in separate rooms from the other feeders for safety reasons. Leakage of chlorine gas will react with dampened metal surfaces to cause corrosion. The chlorinator room should be provided with an exhaust fan located approximately 6 inches above the floor and with a capacity sufficient for two complete air changes per minute. The fan control should be located outside the chlorinator room. A gas mask also should be stored outside the room.

   When fluoride compounds are added to the water, the storage of the fluoride chemicals should be kept separate from other chemical storage so as to eliminate the danger of mixing this chemical with other water treatment chemicals.

Topic 4: Auxiliary Facilities for Surface Water Treatment

Additional auxiliary facilities are required as part of the water plant:

1) Laboratory: The laboratory for proper operation and control should be equipped adequately for daily bacterial and chemical analysis of water quality.

2) Chemical storage: Storage areas for treatment of chemicals, should be ample to store at least a month's supply of chemicals. It is preferable to have several months of storage area so that the chemicals may be bought in bulk quantity. All chemical storage areas should be located in the driest portion of the plant to prevent moisture difficulties.

3) Finished water storage: This essentially involves clear wells and clear well storage. The basins or reservoirs used for storage of finished water should provide at least 10 to 12 hours of storage based on the maximum consumption expected during that period of time. Together with elevated storage, the total storage should be 1 day's supply, but not less than 75,000 gallons. The clear wells should be constructed of concrete or fabricated of steel. These reservoirs or basins should be covered, and have

watertight access manholes. This should be well-ventilated and contain adequate overflow pipes and drains. All such outlets or openings should be screened with at least a 16-mesh screening. The inlets should be arranged so circulation of water is provided.

4) **Finished water pumping:** Finished water pumping facilities should consist of redundant pumping units. A generator driven by a gasoline or diesel engine should be available as auxiliary power for the plant and pump operation in case of outside utility power failure. For larger installations, pumps should vary in number and capacity from 100 percent to 150 percent to 250 percent of plant capacity.

Topic 5: Ground Subsurface Water Sources

Ground water sources or wells usually are characterized by water quality that has a pH from 6.8 to 7.4 (a low concentration of iron, which varies from 0.1 to approximately 1.0 parts per million), and, in some areas, by the presence of hydrogen sulphide. With the low pH, the carbon dioxide concentration increases to create corrosion problems. The range of carbon dioxide extent from about 3 to 5 parts per million at a pH of 7.4 to about 20 to 25 parts per million at a pH of 6.0. With the corrosion problem and the presence of iron and possibly hydrogen sulphide in ground water, the use of certain treatment is sometimes a must with ground water supplies. Treatment facilities involving the removal or prevention of such trouble will be discussed below.

1) Aeration: Aeration provides for the exchange of gases so that either removal or oxidation of matter will take place in the exchange interface of water and air. Aerator are used to eliminate carbon dioxide from the water, release hydrogen sulphide, aid in the decomposition of organic matter, control taste and odors, and in the oxidation of iron and manganese for removal of these troublesome compounds. Aerators are usually of the gravity type in which the water is discharged through nozzles into the air and allowed to trickle over cascades or perforated plates or trays with or without special type of media. Other types of aeration processes use the blowing of air through the water media.

Aerators should be designed so that adequate exposre time and contact may be had. It has been found that coke trays and spray fountains provide around 75 percent removal of carbon dioxide. Hydrogen sulphide is loosely held and is easily eliminated through the gaseous phase exchange of aerators.

2) Pressure filters: Pressure filters using sand and gravel have been used in the field of water treatment and swimming pools for many years. This use in the treatment of ground water supplies is also common. Pressure filters using sand and gravel, crushed pyrolusite ore (natural manganese oxide), or ion-exchange resins are in common use in water treatment. When used with aerators and sedimentation basins, they are effective in the removal of iron and manganese, or in conjunction with chemical treatment for the removal of excess hardness from water.

For removal of iron and manganese, pretreatment in the form of aeration and ph adjustment to above 7.0 is required prior to sedimentation, which is followed by filtration. In this process, the iron and manganese are oxidized by aeration to form a precipitate, which is settled; the filter in this case is used to remove the fine suspended matter that remains in suspension. The oxidation of the iron and manganese takes place as the water flows over the contact media of coke located on trays within the aerator.

A filter that has been pretreated with sodium permanganate is used to retain the oxidized iron and manganese. Such beds must be cleaned and regenerated by the use of sodium permanganate.

Pressure filters should be designed with proper piping for backwater, waste times, loss of head gauges, and sight glass indicators. Pressure filters operate at pressures of 20 to 45 pounds per square inch.

Pressure filters may be used in the softening process of water in conjunction with either solid contact units or conventional coagulation treatment units using the lime-soda chemical precipitation process. In such cases, filters must be employed to provide for the removal of suspended matter from the water.

Special types of units using filter boxes with zeolites, in place of filter media, are used for the softening of water. In the ion-exchange process, the ions of magnesium and calcium, components of hardness in water, are exchanged within the ion-exchange resins of sodium ion. In other words, the ions that which cause hardness in water are removed and an ion, which does not possess hardness characteristics, is placed into solution in their place. When the resins become saturated with calcium and magnesium ions, it is then necessary to regenerate the resins by use of salt brines to remove the calcium.

3) **Corrosion control and chlorination:** Other equipment commonly used in the treatment of ground waste supplies, deals with the problem of corrosion control, the pump and distribution system, and the application of chlorination and fluorides to the water in proper dosage. The dosages of these materials are relatively small; therefore, in most cases, they are applied in solution form. All such solution feeders should be of dependable make and of a capacity to provide chemical dosages up to some 10 parts per million, considering the percent of solution strength available and the discharge rate of the source.

Summary Statement

In many instances, it is desirable to use more than one of the surface or ground water sources described in this chapter for a given community water system. The overall design would be based on the development of the individual sources in accordance with what has been discussed previously.

References:

1. Ameen, Joseph S., S.M. Sanitary Engineer. *Community Water Systems. A Source Book*. 5th ed. High Point: Technical Proceedings, 1997.
2. Mays, Larry W. *Water Systems Distribution Systems Handbook*. Department of Environmental and Civil Engineering, Arizona State University. New York: McGraw-Hill, 2000. Endorsed by the American Water Works Association.

CHAPTER 3: Water Quality Standards: A General Perspective on Water Quality

The objective of a community water distribution system that provides drinking water is to deliver sufficient quantities of water where and when it is needed at an acceptable level of quality (the desired chemical and physical characteristics of the water). For the water to be high quality, it must first be free of all harmful bacteria or the index organisms (which will indicate that pathogenic bacteria may find their way into the water supply). (2)

Next, the water must be free of objectionable taste and odors that may be caused by either undesirable chemicals or organisms. It follows that drinking water must be low in concentrations of troublesome minerals, such as iron, sulphur, manganese, calcium, magnesium, and other agents that will make the water unsuitable for use by excessive discoloration or hardness, or nonpotable from the standpoint of high chemical content. Finally, the water must be noncorrosive so that it will not react with plumbing fixtures or pipelines to cause failure of such lines, necessitating frequent replacement, or cause the staining of plumbing fixtures.

The quantity of available supply must be such that the maximum daily demands of the community are satisfied at all times, even during extended periods of drought or after years of community growth. The water supply for most communities not only needs to meet consumer demand but it needs to meet needed fire-flow demand where fire hydrants are installed for the protection of built areas of the community. The same water that supplies domestic taps also supplies fire hydrants, unless there is a separate water system for fire protection.

Although water quality may be acceptable when the water leaves a community treatment plant, transformations can occur as water travels through a distribution system. In the past, water distribution systems were designed and operated mainly on the basis of hydraulic reliability and economics, with little attention paid to the water quality in the distribution system, except when serious problems arose from citizen complaints. This attitude has changed significantly as community water suppliers realize the important influence that time spent in a water distribution system, referenced as resident time, can have on water quality, health concerns, and the conditions of underground water mains.

This chapter is about current water quality standards in the United States including the Safe Drinking Water Act of 2004, factors leading to water quality deterioration in distribution systems, The EPA criteria for "safe" water, and the recognition that there will be a continued "tightening on water quality standards" in the future. All of this is going to require communities to have the methods for monitoring water quality conditions and techniques for modeling water quality transport and transformation. (1)

Factors Leading to Water Quality Deterioration

Water storage facilities, after-water treatment, and the pipe network in a community that transports water from the water storage location(s) to supply point of consumption, constitutes a complex network of entrapped water where uncontrolled chemical and biological reactors can produce significant variations in water quality in both time and space. The primary factors of water quality deterioration in distribution systems include the following:

- contamination via cross-connections or from leaky pipe joints;
- corrosion of iron pipes and dissolution of lead and copper from pipe walls and joints;
- loss of disinfectant residual in storage facilities with long resident time (this can also occur from long resident time in water mains where the flow velocity is inadequate to keep all of the water moving);
- bacterial regrowth and harboring of opportunistic pathogens;
- supply sources going online and offline;
- reactions of disinfectants with organic and inorganic compounds resulting in taste and odor problems;
- increased turbidity caused by particulate resuspension; and
- new formation of disinfection byproducts, some of which could be suspected carcinogens.

The driving factors affecting water quality in a distribution system:

- the quality of the treated water fed to the system;
- the material and condition of the water pipes, distribution system valves, and storage facilities that make up the water system; and
- the amount of time water is retained in the system.

With reference to the last item, it is most important to understand that on a looped pipe network system, the water reaching any particular consumer is actually a blend of water parcels that may originate from different sources at different points in time and follow different flow paths. (See Chapter 4—Topic 5: Designing and Reinforcing Municipal Water Supply Systems Using Looped Water Mains.)

Looped water mains can have an enormous influence on the relation between residence time and water quality. Actions that can be taken to improve water quality or prevent its deterioration in the distribution system include

- changes in treatment practices;
- pipe repair;
- periodic flushing of the water system through fire hydrants;
- relining or replacing pipes; and
- modifications to the water supply operation by circulating water in storage.

Finding an optimal combination of these actions can involve trade-offs between cost, hydraulic reliability, and risk impaired water quality. The issue of water quality for a given community will be referenced in future chapters.

Definitions

The terminology associated with water systems is very specialized and extensive. Throughout all of this text, care is taken to define terms. Important terms frequently used pertaining to water quality issues in water distribution systems are defined below. (2)

Advective Transport: The movement of water quality constituents at the same mean velocity and direction as the bulk carrier fluid.

Aerobic Zone: An area where dissolved oxygen is present.

Alkalinity: Ability of water to neutralize changes in pH.

Anaerobic Zone: An area devoid of dissolved oxygen.

Biofilm: A consortium of microorganisms attached to a solid surface along with a surrounding slimy matrix of extra cellular organic polymers.

Bulk Reactions: Reactions that take place within the volume of water not in contact with the wall of a pipe.

Coliform Bacteria: A group of bacteria associated with the intestinal tract of warm-blooded animals as well as vegetable matter and soil, the presence of which is considered to be an indirect indication of possible fecal contamination.

Disinfection Byproducts: Products of the reaction between a water disinfectant (such as chlorine or ozone) and naturally occurring organic matter in water, some of which are suspected human carcinogens.

Dispersive Transport: Movement of a water-quality constituent caused by concentration gradients.

Euclerian Approach: A modeling framework that assumes a fixed frame of reference when developing conservation of mass, momentum, and energy flow for a fluid control volume.

First-order Reaction: A chemical reaction where the rate of growth or decay of a constituent is proportional to its concentration.

Heterotropic Bacteria: The class of single-cell microorganisms that require organic carbon from both respiration and cell synthesis.

Lagrangain Approach: Modeling framework that assumes a moving frame of reference when developing conservation of mass, momentum, and energy flow for a fluid control volume.

Opportunistic Pathogens: Organisms that may exist as part of the normal body croflora but under certain conditions cause disease in compromised hosts, such as in the elderly, newborns, victims of Acquired Immunodeficiency Syndrom (AIDS), and cancer patients receiving chemotherapy.

Pipe Wall Reactions: Reactions occurring between water quality constituents and materials originating from the wall of a pipe, such as released iron or biofilm slime.

Standpipe: A ground level storage tank whose height is greater than its width.

Tracer Chemical: A nonreactive chemical whose presence is used to track the flow path and travel time of water originating from a particular point of addition.

Topological Sort: A renumbering of the nodes in a directed node-link network, so that all links directed into a given node are connected to nodes of a lower number.

Tubercle: An encrustation growing inward from the wall of a pipe caused by the buildup over time of oxidized corrosion products.

Water Age: The average amount of time that a parcel of water has been in the distribution system.

Regulatory Requirements

In the United States, the baseline regulatory requirements on water quality are set by the EPA. These requirements are enforced by that agency and by the individual States as have been granted primacy by this agency. Individual States may institute more stringent requirements if they deem them to be necessary. Although regulations historically have applied to the point at which water enters the distribution system, there is a trend toward the development of regulations at the point of use.

Shaping the Future of Water Quality and Water Delivery

The Safe Drinking Water Act passed by Congress has set both the tone and the stage for water quality in the United States for years to come. Before addressing the existing national primary drinking water quality regulations, it is important to cover some important perspectives that are shaping the future of community water supplies with a primary focus on maintaining and improving water quality for consumer consumption. Several primary topics are reviewed below:

The Need to Plan Now!

The following quoted statement provided an important perspective on the future of water supplies in the United States, and a brief but extremely important statement on water quality.

> Water utilities across the United States provide an essential service to millions of people every day. In fact, it is a service that is often taken for granted. Water utilities will continue to be challenged by industry trends, such as increasing customer expectations, more stringent regulatory requirements on water quality, increasing water resource demands, and aging infrastructure, while endeavoring to maintain low utility rates. The major challenge over the next decade will be to understand these trends and focus investments of limited resources to create the greatest benefits for both the utility and the consumer in the long run. (1) (Earl Nightingale. The HDR Company, March 2004.)

The HDR Company also provides a prospectus on six topics that address the future of water quality in the United States. A synopsis of each topic is presented below: (1)

1) **Community:** Consumer sentiment and perceptions will drive changes in water utility communications and services. Expectations for water performance have never been higher. Readily available water quality information, together with highly publicized contaminant issues, such as arsenic, have increased consumer scrutiny regarding the quality and safety of public water sources. The Arsenic Rule, which lowers the maximum contaminant level to 10 µg/L, became enforceable in 2006 and affects 41,000 water systems across the country. Of those, about 3,000 are small or very small water systems that have no water treatment infrastructure and limited financial resources. Recognizing this problem, the American Water Works Research Foundation, assisted by HDR developed and demonstrated arsenic removal technologies appropriate for application to small water systems. This involved bench-scale and full-scale studies of 13 different technology variations with help from universities and utilities in Montana, Arizona, and California. With this information, communities are able to address consumer concerns responsibly and confidently. As utilities move forward in this age of bottled water and "treatment at the tap" technology, water supply professionals need to understand the technology and communication tools to meet customer's changing needs and expectations.

2) **Water supply:** Water is considered to be a finite global resource. The U.S. population is expanding at the rate of approximately 1 percent per year, and is projected to exceed 400 million by 2050. Consequently, protection of water resources and innovative applications of reuse treatment technologies will be vital in providing an uninterrupted supply of safe drinking water for future generations. Watershed protection will continue to be an area of intense activity.

   As the cost of water treatment continues to escalate to meet drinking water demand and water quality regulations, focusing on improving the quality of raw water sources has to be paramount. The increasing frequency of drought conditions and natural cover fuel fires and forest fires on watershed lands adds to these treatment challenges. As fresh water is exhausted, desalination will become increasingly popular in coastal areas.

   The bottom line is—*Easily accessible fresh water supplies are all but gone!* Some creative solutions to these problems will be presented throughout this manual.

3) **Advanced water treatment technology:** As communities plan improvements to treatment processes, advanced drinking water technologies will become a major factor for future regulatory compliance. One emerging regulatory issue is the removal/inactivation of the pathogen Cryptosporidium. Low-pressure membrane technology and ultraviolet irradiation have developed as two key advanced treatment technologies that can be used to assist water systems in eliminating the Cryptosporidium threat to their customers. Reduced costs and increased competition are taking these extremely feasible alternative technologies. The HDR Company is assisting communities such as Kennewick, Washington, in taking advantage of recent advances in submerged membrane technology to expand the capacity of their existing filter basins, while at the same time improving the quality of water to their customers at minimal increased costs.

4) **Water distribution systems:** Water distribution systems are the next frontier facing regulatory pressure relative to water quality. The Total Coliform Rule and the corrosion requirements of the Lead and Copper Rule are only the beginning. As part of the Stage 2 Disinfectants/Disinfection By-Products Rule, systems will conduct an initial distribution evaluation to find sites in the system that have the highest disinfection by-product levels, and new sampling sites will be selected to capture those peak concentrations. Utilities will be paying more attention to the design of distribution infrastructure to reduce water age as defined above. Systems will look for distribution system management practices to minimize potential problems and better control and improve distribution system quality. Of special concern is compliance with both existing and proposed regulations relative to aging distribution systems.

5) **Asset management:** Identifying and prioritizing in investments in operations, maintenance, and capital improvements is a critical challenge facing municipal administrators and managers. This is especially true as water utilities strive to maintain or increase level of service, meet regulatory requirements, and reinvest in an aging infrastructure through improved asset management. Water utilities need *now* to examine their business practices and how decisions are to be made to meet the ever-increasing demands by the EPA for a more stringent delivery of improved drinking water quality.

   Understanding the life cycle and the different practices and procedures for supplying water to consumers, and the system needs to supply both maximum consumer consumption demands and fire flow demands simultaneously, is a real challenge for any water system. Typically when normal consumption increases, water supply for fire protection decreases. This is especially true for older water systems. Therefore, municipal officials, water supply officials, and fire service officials need to examine municipal water supplies from a systems approach that considers community assets and the impact that the water system has on fire insurance rates in the city. This is essential for redesigning a

water system and optimizing the way the water supply business is done with a focus on minimizing water delivery performance failures.

6) **Reuse/Recycle:** HDR states, "*…to meet water demands for today and the future, many utilities are developing a balanced portfolio of water resources from traditional and other type of facilities and management techniques.*" (1)

This portfolio needs to include programs such as water transfers between existing systems, improved water conservation, the feasibility of separate water systems for domestic consumption and fire protection, desalination for coastal cities, possible pumping to counties inward from coastal areas, and examining the costs and benefits. Of course, the political considerations of adopting a county-wide water authority to monitor water quality throughout the county and prepare disaster management plans to supply potable water in case of a system interruption are extensive. Alternative water supplies for fire protection where there are no fire hydrants recognized by the ISO is another need. At least one mobile water purification unit should be available in each of the 4,001 listed counties in the United States.

Recycled water is being used in a variety of ways, such as ground water recharge, sea water intrusion barriers, landscape and agricultural irrigation, and industrial and commercial uses. Two examples of wastewater reuse are supplementing surface water that support aquatic life where water supplies are either limited due to poor water quality or limited by availability. Advanced wastewater treatment technologies such as new filtration technologies, membranes, and membrane bioreactors provide innovative solutions to support the substitution of reclaimed water for nonpotable uses. In some cases, reclaimed water is used for indirect potable use via ground water recharge.

Environmental Protection Agency (EPA) Standards for Water Quality—2005

The existing National Primary Drinking Water Regulations are divided into five primary categories with four evaluation areas, plus comments for each category. The following material is presented to provide conceptual understanding of these regulations. **All** municipal officials, including the fire service, need to be aware of the complexity of water quality standards and their individual roles in maintaining these standards.

Due to the amount of material to be presented, two chart sets are provided.

- Chart I: Regulation—Name of Contaminant—Allowable Million Gallons per Liter (unless noted)—Health Effects of Contaminant.
- Chart II: Regulation—Monitoring Requirements—Special Comments.

Chart I

Regulations	Name of Contaminant	Mg/L	Health Effects of Contaminant
Inorganic Chemicals (IOCs)	Antimony	0.006	Increase in blood cholesterol Decrease in blood sugar
	Asbestos	7 MFL	Increased risk of developing benign intestinal polyps
	Barium	2.0	Increase in blood pressure
	Beryllium	0.004	Intestinal lesions
	Cadmium	0.005	Kidney damage
	Chromium (total)	0.1	Allergic dermatitis

Regulations	Name of Contaminant	Mg/L	Health Effects of Contaminant
	Copper	TT (AL=1.3)	Gastrointestinal/Liver/Kidney problems
	Cyanide	0.2	Thyroid/Neurological effects
	Fluoride	4.0	Skeletal problems
	Lead	TT (AL=0.015)	Kidney problems, high blood pressure, delays in physical and mental development in infants and children
	Mercury (inorganic)	0.002	Kidney damage
	Nitrate (as N)	10.0	Methemoglobinemia (blue baby syndrome/diuresis
	Nitrite (as N)	1.0	Methemoglobinemia (blue baby syndrome/diuresis
	Selenium	0.05	Hair or fingernail loss Numbness of fingers or toes Circulatory problems
	Thallium	0.002	Hair loss, changes in blood Kidney/Liver/Intestine problems
	Arsenic Rule		
	Arsenic	0.010	Cancer risk/Cardiovascular and dermal problems
	Radionuclides		
	Combined Radium 226 and 228	5pCi/L	Cancer risk
	Gross Alpha (Excluding Radon and Uranium)	15pCi/L	Cancer risk
	Beta Particles and Photon Emitters	4 mem ede/year	Cancer risk
	Uranium	0.030	Kidney problems and cancer risk
Organic Chemicals	**Synthetic Organic Chemicals (SOCs)**		
	2,3,7,8-TCDD (Dioxin)	1.0000003	Cancer risk/Reproductive system problems
	2,4,5-TP (Silvers)	0.05	Liver problems
	2.4-D	0.07	Adrenal gland/Liver/Kidney problems
	Acrylamide	TT	Cancer risk/nervous system Blood problems
	Alachor	0/002	Cancer risk/Eye/Liver Kidney/Spleen problems
	Atrazine	0.003	Cardiovascular problems Reproductive system problems
	Carbofuran	0.04	Blood/Nervous system Reproductive system problems
	Chlordane	0.002	Cancer risk/Liver Nervous system problems
	Dalapon	0.2	Kidney problems
	Di (2-ethylhexyl) adipate	0.4	Liver/Weight loss Reproductive system problems
	1,2-Dibromo-3 chloropropane (DBCP)	0.002	Cancer risk Reproductive system problems

Regulations	Name of Contaminant	Mg/L	Health Effects of Contaminant
	Di (2-ethylexyl)phthalate	0.006	Cancer risk/Liver Reproductive system problems
	Dinosb	0.007	Reproductive system problems
	Diquat	0.02	Osular problems
	Endothall	0.1	Stomach/Intestinal problems
	Endrin	0.002	Liver problems
	Epichlorohydrin	TT	Cancer risk/Stomach problems
	Ethylene Dibromide (EDB)	0.00005	Cancer risk/Liver/Kidney/Stomach Reproductive system problems
	Glyphosate	0.7	Kidney and reproductive system problems
	Hepatachlor	0.004	Cancer risk/Liver problems
	Hepatachlor Epoxide	0.0002	Cancer risk/Liver problems
	Hexachlorcyclopentadine	0.05	Kidney/Stomach problems
	Lindane	0.002	Kidney/Liver problems
	Metoxychlor	0.04	Reproductive system problems
	Oxamyl (Vydate)	0.2	Nervous system problems
	Benzo[a]0pyrene (PAHs)	0002	Cancer risk Reproductive system problems
	Polychlorinated	0.005	Cancer risk/Thymus gland/
	Biphenyls		Immune deficiencies/Nervous or reproductive system problems
	Pentachloropenol	0.001	Cancer risk/Liver/Kidney problems
	Picloram	0.5	Liver problems
	Simazine	0.004	Problems with blood
	Toxaphene	0.003	Cancer risk/Liver/Kidney/Thyroid problems
	Volatile Organic Chemicals (VOCs)		
	1,1,1-Trichoroethane	0.2	Liver/Circulatory/Nervous system problems
	1,1,2-Trichoroethane	0.005	Kidney/Liver/Immune system problems
	1,1-Dichoroethyhlne	0.007	Liver problems
	1,2,4-Trichlorobenzene	0.07	Adrenal gland problems
	1,2-Dicloroehane	0.005	Cancer risk
	1,2-Dichloropropane	0.005	Cancer risk
	Bezene	0.005	Cancer risk/Anemia/Blood problems
	Carbon Tetrachloride	0.005	Cancer risk/Liver problems
	Chlorbenzene	0.1	Kidney/Liver problems
	Cis 1,2-Dichloroethylene	0.07	Liver problems
	Dichlormethane	0.005	Cancer risk/Liver problems
	Ethylbenzene	0.7	Kidney/Liver problems
	Ortho-Dichlorobenzine	0.6	Kidney/Liver/Circulatory problems
	Para-Dichlorobenzene	0.075	Kidney/Liver/Spleen/

Regulations	Name of Contaminant	Mg/L	Health Effects of Contaminant
	Circulatory problems		
	Styrene	0.1	Kidney/Liver/Circulatory problems
	Tetrachloroethylene		
	(PCE)	0.005	Cancer risk/Liver problems
	Toluene	1.0	Kidney/Liver and
	nervous system problems		
	Trans-1,2-Dichloroethylene	0.1	Liver problems
	Trichloroethylene	0.005	Cancer risk/Liver problems
	Vinyl Chloride	0.002	Cancer risk
	Xylenes (total)	10.0	Nervous system problems
Microbiological Contaminants			
	Total Coliform Rule	See Comments	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. The presence of fecal coliform or E-Coli may indicate potential contamination that can cause diarrhea, cramps, nausea, headaches, or other symptoms.
	Surface Water Treatment Rule (TCR)		
	Turbidity	TT	None. Interferes with disinfection.
	Giardia lambia	TT	Gastrointestinal illness, Giardiasis
	Enteric Viruses	TT	Gastrointestinal and other viral infections
	Ligionella	TT	Legionnaire's disease
	Heterotrophic Plate Count	TT	None. Used to measure a variety of common bacteria in water. Lower bacteria concentrations indicates better maintained water systems.
	Interim Enhanced Surface Water Treatment Rule (IESWTR)		
	Turbidity	TT	None. Interferes with disinfection.
	Cyptosporidium	TT	Gastrointestinal illness, Cyptosporidiosis
	Long-Term (1) Enhanced Surface Water Treatment Rule (LTIESWTR)		
	Turbidity	TT	None. Interferes with disinfection.
	Cyptosporidium	TT	Gastrointestinal illness, Cyptosporidiosis
Disinfectants and Disinfection Byproducts			
	Stage 1 D/DBPR Disinfectants		
	Chlorine	4.0 as Cl (2)	Eye/Nose irritation Stomach discomfort
	Chloramines	4.0 as Cl (2)	Eye/Nose irritation Stomach discomfort/Anemia
	Chlorine Dioxide	0.8 as ClO (2)	Anemia/Nervous system problems

Regulations	Name of Contaminant	Mg/L	Health Effects of Contaminant
	Disinfection Byproducts		
	Total Triholomethanes	0.080	Cancer risk Potential reproductive system effects
	Liver/Kidney		
	Haloacetic Acids	0.060	Cancer risk
	Chlorite	1.0	Anemia/Nervous system problems
	Bromate	0.010	Cancer risk
	Total Organic Carbon	TT	

Chart II

Regulations	Name of Contaminant	Monitoring Requirements
Inorganic Chemicals (IOCs)	Antimony	Surface water—once a year Ground water—once every 3 years for IOC's, not including Asbestos, Lead, Copper, Nitrite or radionuclides
	Asbestos	Once every 9 years
	Copper	Same as Lead
	Lead	Followup monitoring every 6 months after corrosion controls are initiated or optimized. Systems consistently meeting AL can reduce monitoring to once per year and then every 3 years after that.
	Nitrate (as N)	Ground water—annually Surface water—quarterly initially, then annually Repeat frequently as determined by State requirements.
	Arsenic	Same as IOCs.
	Combined Radium	Sample point is the distribution system entry point that is representative of all sources being used. Four consecutive quarterly samples must be taken at all sample points.
	Beta Particles and Photon Emitters	The primary agency must designate the system as vulnerable. Once deemed vulnerable, quarterly samples must be taken for beta emitters and annual samples taken for Tritium and Strontium-90 at the distribution system entry point. Compliance is based on the running annual average of four quarterly samples taken at each sample point.
	Uranium	Same as Combined Radium and Gross Alpha
Microbiological Contaminants	Total Coliforms	For both surface and ground waters, the total number and location of samples is based on the population served and a system-specific sampling plan.
	Surface Water	Grab samples at least every 4 hours for continuous monitoring. Continuous chlorine residual required for systems greater than 3,300 persons. One to four grab samples per day are allowed for systems with less than 3,300 persons.
	Treatment Rule (SWTR)	

Regulations	Name of Contaminant	Monitoring Requirements
	Turbidity	Conventional and direct filtration systems must measure combined effluent turbidity at least every 4 hours and continuously monitor turbidity of each individual filter.
	Filter Back	No monitoring is required, but water systems must collect and retain the following information for review by the primary agency: • Copy of recycle notification and information submitted to the primary agency. • List of all recycle flows and frequency returned. • Average and maximum filter backwash flow rate (gpm) along with the average and maximum filter backwash duration. • Typical filter run time and written summary of how the filter run length is determined. • The treatment provided for recycle flow. • Design data on the treatment provided for the recycle flow, dimensions for recycle flow treatment processes, hydraulic loading rates, type of chemicals used along with the dose and frequency used, and frequency at which solids are removed.
	Wash Rule	
	Long-Term Surface Water Rule (LTSWR)	
	Turbidity	Conventional and direct filtration systems must measure combined filter and effluent turbidity at least every 4 hours and continuously monitor turbidity of each individual filter.
Disinfectants and Disinfection Byproducts		
	Disinfectants	Monitor the same as for the Total Coliform Rule. Compliance is based on running annual arithmetic average of monthly averages. Daily sample at distribution system entry point.
	Disinfectant	Four quarterly distribution samples. Compliance on running annual average of quarterly average.
	Chlorine	Daily sample at distribution system entry point.
	Bromate	One sample per month (ozone systems only) and running annual average.
	Total Organic Carbon Byproducts	Source treated Water TOC sample once a month.

The Future of Environmental Protection Agency Regulation

The following information pertains to the *projected regulatory schedule* that covers a time period to 2011. It is imperative that local governments keep current on the actual implementation or modifications to these proposed regulations.

1) Regulation on the contaminant *Alicarb.* This applies to a contaminant that could adversely affect the nervous system. Regulations originally were proposed in 1991. EPA will re-examine risk assessment and occurrence data and determine what further action is appropriate. Final promulgation is set with a projected effective date of 2008.

2) Radon Rule Adjustment. Radon presents a potential cancer risk. The proposed rule adjustment would be to increase the monitoring requirements. A proposed effective date for new regulations is set for 2007.

3) Revisions to the Total Coliform Rule (TCR). Coliforms may be indicators of harmful bacteria in the water supply. The revisions proposed address requirements to finished water quality in the distribution system as well as to evaluate alternative monitoring strategies. A firm proposal is scheduled for final promulgation in 2007, with an effective date of 2010.

4) A proposed Stage 2 regulation on disinfectants and disinfection. This has implications for health problems associated with water supplies, including cancer risk, potential reproductive system effect, liver, kidney, and nervous system problems. The rule would apply to all community and nontransient noncommunity water systems that add a disinfectant other than UV or deliver water that has been disinfected. Final promulgation is set with an effective date of 2008.

5) Long-Term 2: Enhanced Surface Treatment Rule applies to all public water systems that use surface or ground water. It is most important to protect against gastrointestinal illnesses. Beginning 6 months after the actual promulgation, monthly monitoring of the water source for Cryptosporidium for 2 years will be to characterize the source water. For small systems, E-Coli concentrations will be in lieu of Gryptosporidium. Based upon the conditions found, the levels of additional removal beyond that provided by conventional treatment or direct filtration will be identified. To meet the additional removal requirements, the water system would select the appropriate tool(s) from the Microbial Toolbox. Note that ultraviolet light disinfection would be allowed under this rule. For implementation, large and medium systems where the population served was greater than 10,000, have 3 years after source water characteristics or 6 years after rule promulgation to meet the higher removal requirements. Small systems will be on a delayed schedule.

6) Ground Water Rule (GWR): The new ground water rule also is aimed at preventing Gastrointestinal disorders and illness. It specifies monthly sampling and testing of the source water for E-Coli, Enterococci, or Coliphage for systems not treating to a 4-log inactivation or removal of viruses and raw water from a sensitive aquifer. Continuous monitoring of the treatment techniques for water systems serving a population greater than 3,300, while smaller water systems will be required only to take grab samples. The effective date for this rule is 2007.

7) Six-Year Review of Regulations: In June 2002, the EPA proposed to review the total Colifom Rule (TCR), based on its review of the existing regulations. However, based on revised risk assessments, several contaminations could be proposed "out of cycle." Potential "out of cycle" revisions are possible for Atrazine, TCE, Fluoride, Chromium, and particularly Chromium VI.

8) Contaminant Candidate List (CCL) and Regulatory Determinations: The CCL is a starting point to make a regulatory determination on whether to rule a specific contaminant or not. EPA proposed the first regulatory determinations in April 2002, and proposed **not** to regulate any of the priority contaminants from the first CCL. This assessment on some contaminants such as Perchlorate and MTBE, are being completed and are likely to be the first "out of cycle" regulations from CCL regulatory determinations. No effective date has been set at this writing.

9) Endocrine disruptors: Some scientists have proposed that certain chemicals might be disrupting the endocrine system of humans and wildlife. To that end, the EPA is developing a screening program to identify the chemicals that should be monitored to determine the spread of endocrine disruptors. Criteria to select priority chemicals for screening are to be finalized in the near future. The EPA plans to propose a rule to implement the screen process. There is no established timeline on this subject.

Water Quality Monitoring

It is difficult to use monitoring data alone to understand the fate of transformation of substances in drinking water as the water moves through the distribution system. Even medium-sized cities have thousands of miles of pipes, making it impossible to achieve widespread monitoring. The flow paths and the travel paths of water through these systems are highly variable because of the single-point feed or the looped layout of the pipe network and the continuous changes in water usage over time. The common use of storage facilities in the system makes things even more variable. At different times of the day, a specific location in the pipe network might be relatively new water from the treatment works when storage tanks are being refilled, or old water when storage tanks are being emptied. It is usually impractical to experiment on the entire distribution system by seeing how changes in pumping schedules, storage facility operations, or treatment methods affect the quality of water received by the consumer.

For these reasons, mathematical modeling of water quality behavior in distribution systems has become an attractive supplement to monitoring. These models offer a cost-effective way to study the spatial and temporal variation of a number of water quality constituents including:

- the fraction of water originating from a particular source;
- the age or time of residence, of water in the system;
- the concentration of a nonreactive tracer compound either added or removed from the water system (e.g., fluoride or sodium);
- the concentration and loss rate of secondary disinfectant (e.g., chlorine); and
- the concentration and growth rate of disinfection byproducts such as THMs, and the number and mass of attached and free-flowing bacteria in the system.

The models can be used to assist managers to perform a variety of water quality related studies. Examples include the following:

- calibrating and testing hydraulic models of the system through the use of chemical tracers;
- locating and sizing storage facilities and modifying system operations to reduce the age of the water;
- modifying the design and operation of the system to provide a desired blend of waters from different sources;
- finding the best combination of pipe replacement, pipe relining, pipe cleaning, reduction in storage holding time, location, and injection rate at booster stations to maintain desired disinfection levels throughout the system;
- assessing and minimizing the risk of consumer exposure to disinfectant byproducts; and
- assessing the systems vulnerability to incidents of external contamination.

References:

1. HDR Company, Washington Office, 8403 Colesville Road, Suite 910, Silver Spring, MD 20910-3313.
2. Mays, Larry W. "Water Distribution Systems Handbook." Ch. 9 in *Water Quality* by Walter M. Grayman, Consulting Engineer, Lewis R. Rossman, U.S. Environmental Protection Agency, and Edwin E. Geldreich, Consulting Microbiologist. New York: McGraw-Hill, 2000.

CHAPTER 4: Water Distribution System Design Concepts

Water Supply Source Classifications

Chapters 2 and 3 both described two basic sources of water that are used for community water supply systems as follows:

1) Ground water sources (wells), which indicate that the water is below ground level or below the earth's surface. It is necessary to dig or bore a well in order to tap into the water source. This is also generally referred to as a "well-water source." Artesian wells may have water that is trapped below a rock formation so that the water is under pressure. When an auger breaks through the rock formation, there may be sufficient water under pressure to force the water to the earth's surface where it is then pumped to the water treatment facility and either to finished water storage or pumped directly into the distribution system. All other well sites require a well pump to raise water to the earth surface. Depending on the depth of the well, the pump may be able to transport the water directly to the water treatment facility; otherwise, one or more pumps are needed in series to move water to the treatment location. **Figure 4-1** shows a typical arrangement of a well water pump to treatment facility arrangement.

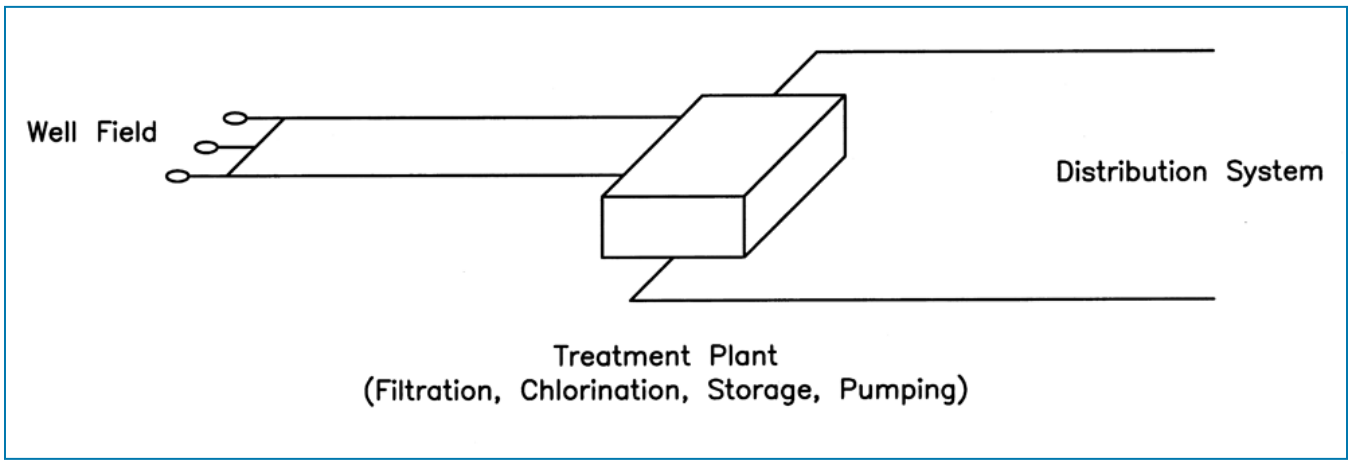

Figure 4-1

2) Surface waters represent the second general classification of water supplies. This means that the water is taken from aboveground water sources that include both large and small natural lakes, and high and low reservoir lakes formed by manmade dams to retain the water, rivers, and streams.

Water System Components

It is essential to understand the basic types of water supply systems and the physical arrangement of system components prior to discussing either design or evaluation concepts associated with these components. There are two basic types of water supply systems to create water pressure within the distribution system to supply water to built areas of a community, and to provide required water pressure to fire hydrants located on the water supply system. These two types of water systems that supply water under pressure for consumer consumption and fire protection are

1) **Gravity feed systems.**
2) **Pumping pressure systems:** Each of these systems must take water from a supply source, pass the water through a treatment plant, and then transport the water into the distribution system. It needs to be recognized that community water systems can be divided into four basic classification according to the water source:
   a) High or low reservoirs that hold nonpotable water for gravity feed.
   b) Pumping station systems that use ground water from streams, rivers, canals, man-made or natural lakes, and other special provisions for impound water. In these types of systems, the raw water is pumped from the source point to the treatment plant and then either pumped directly into the distribution system or into storage to be used on demand by the community.
   c) Pumps at well sites that pump water to the treatment facility. Based on the difference in elevation between the treatment facility and the community to be served, the water may flow by gravity through the distribution systems, or there may be the need for another pumping station.
   d) A combination of gravity flow and one or more pumping stations to transport the water from the source point to all of the water demand points on the distribution system.

Water System Classifications

Communities up to about 15,000 population may have a relatively simple, straightforward classification for their municipal water supply. However, large cities can have a very complex water system. There are some basic water system classifications that have been established to provide a basic reference for examining the adequacy and reliability or water systems. These are identified as follows along with referenced illustrations:

1) High-level reservoir system: This classification refers to a water source that is at least 100 feet in elevation above the treatment facility in order to provide sufficient head pressure so that nonpumping station is required. The water should be a natural impounded lake with a properly installed flow pipe between a source point in the lake and the treatment facility, or the impounded lake may be created by a dam on a stream or a runoff area in a valley that will allow the water to back up behind the dam. This is illustrated in **Figure 4-2**.

This type of system gives the opportunity to develop a very reliable water supply system. If there is sufficient elevation difference between the water intake source on the reservoir system and the distribution piping in the community, it is possible to design a water system that does not require one or more pumping stations. The head pressure for supplying water to the treatment plant and from the treatment plant to the distribution system is sufficient to meet both consumer demand and needed fire flows. This is also a very economical system since there is no substantial power requirement to run the water system beyond normal lighting requirements and requirements for establishing the level of water quality needed for the community.

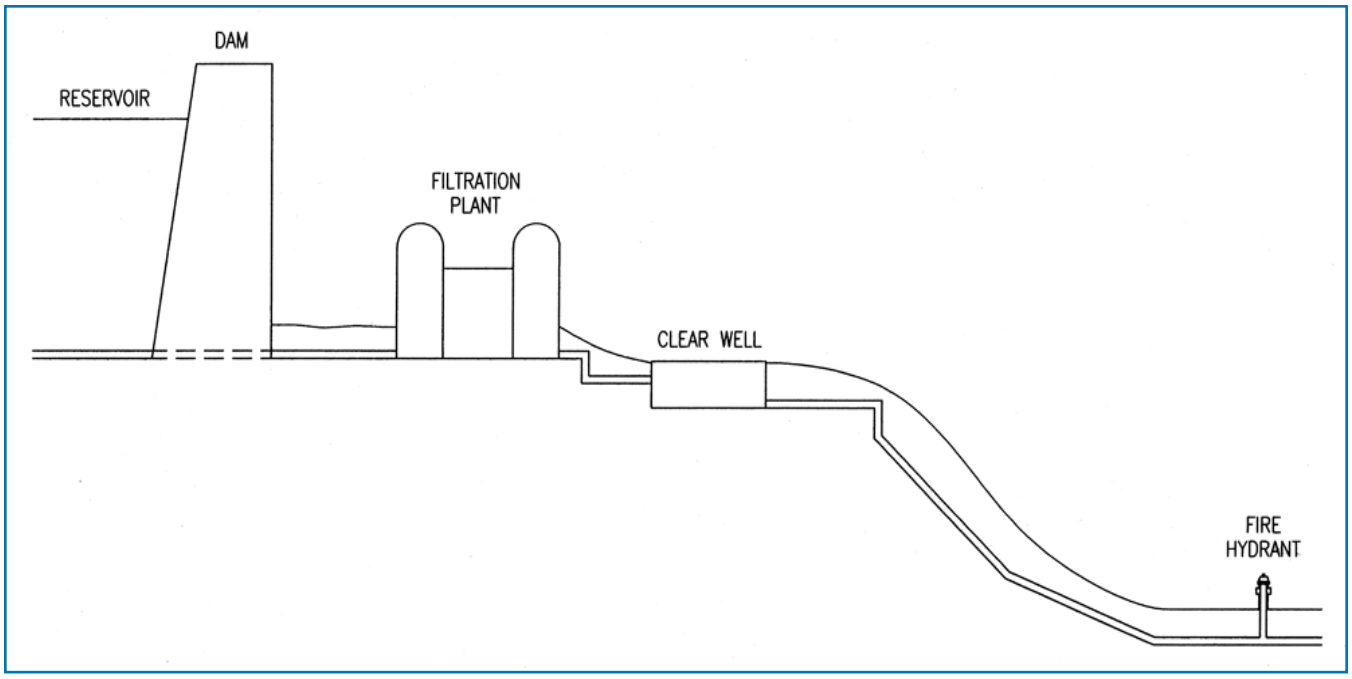

Figure 4-2

High-level reservoir systems are found in high hills and mountain regions of the country and around the Great Lakes, where the lake plain has foothills of 200 to 500 feet above the lake level. These systems are highly reliable under all weather conditions that may cause disruption to the other types of systems discussed below. Typically, reservoir water supplies can be controlled at the surface level so as to minimize the amount of water treatment necessary to meet current and future water quality requirements.

A gravity flow system that does not require a pump interface is considered the most reliable type of water system, since there is no mechanical component to break down or fail when the power source goes down. For the same reasons, it is the most economical type of water supply system to operate.

2) **Low level reservoir systems:** Low-level dams, usually up to about 20 feet high, are typically built on steam flow that is considered reliable year round. The reservoir basin may be bulldozed to form a small lake that will supply water to communities of populations up to about 25,000. One type of low-level reservoir provides a channel from a major river or lake to form a small lake behind a low-level dam. If there is an expected variation in the water level from the primary source, such as a drought or heavy freezing in the winter months, a gated pipe with an earth cover is used to prevent backfeed to the primary water supply source. A basic configuration for a low-level dam is depicted in **Figure 4-3.**

Low-level retention dams typically require a pumping station to transport water to the treatment plant and, if the land area is relatively flat, a second pumping station to pump treated water directly to the distribution system or to elevated storage to provide the required pressure and volume to meet instantaneous flow demand. The elevated storage can be designed to minimize the direct pumping requirements.

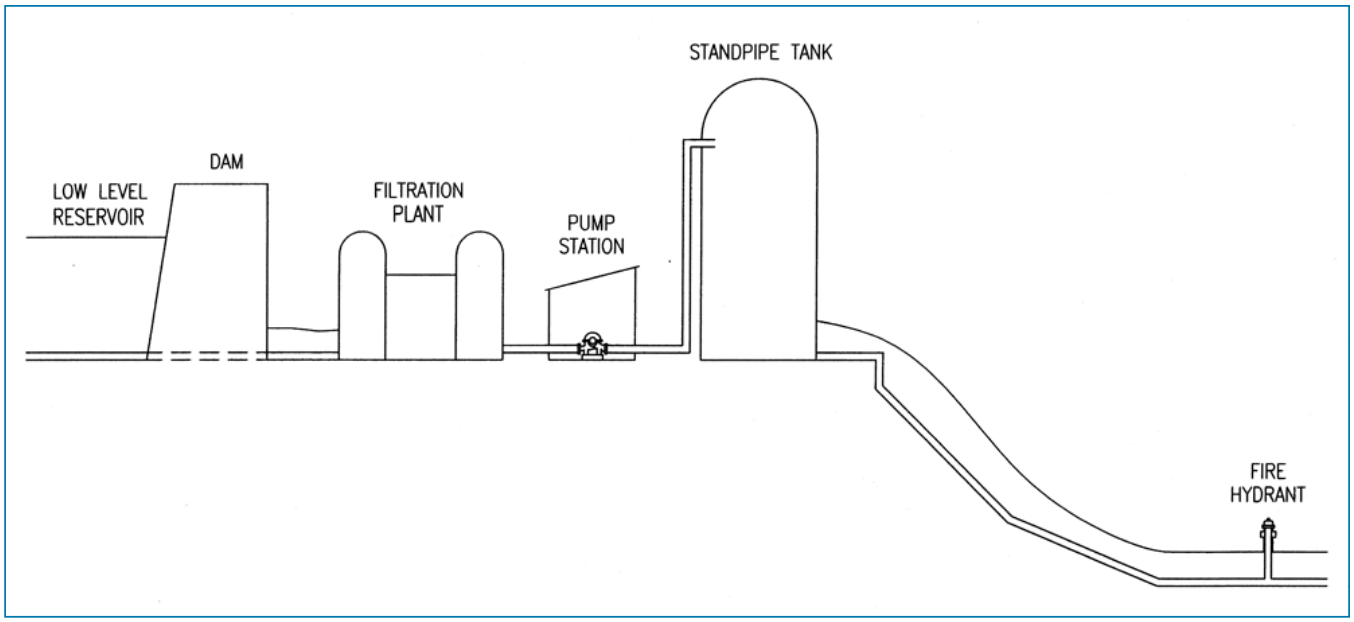

Figure 4-3

3) **Direct pumping systems:** **Figure 4-4** illustrates how a direct pumping station feeds water to the treatment plant and then a second pumping system transports water to a storage holding area, such as a clear well, to a standpipe storage tank that is maintained full as domestic consumption varies throughout a single day. This minimizes the time the pump or pumps actually have to run. The pumps also may be designed and arranged to pump the treated water directly into the distribution system when there is a high demand on the water system. This could occur when there is a major fire in the community.

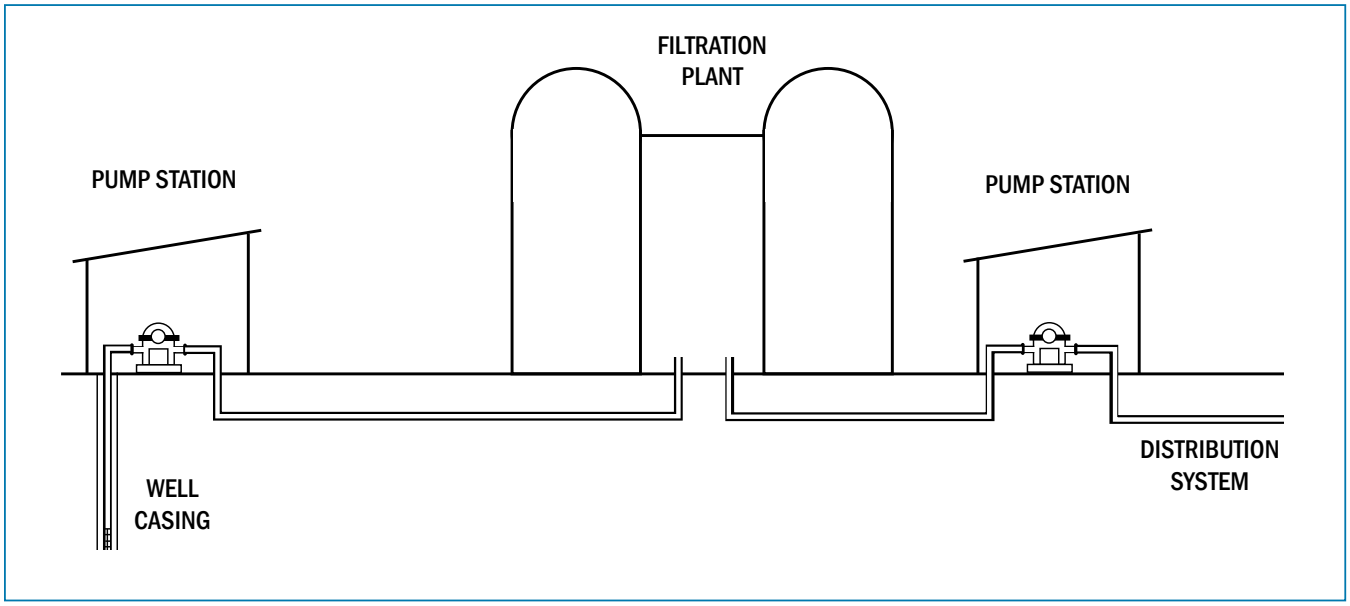

Figure 4-4

4) **Pumping station at well sites and gravity storage:** In this type of supply system, one drilled well, or a field of wells, feed water to a ground-level pumping station. This concept is presented in **Figure 4-5**. Chapter 3 indicates that the water treatment for ground water supplies may be less rigorous than for surface water supplies. The quality of the ground water in many areas of the country is so good that the only treatment necessary is chlorination through an injection method in the pipes that carry the non-potable water. In most cases, any other required water treatment generally is handled in a similar manner. The treated water either flows by gravity to the distribution system or is pumped to one or more elevated storage tanks. Potable water flows by gravity from the storage tank to the distribution system. Small communities that essentially operate off individual wells might want to consider this type of system. This is a more efficient way to provide water that is reliable year round, and is a system that can meet both consumer demands and needed fire flow requirements. This concept should be investigated with reference to the reduction in fire insurance premiums as the result of having a recognized water delivery system.

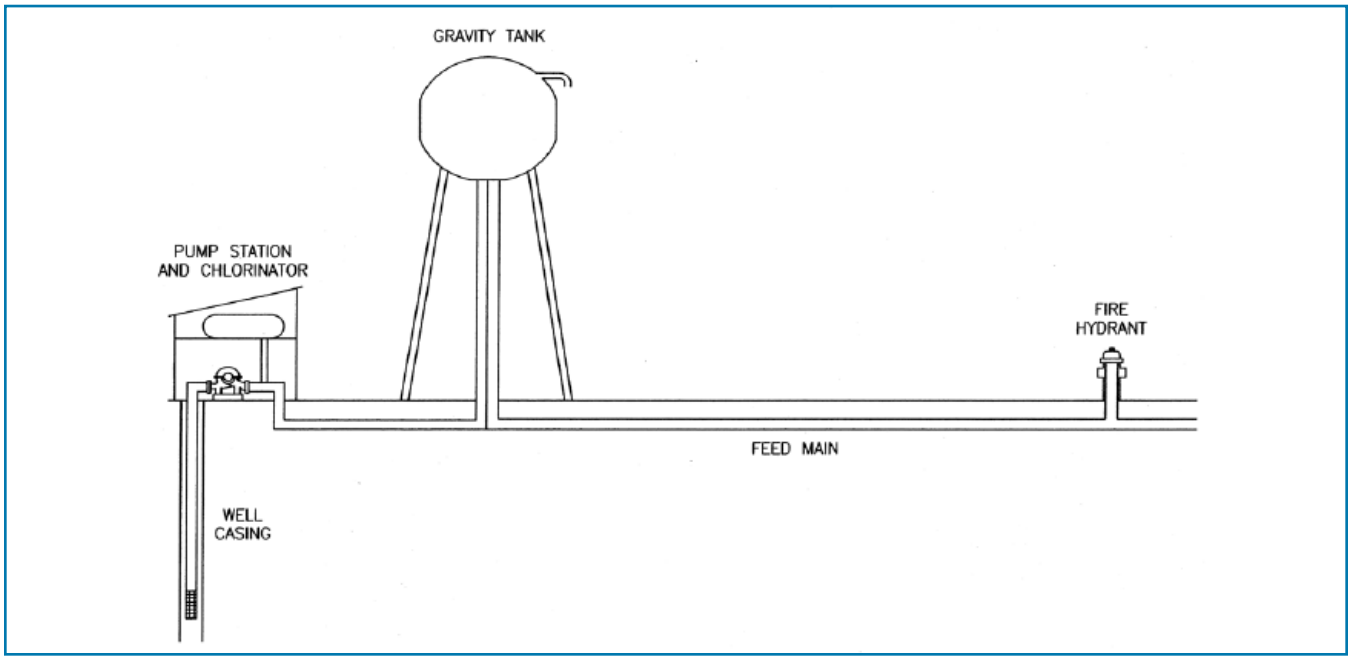

Figure 4-5

Composite Water Supply Systems

While the descriptions and configurations reviewed above cover the basic types of community water supply systems, specific conditions of areas served by the water system and, most importantly, the topography, may require a "composite system" that uses components from more than one of the "typical water systems." Some examples:

- Adding pumping stations to a gravity reservoir system to increase pressure and volume during peak demand periods including a fire flow requirement
- Gravity tank supplies often have more than one storage tank to meet daily consumption requirements. On smaller water systems, gravity tanks may be needed to meet both volume and pressure requirements in case of a "working structure fire."

- Booster pumping stations may be installed where there is a need for more than one service level based on pressure demand.
- Well fields may have a number of different lift pumps that transport water to a filtration plant instead of localized purification.
- Direct pumping into the distribution system may be supplemented by gravity tanks that "float" on the system to maintain pressure and flow characteristics during different demand periods through the day and night.
- Gravity tanks are especially useful for improving the reliability of any water system.

System Demand and Water Design and Flow Criteria

Overview

The following information is a synopsis of the subject title by the AWWA *Manual of Water Supply Practices* M-31. (7) This material reviews the *significant* relationships between the various demands placed on a water distribution system and outlines recommended design-flow criteria. However, before system demands or design-flow criteria can be reviewed, a basic understanding of a water distribution system and its specific components is needed. The following is a basic review of water distribution systems and the requirements placed on specific elements of a water system.

Methods of water distribution: Water is dispersed throughout the distribution system in a number of different ways, depending on local conditions or on regulations and requirements that influence water system design. The common methods of water distribution to the pipe network are reviewed under the following titles.

1) **Gravity distribution:** This is possible when the treated water source is a retention pond, clear well, or storage tank at some needed elevation above the community. In this type of system, sufficient pressure is available due to gravity to maintain water pressure in the mains for domestic consumption and fire service demand. This is the most reliable method of distribution if the piping leading from the treated water source to the community is adequate in size and safeguarded against accidental breaks. Higher pressures for firefighting, however, requires the use of mobile fire department pumpers and, in some cases, stationary booster pumps on the water system to provide needed fire flows at representative fire hydrants with a residual pressure of 20 psi.
2) **Pumps and elevated storage:** Through the use of pumps and elevated storage, the excess water pumped during periods of low consumption is stored in elevated tanks or reservoirs. During periods of high consumption, the stored water supplements the water that is being pumped. This method allows fairly uniform flow rates and pressures throughout the water system. Consequently, this method generally is economical because the pumps may be operated at their rated capacity. Since the stored water supplements the supply used for fires and system breakdowns, this method of operation is fairly reliable. However, it is necessary that fire department pumpers be available to boost the pressure from fire hydrant to delivery water through hose streams at the proper nozzle pressure to confine, control, and extinguish developing structural fires and other related fire events. A more complete understanding of these concepts is presented under **distribution storage** below.
3) **Pumps without storage:** When stationary pumps are used to distribute water, and no storage is provided on the distribution system, the pumps force water at the required volume and pressure directly into the mains. The outlet for the water is through domestic taps on the system or through fire

hydrants. This is the least desirable type of distribution system because a power failure could interrupt the water supply. In addition, as consumption varies, the pressure in the water mains is most likely to fluctuate. To conform to varying rates, several pumps are made available to add water output when needed, a procedure requiring constant attention at the water plant. Another disadvantage is the fact that the peak power demand of the water plant is likely to occur during periods of high electric power consumption, thus increasing power costs to operate the water system. However, one advantage of direct pumping is that a large stationary fire pump may be used on demand for structure fires. This pump increases the residual pressure to any desired amount permitted by the construction of the water mains.

Rates of Water Use

Three historical or predicted water demand rates are involved in the discussion of water system demand and design flow rate criteria for both consumer consumption and needed fire flow. These are as follows: (7)

1) **Average daily consumption:** This is the average of the total amount of water used each day during a 1-year period (usually expressed in million gallons per day, MGD)
2) **Maximum daily consumption:** This is the maximum total amount of water used during any 24-hour period in a 3-year period. This number should consider and exclude any unusual and excessive identified used of water that would affect the calculation. Such abnormal uses would include a water main break, a large-scale fire, or an abnormal industrial demand. This is often referred to as the MDC rate.
3) **Maximum hourly demand:** This is the maximum amount of water used in any single hour, of any day, in a 3-year period. It is normally expressed in gallons per day. It is determined in gallons per day by multiplying the peak hours by 24. This can also be express as MHD.

Distribution System Appurtenances

Piping and valve arrangement: *Water systems typically have three classifications of pipe used to transport to demand points throughout a community. These are identified as follows:*

1) **Primary feeders:** These are large pipes, usually with diameters ranging from 12 to 36 inches, based on the size of the population served. Primary feeders transport water form the water treatment plant to corporation line of the community and/or to major water storage locations within the community.
2) **Secondary feeders:** These are connected to the primary feeders to transport water along the major streets of the community. Secondary feeders need to be in place to supply all commercial property, public buildings, and private sector buildings that have a needed fire flow over 1,000 gpm. Secondary feeders typically are 10 to 16 inches in diameter.
3) **Distributor mains:** These are used to transport water from the secondary feeders to individual streets in the areas of the community that have small businesses like convenience stores and gas stations but, more importantly, along residential streets. The minimum pipe size should be 6 inches and, based on the system design, a possible dead- end pipe may need to be 8 or even 10 inches.

The sizes of pipe associated with the three classifications of pipe in a typical water system are approximations. The needed pipe size throughout the built-upon areas of a community is based on the hydraulic gradient of the community, consumer consumption profiles through the community, needed fire flow at representative locations throughout the community, and, quite importantly, the two methods for laying and connecting pipe throughout the community. The traditional pipe system design is referred to as a *Single-Point Feed System*. This is illustrated in **Figure 4-6**. In this case, water moves from the treatment plant to the community corporation line with a single primary feeder. The primary feed, in turn, supplies

the secondary feeders along the main streets of the community, and the distributor mains supply the block frontage along the residential streets. Note that any demand point on the system for either consumer consumption or fire flow through a fire hydrant, is fed from one direction only. In the single- point feed system, the pipe sizes need to meet the maximum daily consumption demand plus the needed fire flow. This results in a larger pipe than is needed under normal daily usage, without any fires. The second major weakness of this type of system is that there may be a lot of dead-end mains in the residential areas and at the end of secondary mains. This leads to the stagnation of water which rapidly reduces the quality of water, as discussed in Chapter 3.

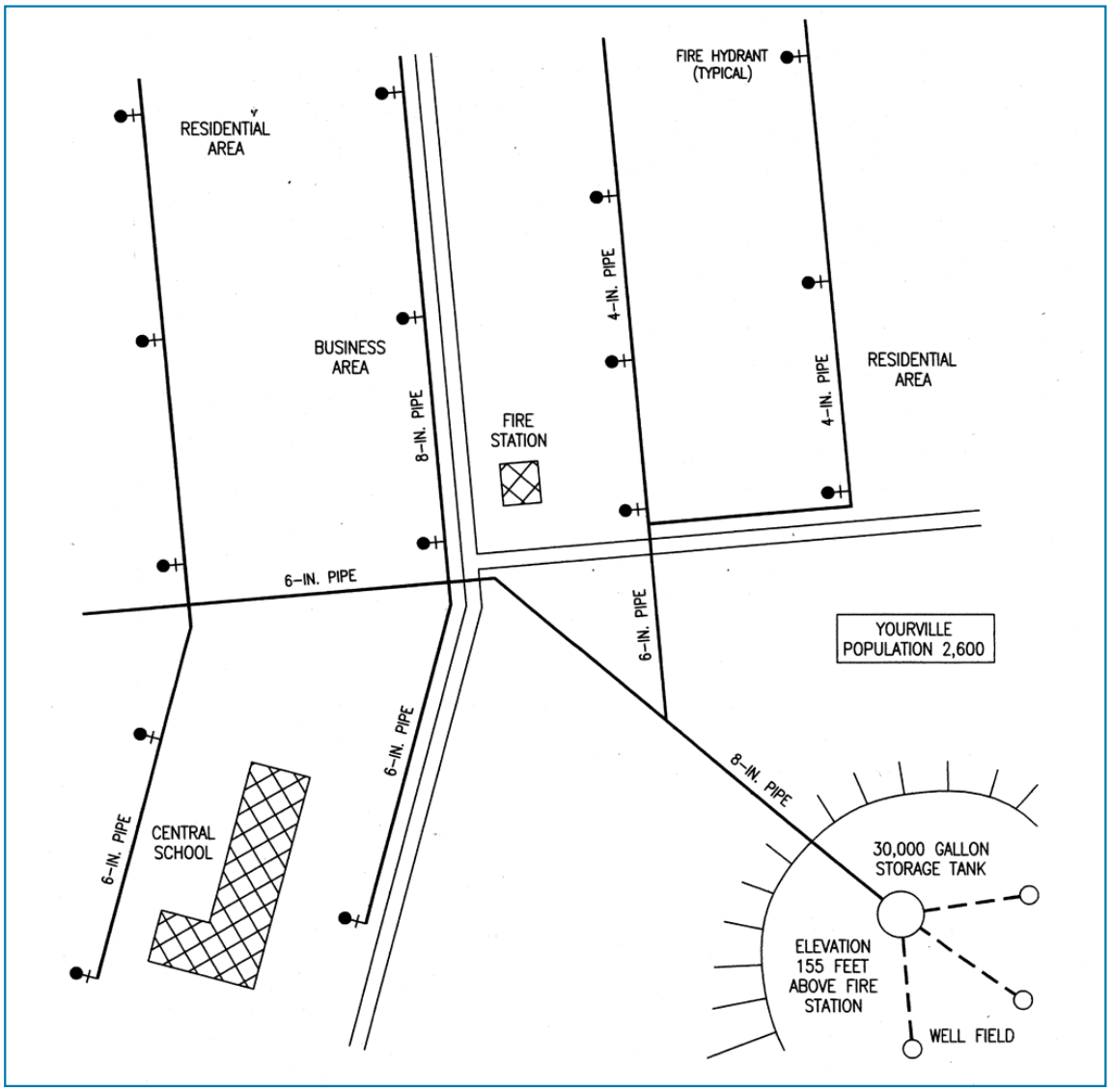

Figure 4-6: Features of a Small Community Water Distribution System

The more modern approach to water system design is to loop all the water mains, or cross-tie the mains, so that at any demand point the water is supplied from two directions. A basic *Pipe Looped* water system is depicted in **Figure 4-7**. This allows the designing engineer to develop a hydraulic model of the system and to determine mathematically the proper size of pipe according to flow paths to meet the consumer and needed fire flow demand points.

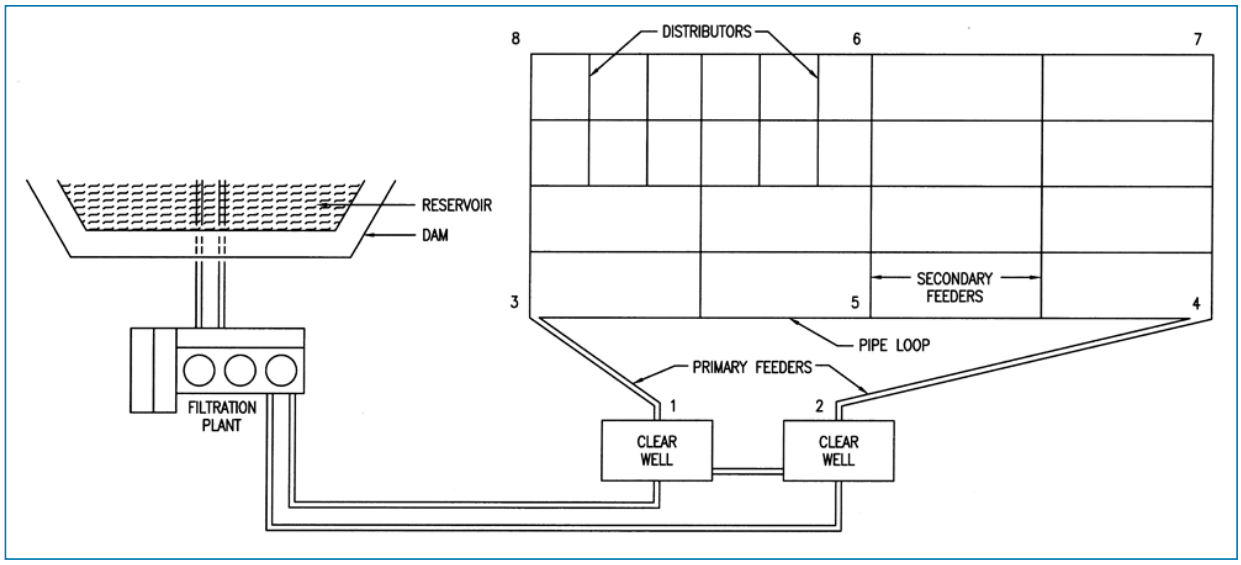

Figure 4-7: Layout of a Typical Looped Water Distribution System

It is important to note that many older water systems have been updated. By laying a primary feeder around the perimeter of the community to tie in all of the dead-end mains to improve both flow distribution and water pressures through the community. A simple example of this concept is presented in **Figure 4-8**.

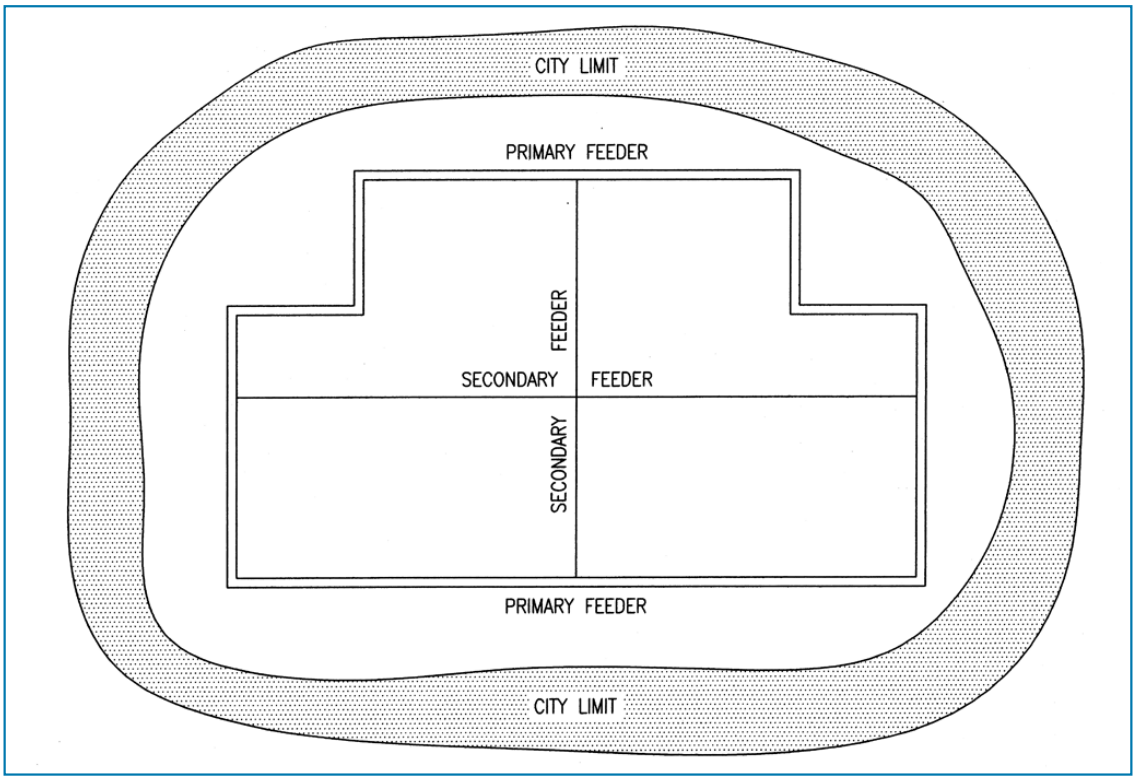

Figure 4-8: Typical Small City Distribution System

The following provisions conform to the current recommended practices of the AWWA.

- In small cities, the primary feeders should form a loop about 3,000 feet in length or two-thirds of the distance from the center of the community to the outskirts. The primary feeders should have control valves not over 1 mile apart, and the mains connecting them also should be valved where they connect. This configuration is necessary so that interruptions in service will not require shutting down the feeder main.
- In large cities, the primary feeders should be arranged into several interlocking loops, with the mains not over 3,000 feet apart. Looping allows continuous service through the rest of the primary mains even when one portion is shut down temporarily for repairs. Under normal conditions, looping also allows supply from two directions for large fire flows. Large feeders and long feeders should be equipped with blow-off valves at low points and air-relief valves at high points.
- The secondary feeders carry large quantities of water from the primary feeders to points in the system in order to provide for normal supply and fire fighting. They form smaller loops within the loops of the primary mains by running from one primary feeder to another. Secondary feeders should be spaced only a few blocks apart. The spacing allows concentration of large amounts of water for fire fighting without excessive heat loss and resulting low pressure.
- Small distribution mains for a grid over the area to be served supply water to fire hydrants and service pipes for residences and other smaller buildings. The size of these mains usually will be determined by the design flow. In residential areas, particularly where there are heavy uses for lawn watering, it may be necessary to determine the maximum consumer water demand.

This network of pipes throughout all the outlying sections of a community may consist of single mains or dual mains as depicted in **Figures 4-9** and **4-10**. **Table 4-1** presents a comparison of the repair procedures needed for single and dual main systems.

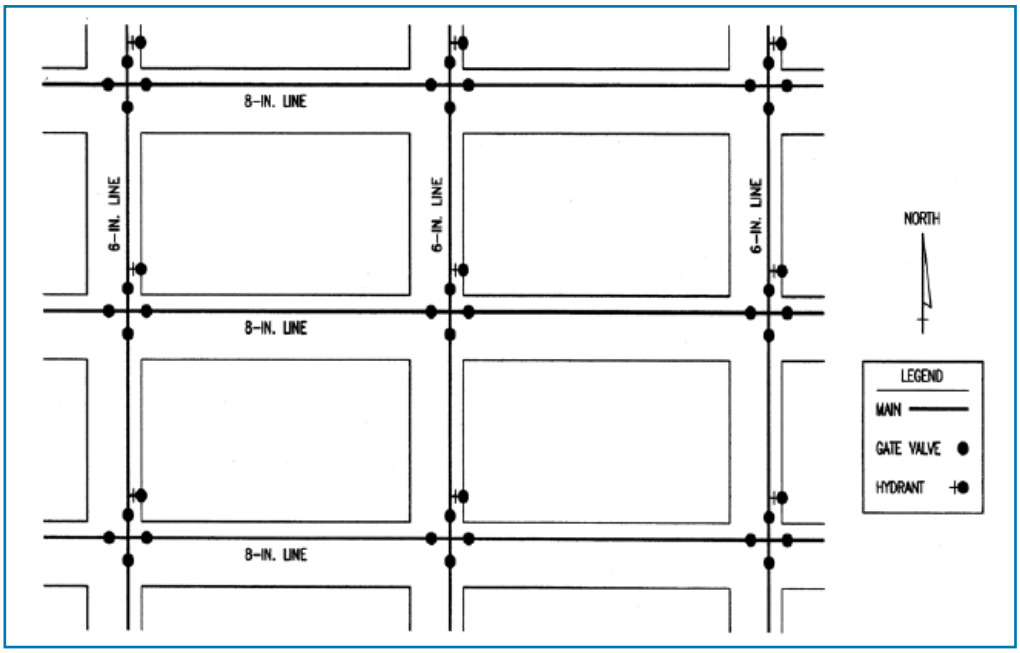

Figure 4-9: Single Main System Layout

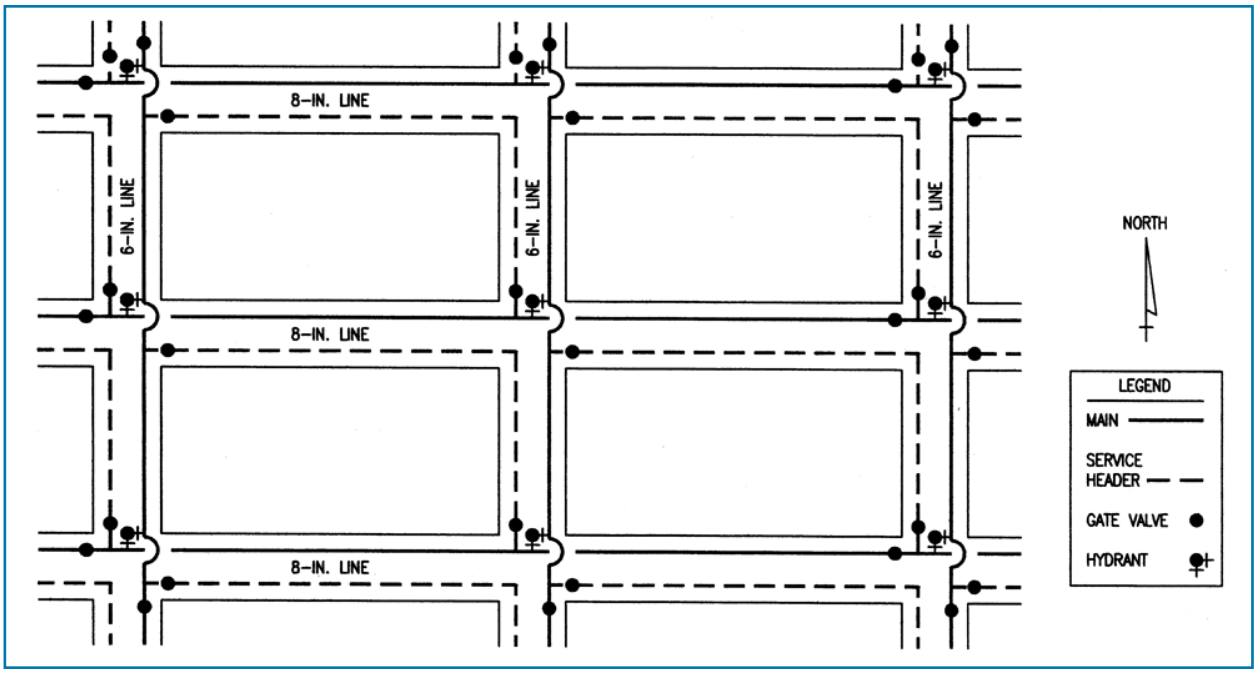

Figure 4-10: Dual Main System Layout

Table 4-1: Comparisons of Repair Procedures for Single and Dual Main Water Systems

Breakdown Points	Single Main Systems	Dual Main Systems
Fire hydrant	Close on hydrant valve.	Close to hydrant valves.
East-west mains	Close four valves on main. This dead-ends supply to one hydrant and cuts out intermediate service taps. It also dead-ends supply to eastern intersections.	Close two valves on main and one valve on each of the connected hydrants and service headers. Hydrants and service headers remain in commission. House service taps on mains are placed out of commission. Service headers are dead-ended.
North-south mains	Close two valves on main. One hydrant and intermediate house taps are placed out of commission.	Same as east-west main

The described network of pipes throughout all but the outlying sections of a community may consist of single mains or dual mains as presented in **Figure 4-9** and **Figure 4-10**.

The AWWA generally installs valves on a community water system on mains in the following recommended manner:

- four at crosses;
- three at tees; and
- one on each hydrant branch lines.

This is done in order to facilitate sectionalizing the water system for repairs and cleaning of the water units. In dual main systems, service headers are added on the south and west side of the streets, and piping is generally placed between the street curb and the sidewalks. In a scheme suggested by Ballou, valves are installed in the following manner: (2)

- one on each main at intervals of two blocks;
- one at the intersection of the service header; and
- one on each end of hydrant branches that are more than 10 feet long.

Service operations and conditions in breakdowns and cleaning can then be compared, as was shown in **Table 4-1**.

The hydraulic advantages of dual main systems over single main systems depend more or less on local conditions, because service headers generally do not contribute to flow outside their own area. More importantly, if broken, piping in dual main systems will not impair the usefulness of hydrants or create dead-end mains.

The dual main systems frequently will compare favorably in cost with single main systems. The advantages are that repairs can be made and new services laid without interfering with traffic or damaging the pavement, repairs can be made at lower costs, leakage usually is reduced, since service lines (which are liable to have heavy leakage) are reduced in length, and service pipes need not be laid where the main passes vacant lots, thereby reducing idle investment and minimizing resident time of water in the mains. Minimum use service mains are the common source of serious water system leaks.

Distribution piping should be sized to meet design flow as determined hydraulic analysis on water system flow gradients. The minimum size of water mains, for providing fire protection and serving fire hydrants, is 6 inches in diameter. Larger size mains will be necessary to achieve required fire flow and maintain residual pressure specified for both domestic consumption of fire flow. The piping must meet the minimum standards specified in **Table 4-2**.

Table 4-2: Minimum Standards for Distribution Piping

Appurtenance	Minimum Standard
Pipe Lines:	
Smallest pipe lines in the network	6 inches
Smallest branching pipes that are dead ends	8 inches
Largest spacing of a 6 or 8 inch grid	600 feet
Smallest pipes in the high value district	8 inches
Smallest pipes on principal streets in the central business or commercial district or business property complexes	12 inches
Largest spacing of primary and secondary feeders	3,000 feet
Valves:	
Spacing in single and dual main systems	
Largest spacing on long branches	800 feet
Largest spacing in commercial and high value districts	500 feet

Hydrant Locations

All built-upon areas of a community should be served by a water distribution system that not only provides taps for consumer consumption, but also provides approved fire hydrants for installation at locations and with spacing considerations for convenient use by fire department pumping equipment and

to meet needed fire flows in the proximity of the buildings to be protected. In North America there are two basic methods for the distribution of fire hydrants in a community. The first method is commonly used in Canada. It is mentioned briefly here because the method has been used in some of the northern States that border Canada. This method is fully described in *Water Supply for Public Fire Protection, A Guide to Recommended Practices*. (8)

The second method is a linear method document in the ISO's *Fire Suppression Rating Schedule* that is used to establish Public Protection Classifications (PPCs) using a scale of 1 to 10, with 1 representing the best possible classification and a 10 indicating no recognized fire protection for establishing insurance rates. While the classification system is somewhat complex, the lower or better the Class number, the lower the property fire insurance rates. In other words, a community classed as an 8 would be expected to pay much higher fire insurance premiums than a community that has a Class 4 rating. The community water supply evaluation accounts for 40 percent of the entire evaluation. The distribution and location of fire hydrants, based on needed fire flows for commercial buildings, is an important part of this evaluation. (4)

The needed location of fire hydrants in a community according to the Grading Schedule criteria can be briefly summarized as follows: The ISO evaluation procedures examines a number of representative locations throughout a community based on the population of the community; the number of installed fire hydrants on the water system; and property types, which include commercial, industrial, and residential properties along with educational facilities, public buildings, such as courthouses, libraries, hospitals, and all other places of public assembly. Buildings upon land areas within a community that do not have a fire hydrant within 1,000 feet of a structure also are evaluated. For a fire hydrant to be credited in the community survey, it must be within 1,000 feet of the property to be protected. Flow tests are conducted to determine that each fire hydrant delivers a minimum of 250 gpm at 20 psi residual pressure for a duration of 2 hours. Installed fire hydrants that do not have this capability receive no credit for insurance rating purposes although they may be used for limited fire suppression capability.

Of importance is that the fire hydrant spacing in a community is also evaluated. For individual property evaluations, the following maximum gpm flow is limited by the hydrant spacing from the risk site. Measurement is made according to the distance that a fire hoseline has to be laid to the fire risk building.

- 1,000 gpm may be credited for a fire hydrant within 300 feet.
- 670 gpm for fire hydrants from 301 to 600 feet.
- 250 gpm for fire hydrants from 601 to 1,000 feet.

Additional spacing criteria may be adopted by local building codes and/or the governmental authority having jurisdiction over a specific building. Commercial buildings that are protected by approved automatic sprinkler systems may have special requirements by individual insurance companies for fire hydrant locations that may be used to reinforce the water supply volume and pressure by fire department pumpers to control and extinguish interior fires. Municipal officials need to call these special needs to the attention of community property protected by automatic sprinkler systems.

In addition to the above provisions, it is a recommended practice that the maximum lineal distance between fire hydrants along streets in congested areas and high fire risk areas with frame buildings and/or high combustible storage (such as lumber), be located 300 feet apart and a maximum of 600 feet, in light residential areas with building separations of **over** 50 feet. Other good practices for the installation of fire hydrants calls for at least one fire hydrant at every street intersection, in the middle of long blocks (especially where the needed fire flow exceeds 1,300 gpm), and near the end of long dead-end streams.

Hydrants should be required within large complexes that are accessible to fire department apparatus equipped with mobile pumps.

A key consideration: It is essential that the planning of fire hydrant locations be a ***cooperative*** *effort between the community water department, the fire department, the building and zoning department, and with the insurance carrier for large commercial and industrial complexes. The proper location of the fire hydrants definitely can have a positive impact on property fire insurance rates.*

Installation of Fire Hydrants

The proper installation of fire hydrants on municipal water systems has to give consideration the construction features of the fire hydrant. (10) These include, but are not limited to the following features for providing adequate and reliable water supplies for fire protection.

- The nominal diameter of the bottom valve opening needs to be at least 4 inches for supplying two 2-1/2-inch outlets. However, it is recommended that at least one large diameter outlet be provided for the connection hose to a mobile fire department pumper. Today, it is generally recommended that the bottom valve be a minimum of 6 inches.
- The net area of the hydrant barrel and foot piece at the smallest part is not to be less then 120 percent of that of the net opening of the main valve.
- A sufficient waterway through the fire hydrant needs to be provided to minimize friction loss in the fire hydrant. The hydrant designed should not permit more that 5 psi loss from the main valve intake to the discharge side of the fire hydrant with design flows of no less then 1000 gallons per minute. This information is obtained from the Underwriters Laboratories, Inc. (UL) listing.
- A positive-operating, corrosion-resistant drain or drip valve is to be provided.
- A uniform sized pentagonal operating nut measuring 1-1/2 inch from point to the flat at the base and 2-7/16 inches at the top. The faces should be tapered uniformly and not less than 1 inch.

Fire hydrant bonnets, barrels, and foot piece are generally made of cast iron with internal working parts of bronze. Valve facings should be of a suitable, yielding material such as rubber or a composition material. Fire hydrants are available a number of different configurations, which should be adapted to the installation location.

Types of Fire Hydrants

Two types of fire hydrants are generally in use today. The most common is the base valve or dry barrel, in which the assembly controlling the water supply from municipal water system pipes is below the frost line between the foot valve or "piece" and the barrel of the fire hydrant. This common type of fire hydrant is illustrated in **Figure 4-11.** The barrel on this type of fire hydrant is normally dry, with water being admitted only when there is a fire or when the hydrant is flow tested; other uses of this fire hydrant are discouraged. A drain valve at the base of the barrel is open when the main valve is closed, thus allowing residual water in the barrel of the hydrant to drain out. This type of fire hydrant needs to be installed whenever there is a chance the temperature will go below freezing, because the valve assembly and water supply are installed below the frost line determined from climatic conditions.

The second type of basic fire hydrant is the wet-barrel type which is normally limited to the southern and western States where protracted *freezing* is most unlikely; temperatures inside the hydrant barrel must remain above freezing at all times. This type of fire hydrant usually has a compression valve at each outlet, but they may have another valve in the bonnet that controls the water flow to each of the hose outlets. This type of fire hydrant is illustrated in **Figure 4-12.**

In the side Figure, a base valve, or a dry barrel is illustrated with nomenclature identified. When installed, the valve is below the frost line. This type of fire hydrant also is known as a "frost-proof" fire hydrant. (Source: *Mueller Company*)

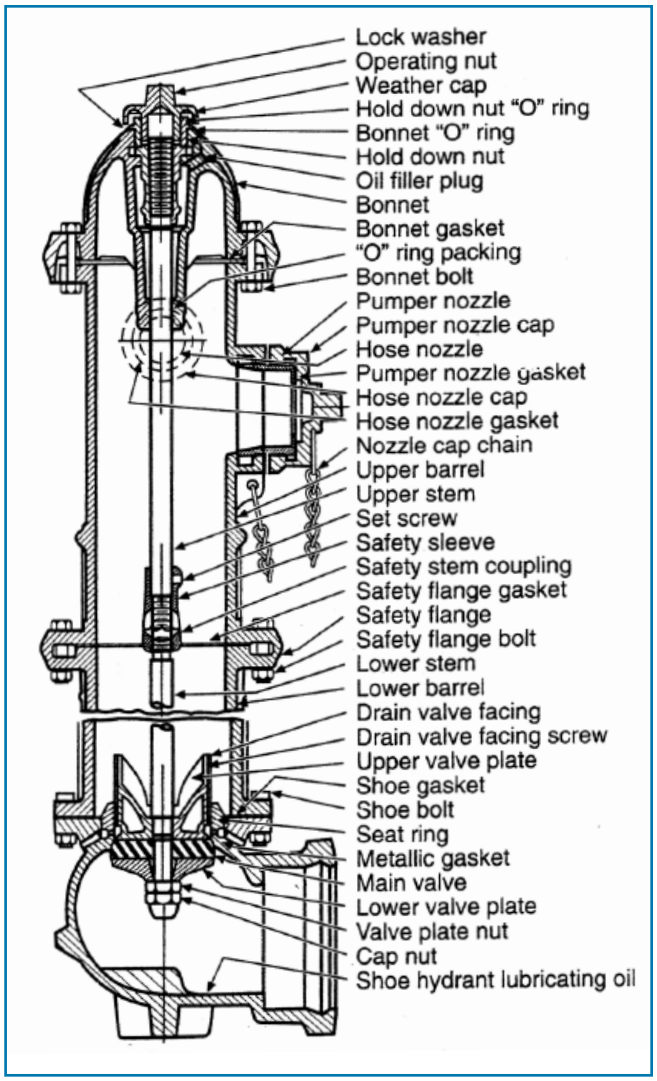

Figure 4-11:
Dry Barrel Fire Hydrant

Installation Positioning

The following guidelines have been prepared by the International Fire Service Training Association. (11)

1) The large-diameter outlet on a fire hydrant, normally 4 inches to 6 inches, should be positioned perpendicular to the curb line on streets or to the edge of the roadway where a fire department can connect hose from the fire hydrant to the intake of the mobile fire pump.
2) The maximum connection distance between the large-diameter outlet on a fire hydrant and the intake connection on a mobile pumper should not exceed 15 feet; less than 10 feet is preferable except for special situations such as parking lots and parking garages.

   The responsible fire department should be consulted on special fire hydrant installation problems.
3) There should be no obstructions within 10 feet of any installed fire hydrant. Such obstructions generally include traffic standards, sign posts, utility poles, trees, shrubbery, and fences.

   A *wet-barrel* or California-type fire hydrant maybe used where freezing temperatures are not encountered. There is a compression valve at each outlet. (Sources: Mueller Company)
4) The clearance between the bottom *of any* hydrant capped outlet to the ground level or hard surface levels is not to be less than 18 inches. To provide for connecting different types of hose fittings to the fire hydrant.
5) All fire hydrants needs to be painted a bright color and that color maintained for visibility by approaching fire apparatus from all directions.

Installation Drainage

Drainage is necessary for fire hydrant equipped with drain ports, and can be provided by excavating a pit about 2 feet in diameter and 2 feet below the base of the fire hydrant and filling it compactly with course gravel or stones placed around the bowl of the fire hydrant to a level 6 inches above the waste opening. If the drip valve of the hydrant is below ground water level, it maybe plugged to exclude ground water. In this case, water should be pumped out to prevent freezing. This same procedure should be followed for

older installed fire hydrants not equipped with drain features and that have been install for many years. (10)

General Maintenance of Fire Hydrants

A major item of periodic maintenance recommended on a quarterly schedule is a check for any external damage to each fire hydrant and a check for leaks in the fire hydrant mechanism that include 1) the main valve assembly when the fire hydrant is closed, 2) the drip valve when the main valve is open but outlet are capped, and 3) the mains the supply each fire hydrant. Stethoscope-like listening devices are available to make these checks.

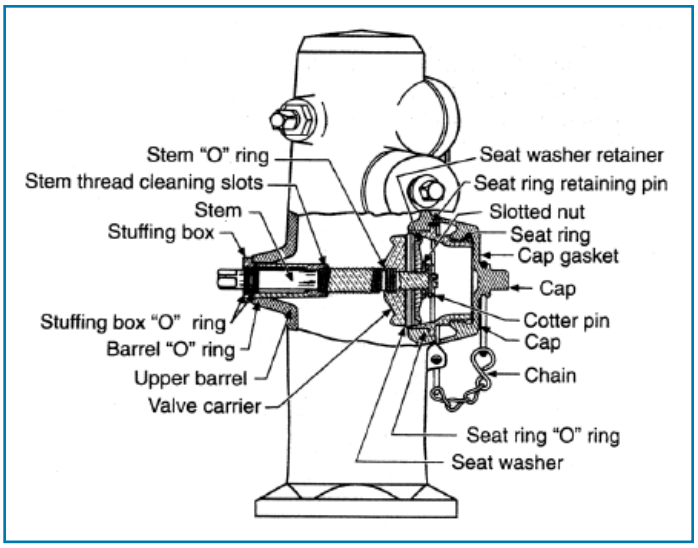

Figure 4-12: Wet Barrel Fire Hydrant

Maintenance routines provide for an operating test, repair of any leaks, and pumping out of fire hydrants where necessary. Threads of the outlet, caps, and the valve steam should be lubricated with graphite. Hydrants should be kept painted on a scheduled basis for proper location during an emergency, but care should be taken to avoid accumulation of paint that might prevent easy removal of caps or operation of valve stems. (10)

System Evaluation and Design

The designing and evaluating of community water supply distribution systems has to consider the amount of water for the commercial interests, governmental property, educational facilities, and all classifications of residential property as presented above in a general relationship to average and maximum daily consumption demand. At any time of the day, the day of the week, or the week of a given year, a structure fire or other fire emergency such as transportation vehicle fires or, in some cases, natural cover fires may erupt. Water is the primary agent of choice to confine, control, and extinguish structural fires. Some new development in fire extinguishing agents may be used for rapid knockdown of a fire, but a well-developed structure fire still requires established needed fire flows from fire hydrants to control and extinguish developing fires. Each community needs to evaluate and design or modify the design of the community water system to meet present-day needs to address future demands based on growth of the built area and population increases, along with the need to meet EPA criteria for water quality, as discussed in Chapter 3. This will be an ever-increasing demand and challenge for *every* community water distribution system.

Some specific guidelines on consumer consumption requirements and needed fire flows, are established by the ISO, which represents in excess of 130 property and casualty underwriters in the United States in developing advisory insurance rates. The following topics address some fundamental information on understanding 1) water system demands, 2) determining design flow, and the very important topic of 3) water storage on a community water system. This should provide community leaders, municipal officials, fire department officials, water supply superintendents, and consulting engineers on water systems, a common knowledge base so that they all can sit at the same table and have a meaningful dialog about the present and future state of a specific water system and even how it may relate to adjacent water supplies in nearby community water systems.

1) **Water system demands:** Water demands need to be assessed on the basis of the following considerations:

   a) The year and date the water supply system was commissioned or started supplying water through the distribution system. Hopefully, there is a water supply system map that will detail where pipes were laid, the size of the pipes, the pipe material, the location of the valves, the location, size and type of fire hydrants along with the lateral size and valving arrangements.

   b) These water maps need to show all extension and changes to the water system covering the same topics as above.

   A clear and accurate knowledge of the water system in place is needed before discussing changes to be made to existing systems. If this is to be a new community water system, all of these details should be laid out on a proposed street map for evaluation. If an Engineering Firm uses different criteria, it should conform to the most current publications of the AWWA, the National Fire Protection Association (NFPA), the ISO, the Civil Engineering Handbook, and any special State or county regulations.

   There should be no oversight in considering both short-term and long-term goals. The primary objective is to make sure that the community is being serviced adequately. If there are deficiencies in meeting current or future goals because of economic constraints, this needs to be identified for the areas of the community where there may be inadequate flows to meet consumer consumption during peak water demand, so that constraints such as watering lawns and washing cars, can be placed on water usage. If available fire flows do not meet needed fire flows in specific districts of the community, the fire department needs to know these conditions on virtually a real-time basis. The local fire department may need to plan on relaying water from larger supply mains to fire sites using large-diameter hose or the existing water supply may need to be augmented by an alternative water supply using mobile takers from adjacent fire departments under automatic-aid and mutual-aid arrangements. Another alternative is to provide retention ponds in the community to capture runoff. Retention ponds may be outfitted with dry hydrants as a supplementary water supply for fire protection.

   [Sidebar: Refer to Chapter 6 for further discussion of Alternative Water Supplies.]

2) **Planning water demand changes:** Special planning is needed when new water demands will be placed on a specific community water system. This point cannot be overstressed. The amount of construction performed and the amount of construction that realistically can be accomplished to provide adequate service are dependent on when the construction will be needed. Ultimately, final development should be consistent with the utility's ability to provide consumer consumption and fire protection at the same time. Fire protection must not lag behind supplying domestic taps, as often occurs in new residential areas of communities. The planning and installation phase should assure that water supply for fire protection is *never* interrupted. There have been too many large-loss structure fires because the water system was shut down in the vicinity of the fire site.

   The ideal way to develop a water distribution system would be to construct a distribution network of pipe that would adequately serve the short-range and long-range development of the service area. Individual construction projects, developments, subdivisions, and industrial complexes then could be developed without checking for adjustments to ensure that the original design plans remain adequate for all projected consumer consumption and fire protection demand. However, in reality, the best of plans needs to be adaptable to change measures where growth, moves, and demand may decline in older portions of a community. Therefore, the design for the source, through the treatment plant to the distribution system, must provide for growth and change in the delivery demand points. The best water system is the one that is designed with a vision for the future. Existing water systems have to be

evaluated and redesigned with a future perspective that includes a rehabilitation and/or replacement of existing system components due to the age factor. The maintenance of old infrastructures may be more expensive than the replacement with a better designed system that will meet both the future needs of water quality and distribution system demand.

The bottom line is that a water supply system cannot remain constant. It is the responsibility of elected officials, water supply superintendents and their staff, hydrologist, geologists, professional civil engineers, rural and urban planners as appropriate, fire officials and fire protection engineers, and representatives from the insurance industry to sit at the table and plan water systems for the future with due consideration to all of the regulations and requirements that are being placed on water systems at this time and in the future, especially as programmed by the EPA. The cost to do this is not going to be any small thing, so the financial planning is just as important as the physical planning.

It is now recommended that every 3 to 5 years, as a minimum, existing water distribution systems be evaluated thoroughly for requirements that would be placed on it by development and reconstruction for a 20-year period into the future. A plan then should be developed for meeting those needs. In this way, individual improvements and projects can be evaluated and made to conform, generally, to long-term development and contingency plans for such events as serious system interruptions caused by natural disasters and terrorism attacks without undue additional expense to either the developer or the utility.

Basic Concepts in Determining Design Flow at System Demand Points

The first step in evaluating or designing a water delivery system is to determine design flows for all of the representative built-upon regions of the community and the community expansion plans. The fundamentals of calculating water system design flow are as follows:

1) Determine the average daily demand.

   [Sidebar: See Chapter 5 for guidance on determining flow demands by areas of the community.]

2) Determine the maximum daily demand or estimate it from the average daily demand.
3) Determine the maximum hourly demand from consumption records or for new areas of the community, estimate from the average daily rate.
4) Determine the ISO needed fire flow that is discussed in Chapter 5. Actually, two methods of determining fire flow are presented for evaluation but only the ISO method is used for establishing PPCs advisory insurance rates used by most property and casualty underwriters.
5) Determine the required flow for sprinkler system requirements plus a supplemental allowance for fire streams if a commercial property is protected by an automatic sprinkler system.
6) Select an appropriate design flow for the community water system. This is the greater of the following two conditions: either the sum of the required fire flow for the most stringent situation which, not considering property protected by automatic sprinklers, plus the maximum daily consumption demand; or the maximum hourly demand, whichever is greater.

The community water supply planning group must exercise good judgment based on the facts at this point. The following example makes this point very clear. It relates to communities that have manufacturing plants or seasonal agricultural processing and canning plants.

In this example, the property in question is identified as a manufacturing facility that uses large amounts of water for only 8 hours during one shift per day, 5 days a week. With relatively little domestic use, the maximum hourly demand would be in excess of what the water supply committee would expect from normal projection data and examining the average daily demand. In this case, the water system serving

the facility should be designed to provide the required flow plus the maximum hourly flow. It would be costly and essentially irresponsible to consider treating a fire at this facility on the basis of an average daily demand that has no real meaning in the particular context. Furthermore, commercial properties that have a high peak demand for short periods of time should work with the community to provide private water storage to meet these peak periods. This could save major water treatment costs and pipe design costs to transport water to these specific demand points that have an infrequent need for the supply.

It is very important to design and evaluate a given water system using the design flow as generally determined by the above considerations so as to ensure the adequacy and reliability of the system. Therefore, it is essential that all of the issues relating to water system adequacy and reliability as presented under **Water Supply Concepts and Evaluation Methods** be considered carefully when considering the future design of a new or existing community water system.

Distribution System Storage

Finished water placed in storage within the framework of a community water system, may just be one of the most important aspects of achieving optimal performance, reliability, and cost effectiveness in water system design. It should be understood that water storage facilities have a far-reaching effect on a water systems ability to provide needed fire flows when the fire cannot be immediately extinguished by the first arriving fire company. The two common methods of storing water on a water distribution system are discussed below under:

- ground level storage; and
- elevated storage.

There are relative merits to both types of storage. Prior to examining these two common types of water storage, preliminary considerations need to be examined on the basic purpose of water storage.

Functions of water system distribution system storage: Storage capacity within the framework of a distribution system enables the system to process water at a time when a treatment facility would be unable to meet the systems demands or when the treatment facility is idle. Stored water provides the possibility to distribute the treated or finished water to one or more locations in the service areas that provides the best flow and pressure to the end user.

1) **Advantages:** The principle advantages of water distribution storage include the fact that storage equalized demands on supply sources, water treatment facilities, plus the transmission and distribution mans. As a result, the sizes or capacities of these elements need not be as large as would be required if storage was not provided. Additionally, system flows and pressure can be improved and balanced or stabilized to better serve both consumer and required fire flows throughout the service area. Finally, reserve supplies are provided in the distribution system for other emergencies such as power outages and breaks in the water distribution system.
2) **Storage as a function of meeting system demands and required fire flows:** The location, capacity, and evaluation, if required, of distribution system storage are considerations that are closely associated with system demands and the variation in demands that occur throughout the day in different parts of the system. System demand can be determined only after careful analysis of an entire distribution system by professional engineers in cooperation with local authorities and the water supply planning committee as identified above. However, there are some general rules that may serve as a guide to such an analysis. **Table 4-3** lists daily and hourly variation for a typical city and the resulting treated water storage depletion.

Table 4-3: Water Use and Storage Depletion for Maximum Day in a Typical City

Hour	Ratio of Hourly Demand Rate to Maximum Day Demand Rate*	Hourly Variation in Distribution Storage Reserve Mil Gallons	Cumulative Storage Depletion Mil Gallons
7–8 a.m.	1.00	-0.00	0.00
8–9	1.10	-0.10	0.10
9–10	1.25	-0.25	1.35
10–11	1.28	-0.28	0.63
11–12	1.20	-0.20	0.83
12–1 p.m.	1.18	-0.18	1.01
1–2	1.16	-0.16	1.17
2–3	1.10	-0.10	1.27
3–4	1.00	-0.00	1.27
4–5	1.08	-0.08	1.35
5–6	1.15	-0.15	1.50
6–7	1.30	-0.30	1.80
7–8	1.60	-0.60	2.40
8–9	1.40	-0.40	2.80
9–10	1.25	-0.25	3.05#
10–11	0.90	+0.10	2.95
11–12	0.85	+0.15	2.80
12–1 a.m.	0.70	+0.30	2.50
1–2	0.60	+0.40	2.10
2–3	0.50	+0.50	1.60
3–4	0.50	+0.50	1.10
4–5	0.50	+0.50	0.60
5–6	0.60	+0.40	0.40
6–7	0.80	+0.20	0.20

* Average day—16 million gallons; Maximum day—25 million gallons; constant hourly supply rate (at maximum day demand rate), 24 million gallons per day or 1 million gallons per hour.

\# Maximum storage depletion.

Of course, each water system has its own requirements. Furthermore, it should be recognized that only in rare cases can distribution storage be justified economically in an amount greater than what will take care of normal daily variation and provide the needed reserve for fire protection and minor emergencies. In systems of moderate size, the amount of water storage available for equalizing water production is 30 percent to 40 percent of the total storage available for water pressure equalization purposes and emergency water supply reserves. In normal system operations, some water from storage should be used each day not only to maintain uniformity in production and pumping, but also to ensure circulation of the stored water for purposes of maintaining water quality. The best economical arrangement for the storage of water for delivery to the distribution system is to bring all storage to full capacity at night when there is minimal domestic consumption and then increase as needed when storage capacity drops to between 40 percent and 50 percent at each storage point location during the day. In the event of a working structural fire in a

community at any time of day or night, pump capacity should be brought on line to compensate for the fire flow being used.

Normally, it is more advantageous to provide several smaller storage units in different parts of the system than it is to provide equivalent capacity at a central location. Small pipelines are required to serve decentralized storage, and other things being equal, a lower flow-line evaluation and pumping head result.

Elevated and Ground Storage

Storage within the distribution system is normally provided in one of two ways:

1) Elevated storage.
2) Ground-level storage with high service pumping.

It should be recognized that elevated storage provides the best, most reliable, and most useful form of water storage, particularly for fire suppression requirements.

Ground-level storage: Since water kept in ground storage is not under pressure, it must be delivered to the water demand points by pumping equipment. This arrangement especially limits water system effectiveness for fire protection in three ways:

1) There must be sufficient excess pumping capacity to deliver the peak consumer consumption demand use as well as any fire demand which requires unnecessary investment in pumping capacity, **or** if the pumping capacity is deficient to meet this demand, it could adversely impact on the ISO PPC which drives fire insurance rates in the community.
2) Standby power sources and standby pumping systems must be maintained at **all times** because the system cannot function without the pumps.
3) The distribution lines to all points in the distribution system must be significantly oversized to handle peak demand use, plus required fire flow, no matter where a fire could occur in the community.

However, in hilly areas it is frequently possible to install ground-level reservoirs at a sufficient elevation so that the water would "float" on the distribution system. This may eliminate the need for pumps at the ground-storage facility or reserve pumps only for high demand periods. If the desired overflow elevation can be achieved on a hill, a considerably larger storage capacity can be installed when compared to an elevated tank. This may result in placement of the storage facility on a hill in a less desirable location and then use transmission mains down to the primary feeder pipes. Such placement would provide larger storage capacity than could be achieved by an elevated tank(s) or it would provide the equivalent storage more economically.

Where ground storage is used in areas with high fire risk, buildings with flows of 1,000 gpm or more, the energy would be needed to deliver the water that is lost on the initial delivery of water to the water system. The water must be repumped and repressurized with the consequence of additional or more standby generators and more standby pumps to provide fire flow adequacy. In addition, the system's high-service pumps must be either variable speed or controlled by discharge valves to maintain constant system pressures. This equipment is expensive, uses additional electric power, and requires extensive operation and maintenance. Frequently, the additional capital costs for pumps, generators, and back-up systems, and the long-term energy costs significantly increase the costs of a ground storage system.

Elevated storage: Properly sized elevated water tanks provide dedicated fire storage and are used to maintain constant system pressure.

Domestic water supplies are fed regularly to the system from the top 1 to 15 feet of water in elevated tanks. As the water level in the tank drops, the tank controls call for additional high-service pumps to start in order to satisfy the system demand and refill the tanks. The high-service pumps are constant-speed units, which can be operated at their highest efficiency point virtually all of the time. The remaining water in the tanks, which is roughly 70 percent to 75 percent capacity, normally is held in reserve as dedicated fire storage. This reserve will feed the system automatically as the fire flow demand and the domestic use demand at a specific time exceed the capacity of the system's high-service pumps.

Pumping for distribution storage: The two types of distribution storage, ground and elevated, have in turn, two types of pumping systems. One is a direct pumping system, in which the instantaneous system demand is met by pumping, with no elevated storage provided. The second type is an indirect pumping system in which the pumping station lifts water to a reservoir or elevated storage tank, which floats on the system and provides system pressure by gravity. Basic details on each type of system are presented below:

- Direct pumping: This system relates to older water systems and, with the exception of small communities, is generally very rare today, but some do exist. Variable-speed pumping units that operate off direct pressure are also in use in some medium sized communities. Hydropneumatic tanks at that pumping station provide some storage. These tanks permit the pumping station pumps to start and stop, based on a variable system pressure preset by controls operating off the tank.
- Indirect pumping: In an indirect pumping system, the pumping station with one or more pumps is not associated with the demands of the major load center on the water system. It is operated from the water level difference in the service or elevated storage cent(s), enabling the prescribed water level in the tank to be maintained. The majority of water systems today have an elevated storage tank or reservoir (or both) on high ground, floating on the water distribution system. This arrangement permits the pumping station to operate at a uniform rate, with the storage either making up or absorbing the difference between station discharge and system demand.

Analysis of storage: Two variations of distribution storage design affect the operation and reliability of a water system's capability to meet consumer consumption and fire suppression capabilities. These variations involve placement of the storage between the supply point and the major load center or beyond the major load center. An analysis of the following storage designs will be made in the remainder of this chapter:

- System A: a pumping station supplying the major center of the demand (load) with no elevated storage;
- System B: a pumping station supplying the major center with an elevated storage tank between the supply and the demand (load) point; and
- System C: a pumping station supplying the major center of demand with an elevated storage tank beyond the demand (load) point.

System Criteria

- Normal minimum working pressure in the distribution system should be approximately 50 psi and not less than 35 psi during a maximum hour. A normal working pressure in most systems will vary between 50 and 56 psi.
- System must be designed to maintain a minimum pressure of 20 psi at ground level at all fire hydrants on the distribution system under required fire flow conditions.
- Maximum day demand is 1.5 times the average daily demand.
- Maximum hour demand is 2.25 times the average daily demand.

Components of the Model System

The model system used in the analysis of the three systems (i.e., A, B, and C) has the following characteristics:

- population = 27,000;
- water demand rules:
  - Average Daily Consumption (ADC) = 27,000 × 150 gpcd = 4.0 mgd,
  - Maximum Daily Consumption (MDC) = 4.0 × 1.5 = 6.0 mgd, and
  - Maximum Hour Consumption (MHC) = 6.0 × 1.5 = 9.0 mgd;
- needed fire flow (NFF):
  - Maximum NFF is 5,000 gpm = 7.2 mgd, and
  - Maximum Day Rate plus NFF: 6.0 + 7.2 = 13.2 mgd; and
- pressure profile:
  - Minimum pressure at the major load center = 50 psi, and
  - Minimum pressure on the maximum day plus fire flow = 20 psi

Special Note: System pipelines are all expressed as equivalent lengths of 24-inch pipe with a C factor of 120. The hydraulic gradient is the slope of the line joining the elevations to which water would rise in pipes freely vented and under atmospheric pressure.

System A: No storage: If no storage is provided in System A, as depicted in **Figure 4-13**, at a given demand rate, the pumping station hydraulic gradient must be sufficient to overcome system losses at a demand rate and maintain a minimum of 115 feet at the major load center. Thus, the pumping heads required maintaining 115 feet plus the head loss in 40,000 feet of equivalent pipe for the various conditions as follows:

Demand Rates		Pumping Head Required
Average day, 4.0 mgd:	115 + (0.67 × 40)	= 142 ft.
Maximum day, 6.0 mgd:	115 + (1.42 × 40)	= 172 ft.
Maximum hour, 9.0 mgd:	80 + (3.0 × 40)	= 200 ft.
Maximum day + NFF, 13.2 mgd:	46 + (6.1 × 40)	= 290 ft.

System B: Storage ahead of the load center: If, as shown in **Figure 4-12**, a 1.0-million-gallon storage tank is located 130 feet above datum plane and at a distance of 35,000 feet from the pump station (5,000 feet ahead of the major load center), the pumping head of a given pumping rate must be sufficient to pump against a head at the storage tank and overcome system losses at the pumping rate.

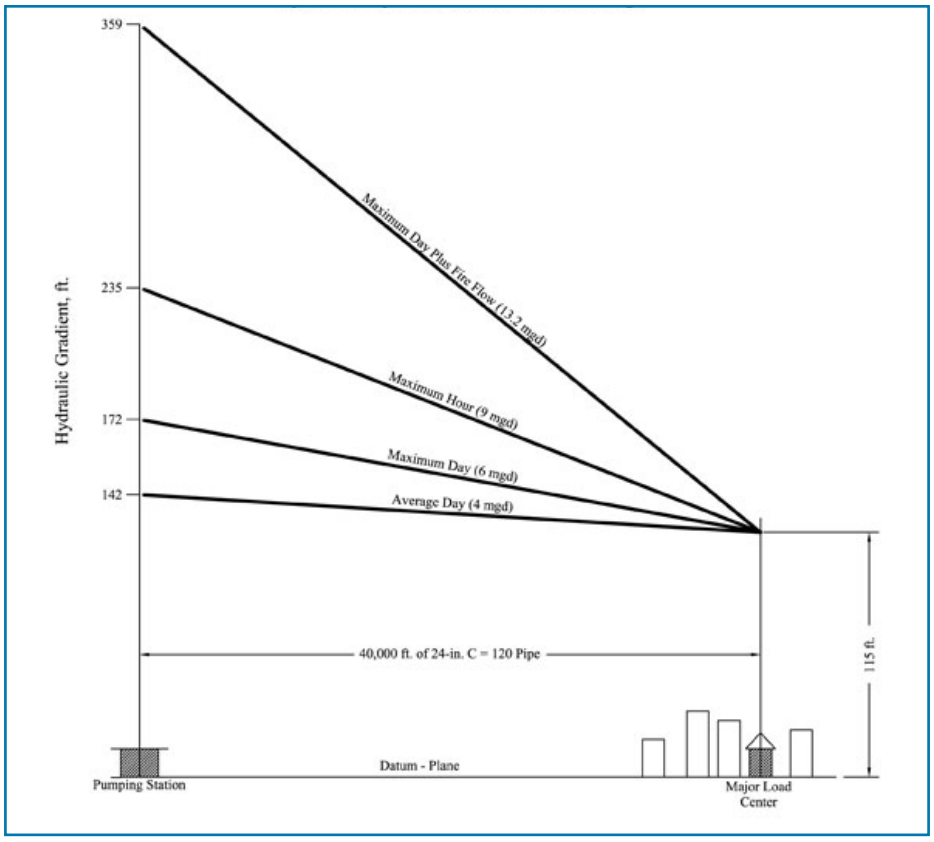

Figure 4-13: System A—Hydraulic Gradient with no Storage

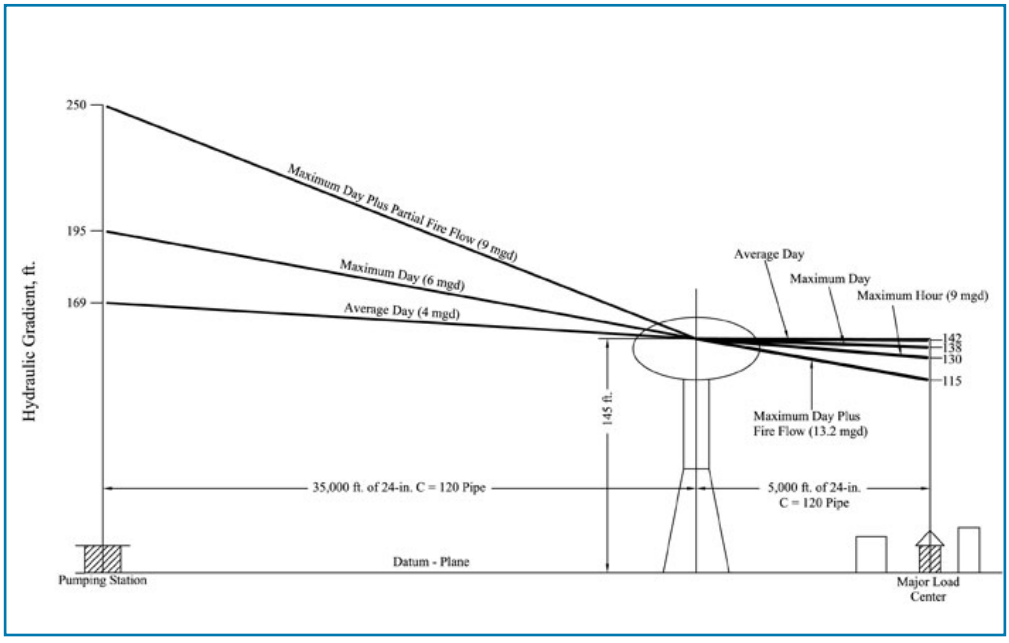

Figure 4-14: System B—Hydraulic Gradients with Storage Between Pump Station and the Load Center

Average day demand: At the average day demand, the required pumping rate with no water taken from storage is 4.0 mgd. The pumping head required is equal to the hydraulic gradient at the tank, plus the head loss in 35,000 feet of equivalent pipe at 4.0 mgd, or 130 + (0.67 × 35) = 153 feet. The hydraulic gradient at the load center is the hydraulic gradient at the tank, minus the head loss in 5,000 feet of equivalent pipe or 130—(0.67 × 5) = 127 feet.

Maximum day demand: At the maximum day demand, the required pumping rate is 6 mgd with no water taken from storage. The pumping head required is equal to the hydraulic gradient at the tank, plus the head loss in 35,000 feet of equivalent pipe at 6.0 mgd or 130 + (1.42 × 35) = 195 feet. The hydraulic gradient at the load center is the hydraulic gradient at the tank, minus the head loss in 5,000 feet of equivalent pipe at 6.0 mgd or 130—(1.42 × 5) = 123 feet.

Maximum hour demand: At the maximum hour demand, the flow at the load center must be 9 mgd and the pressure should be no lower than 35 psi or 80 feet. The pumping head required is equal to the hydraulic gradient at the tank, plus the head loss in 35,000 feet of equivalent pipe at the chosen pumping rate. If 1.0 mgd is to be supplied from the tank storage and the remaining 8 mgd is to be supplied from pumping, the pumping head required is 130 + (2.41 × 35) = 214 feet as depicted in **Figure 4-14**.

Maximum day rate plus needed fire flow: At the maximum day rate plus the fire demand, the flow to load center must be at a 13.3 mgd rate at a minimum pressure of 20 psi or 46 feet. If 1 mgd is supplied from storage, the pump station would have to pump the remaining 12.2 mgd, and the pumping head required is then equal to the hydraulic gradient at the tank plus the head loss in 35,000 feet of equivalent pipe at 12.2 mgd or 100 + (5.2 × 35) = 282 feet.

Demand Rates	Theoretical Pumping Head Required
Average day rate, 4.0 mgd: no water from storage	= 153 ft.
Maximum day rate, 6.0 mgd: no water from storage	= 180 ft.
Maximum hour rate, 9.0 mgd: 8.0 mgd rate from pump(s) and 1.0 mgd rate from storage	= 214 ft.
Maximum day rate plus fire flow, 13.2 mgd: 12.2 mgd rate from the pumps plus 1.0 mgd rate from storage	= 282 ft.

System C: Storage beyond load center: In the arrangement shown in **Figure 4-15**, 1.0 million gallons of storage is provided 5,000 feet beyond the load center, or 45,000 feet from the pump station, at an elevation of 119 feet above the datum plane. When no waste is being taken from storage at a given demand rate, the pumping head must be sufficient to pump against the head at the tank and overcome losses between the pump station and the load center at that demand rate. When part of the demand is being supplied from storage, the pumping head needs only to be sufficient to pump against the head at the load center and overcome losses in the pipeline between the pump station and the load center.

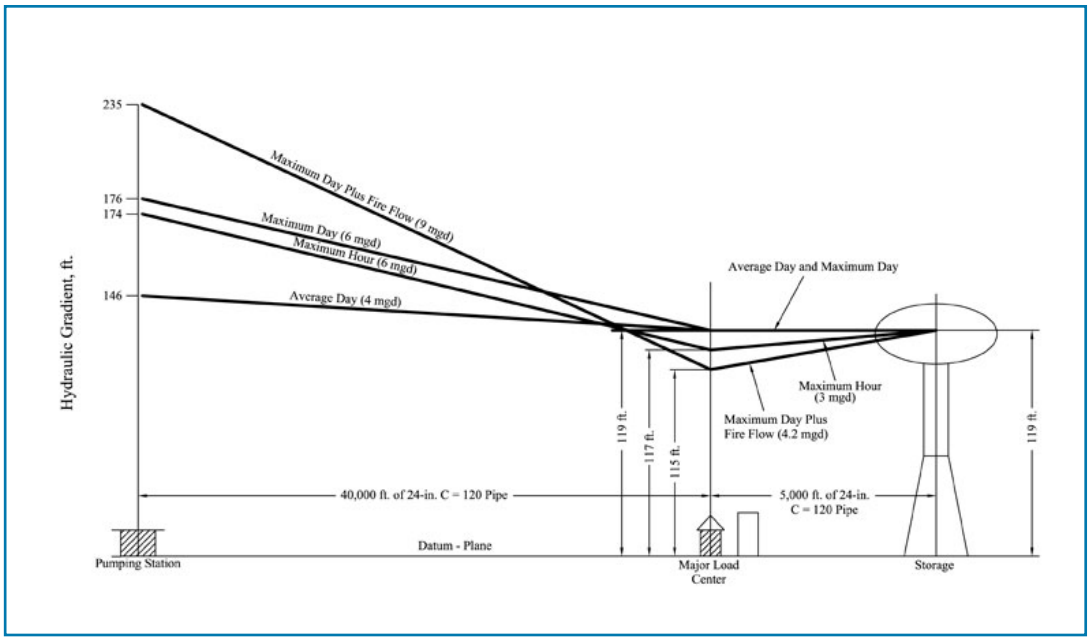

Figure 4-15: System C—Hydraulic Gradients with Storage Beyond the Load Center

Average day demand: At the average day demand, the required pumping rate is 4.0 mgd with no water taken from storage. The pumping head required is equal to the hydraulic gradient at the tank, plus the head loss in 40,000 feet of equivalent pipe or 119 + (0.67 × 40) = 146 feet. The hydraulic gradient at the load center is thus identified as that at the tank, or 119 feet.

Maximum day demand: At the maximum day demand, the required pumping rate is 6.0 mgd with no water taken from storage. The pumping head required is equal to the hydraulic gradient at the tank, plus the head loss in 40,000 feet of equivalent pipe at 6.0 mgd, or 119 + (1.42 × 40) = 176 feet. The hydraulic gradient at the load center is thus identified as that at the tank, or 119 feet.

Maximum hour demand: For a maximum hour demand which in the example is 9.0 mgd, the working pressure can be lowered to 35 psi or 80 feet of head. The storage tank could supply water at a rate of 700 gpm or 1.0 mgd during the hour and the remaining 8.0 mgd would be supplied from pumping. They hydraulic gradient at the load center is the hydraulic gradient at the tank, minus the head loss in the 5,000 feet of pipe between the tank and the load center at the storage discharge rate of 1.0 mgd, or 119—(0.05 × 5) = approximately 119 feet. The pumping head required is equal to the hydraulic gradient at the load center plus the head loss in 40,000 feet of equivalent pipe at 8.0 mgd, which is 119 + (2.41 × 40) = 215 feet.

Maximum day rate plus needed fire flow: The pressure at the load center can be lowered to 20 psi or 46 feet during a fire. Assuming the storage tank is full (1.0 mgd) this flow can move from the tank to the load center at 2,800 gpm or a 4.0 mgd rate. Thus, the remainder of the demand, which is 9.0 mgd, must be supplied by pumping. The pumping head required is equal to the hydraulic gradient at the load center or 46 feet plus the head loss in 40,000 feet of equivalent pipe, or 46 + (3 × 40) = 166 feet of head.

Demand Rates	Theoretical Pumping Head Required
Average Day Rate, 4.0 mgd: no water from storage	= 146 ft.
Maximum Day Rate, 6.0 mgd: no water from storage	= 176 ft.
Maximum Hour Rate, 9.0 mgd: 8.0 mgd rate from pump(s) and 1.0 mgd rate from tank storage	= 215ft.
Maximum Day Rate plus Fire Flow, 13.2 mgd: 9.2 mgd rate from the pumps plus 4.0 mgd rate from tank storage	= 166 ft.

Comparison of System Examples

The Comparison of System A with System C: If no storage is provided, 124 feet (290 feet—166 feet) more pumping head is required to furnish the maximum day demand plus fire flow than if adequate storage is provided beyond the load center. With the increased pumping rates required with no storage, the power needed is approximately 1,100 hp, as contrasted to 495 hp with the storage (more than twice as much). Similarly, furnishing the maximum hour demand without storage would require 500 hp, as opposed to 245 hp, still more than twice as much.

The capacities of the pumps required under these two conditions would be 13.2 mgd at 359 feet of head, as contrasted to 9.0 mgd at 235 feet of head, as opposed to 6.0 mgd at 174 feet of head. During average and maximum day demands, the pumping head at the source is approximately the same.

Comparison of System B with System C: In comparing storage located between the source and the load center with storage located beyond the load center, the example illustrates that pumping heads at the pumps are substantially lower under all conditions if the load center is located in the pumping station and the elevated storage.

Recommended Practice on Water Storage

The AWWA's *Manual of Water Supply Practices* (M-31) states that the recommended design is to have the major load center located between the pumping station and an elevated storage tank of sufficient capacity. This system is the most cost-effective design from a capital cost and operating cost standpoint. All those individuals that are involved in the planning, designing, and evaluating community water systems need to keep this concept in mind. It is not a rule but it is a good practical guide.

References:

1. American Water Works Association. *Manual on Water Supply Practices*, AWWA M-31, 1992 Ed. American Water Works Association, 6666 West Quincy Ave., Denver, CO 80235.
2. _____. *Distribution Operator Training Handbook*, 1996 Ed. American Water Works Association, 6666 West Quincy Ave., Denver, CO 80235.
3. Cote, A.E., and J.L. Linville, eds. *Fire Protection Handbook*, 16th ed. Quincy: National Fire Protection Association, 1986.
4. Fair, F.M., et al. *Water and Wastewater Engineering*. New York: John Wiley and Sons, Inc., 1966.
5. Steel, E.W., and T.G. McGhee. *Water Supply and Sewage*. New York: McGraw-Hill Book Co., 1989.
6. *Recommended Standards for Water Works, Great Lakes*. Upper Mississippi River Board of State Sanitary Engineers. Health Education Services. New York: New York State Health Department, Albany, 1987.
7. Ballou, A.F. "Hydrant Connections and Control of Dual Mains." *Journal NREWWA*, 52:81 (1938).
8. *Water Supply for Public Fire Protection, A Guide to Recommended Practice*. Toronto, Ontario: Fire Underwriters Survey, 1981.
9. Insurance Services Office. *Fire Suppression Rating Schedule*, 2003 Ed. Office of Natural Hazards Mitigation, ISO Building, 545 Washington Blvd., Jersey City, NJ 07310-1686.
10. National Fire Protection Association. *Fire Protection Handbook*, 18th ed. Quincy: author, 1997, pg. 6-40.
11. International Fire Service Training Association. *Water Suppliers for Fire Protection*, 3rd ed. IFSTA 205, p. 45.

CHAPTER 5: Consumer Consumption and Needed Fire Flow

The previous chapters have stressed the fact that community water systems need to provide an adequate and reliable source of treated water for consumer consumption and commercial use. In addition, water has to be made available for structural fire suppression and for other emergencies, such as hazardous material incidents, transportation vehicle fires, natural cover fuel fires, within a community that expose a community and water supplies for installed fire suppression systems, including automatic sprinkler systems. Because of economic considerations associated with the water system infrastructure, all but the very largest cities have water systems that provide one water system for consumer consumption and fire protection. As reflected in Chapter 4, water demand needs to be provided during all periods of each day, day of the week, and week of the year for consumer use plus the capability to meet required fire flows when a serious fire erupts in a community. The question now to be answered is how much water is needed for domestic consumption and how much is required to meet needed fire flows at representative locations throughout a community such as commercial, industrial, and residential areas. This chapter provides guidelines estimating water supply needs.

The basic question to be answered by a community water planning board or commission is "how much water will our system be required to deliver and to where, both today and in the future?" The answer to this question will require the acquisition of basic information about the community, including historical water usage, population trends, planned growth, topography, and existing system capabilities, to name just a few. This information can then be used to plan for the logical extension of the existing system and to determine needed improvement to provide sufficient water supply at demand pressures throughout the community.

Water Demands

The first consideration of a water distribution system is the determination of the quantity of water that will be required, with provision for the estimated requirements for the future.

In terms of total quantity for domestic consumption, the water demand in a community usually is estimated on the basis of per capita demand. According to a study published by the U.S. Geological Survey, the average was estimated to be about 105 gallons per day per capita in 1990. However, by the year 2000, the AWWA estimated the per capita use was 140 gallons per day. Water demand has been demonstrated to vary rather significantly by State as reflected in the referenced 1990 study. This is illustrated in **Table 5-1**.

Table 5-1: Estimated Use of Water in the United States in 1990

State	Gallons per Capita per Day
Alabama	150
Alaska	106
Arizona	147
Arkansas	145
California	70
Colorado	78
Connecticut	179
Delaware	111
District of Columbia	115
Florida	119
Georgia	186
Hawaii	90
Idaho	76
Illinois	66
Indiana	86
Iowa	70
Kansas	124
Kentucky	58
Louisiana	105
Maine	66
Maryland	77
Massachusetts	148
Michigan	123
Minnesota	86
Mississippi	129
Missouri	115
Montana	213
Nebraska	71
Nevada	75
New Hampshire	135
New Jersey	119*
New Mexico	67
New York	86
North Carolina	50
North Dakota	85
Ohio	100
Oklahoma	79
Oregon	111
Pennsylvania	62

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State	Gallons per Capita per Day
Rhode Island	67
South Carolina	76
South Dakota	81
Tennessee	85
Texas	143
Utah	218
Vermont	80
Virginia	75
Washington	138
West Virginia	74
Wisconsin	52
Wyoming	163
Puerto Rico	48
Virgin Islands	23
United States Total Average	**105**

*Excluding New York City

Ref.: Mays, Larry W. Water Distribution Systems Handbook. New York: McGraw-Hill, 1999.

The water usage shown above illustrates a wide variation. Per capita use varies from a low use in Maine of 58 gallons per day capita to Utah with 218 gallons per day per capita. These variations depend on geographical location, climate, size of the community, extent of industrialization, and other influencing factors unique to most communities. Because of these variations, the only reliable way to estimate future water demand is to study each community separately, determining existing water use characteristics and extrapolating future water demand using population trends.

In terms of how the total water use is distributed within a community throughout the day, perhaps the best indicator is land use. In a metered community, the best way to determine water demand by land use is to examine actual water usage for the various types of land uses. The goal of examining actual water usage is to develop water "duties" for the various types of land uses that can be used for future planning. Water duties are normally developed for the following land uses:

- Single-family residential—Some communities have low, medium, and high density zones.
- Multifamily residential.
- Commercial—Normally divided according to office and retail categories with a separate category for shopping plazas.
- Industrial—Normally divided into light and heavy categories and separate categories for high-end users.
- Public buildings—Normally include courthouses, libraries, post office, police stations and jails, community and senior centers, fire stations, fire training areas, and elementary or high schools.
- Public property—Normally includes parks, grassed areas that are watered, swimming pools, etc.
- Special properties—Normally includes Federal and State buildings, colleges and universities, local airports, and any other properties not identified above.

Water duties normally are expressed either by specific establishments or in gallons per acre per day. It may be wise to conduct parallel studies to examine any differentials for the community at large. Differences can be examined by specific land usage.

Table 5-2 presents water use for many different establishments. Although the rates may vary widely, they are useful in estimating total water use for individual users when no other data are available.

Table 5-2: Typical Rates of Water Use for Various Establishments

User	Range of Flow Gallons per Person on Units per Day
Airport, per passenger	3–5
Assembly hall	2–3
Bowling alley, per alley	16–26
Camp	
Pioneer type	21–32
Children's w/central toilet and bath	42–53
Day, no meals	42–53
Luxury w/private bath	79–106
Labor	37–53
Trailer w/private toilet and bath per night	132–159
Country clubs	
Residential type	79–159
Transient type serving meals	16–26
Dwelling unit, residential	
Apartment house on individual well	79–106
Apartment House on public water supply	79–132
Note: higher if unmetered	
Boarding house	40–58
Hotel	53–106
Lodging house and tourist home	32–53
Motel	106–159
Private dwelling on an individual well	53–159
Note: use same values for metered supply	
Private dwelling on a nonmetered public water supply	106–211
Factory, sanitary wastes, per shift	40–100
Fairground (based on daily attendance)	1–2
Institution	
Average type	106–159
Hospital	185–317
Office space	11–16
Park and recreational facilities w/flush toilets	5–11

continued on next page

User	Range of Flow Gallons per Person on Units per Day
Restaurants w/toilet facilities	
Average	7–11
Kitchen waste only	3–5
Short order	3–5
Bar and cocktail lounge	2–3
24 hour seating facilities, per seat	42–58
Tavern per seat	16–26
Schools	
Day w/cafeteria and lunchroom	11–16
Day w/cafeteria and showers	16–21
Boarding	53–106
Self-serviced laundry, per machine	264–793
Store	
Mercantile w/25 feet of frontage	423–528
Each additional 25 feet of frontage	370–423
Swimming pool and bench w/toilet and shower	11–16
Theater	
Indoor, per seat, 2 showings per day	3–5
Outdoor, per car, including food stand	3–5

Ref.: Mays, Larry W. *Water Distribution Systems Handbook*. New York: McGraw-Hill, 1999.

Table 5-3: Typical Water Duties

Land Use	Water Duty (gal/day) (gal/day/acre)		
	Low	High	Average
Low-density residential	400	3,300	1,670
Medium-density residential	900	3,800	2,610
High-density residential	2,300	12,000	4,160
Single-family residential	1,300	2,900	2,300
Multifamily residential	1,100	6,600	4,160
Office–Commercial	1,100	5,100	2,030
Retail–Commercial	1,100	5,100	2,040
Light–Industrial	200	4,700	1,620
Heavy–Industrial	200	3,100	2,270
Parks	400	3,100	2,020
Schools	400	2,500	1,700

Ref.: Adapted from Montgomery Watson Study of Date of 28 Western U.S. Cities.

A Suitable Approach for Studying Consumer Use Water Demand

A large-scale community map is needed. The actual scale has to be determined by the typical distance between street intersections in a community. Identify the class of properties along both sides of the street between intersection streets, or to dead ends or where a street leaves the corporation line. Using the guidelines from **Tables 5-2** and **5-3**, estimate the gallon per day rate along street fronts or use contiguous blocks to form a square or rectangle with approximately 43,000 square feet which is generally equivalent to an acre. Plot this information on the street map and sum the gallons of water required for the community for normal daily consumption.

Fire Suppression Water Demand

Criteria for establishing needed fire flows: an adequate amount of water is essential for confining, controlling, and extinguishing hostile fires in structures. The actual amount of water needed differs throughout a community due to different building and occupant conditions. Therefore, water demand for structural fire protection has to be determined at a number of different locations throughout a given community or fire protection district established at the local or county level of government in the United States.

The ISO evaluates the fire suppression capabilities of communities according to 10 classifications of service. These classifications are conducted as part of the fire and property insurance rating system for over 130 insurance companies writing this type of insurance in the United States. Three protection features are evaluated, and a percent of credit is assigned to each feature as follows:

1) Fire Department	50 percent
2) Water Supply	40 percent
3) Receiving and Handling Fire Alarms	10 percent
Total	100 percent

The weight given to water supply stresses the need for an adequate water supply for structural fire suppression. The water supply evaluation considers the ability of the water system to meet consumer consumption plus fire flow under average and maximum daily conditions. Approaches to evaluating a municipal water system are presented in a companion document titled *Evaluating Municipal Water Supply System*. The following material is restricted to the determination of needed fire flows at representative locations throughout the community. These locations are selected by the ISO to represent both typical and special fire risks including commercial, mercantile, industrial, institutional, and residential properties for insurance rating purposes.

Needed fire flow is the amount of water considered necessary to control a major developing fire in a specific building. The amount of water needed is expressed in gpm at 20 psi residual pressure for a duration ranging from 2 to 4 hours. The minimum needed fire flow for any single building is 500 gpm for 2 hours. The maximum needed fire flow is 12,000 gpm for 4 hours.

Needed fire flow at selected sites throughout a given community is intended as one measure used to compare and contrast available fire flow to a specification fire flow. Studies conducted by insurance industry over many years shows a high statistical correlation between the amount of water actually used to confine, control, and extinguish a dingle building fire and the amount of water determined form the application of the needed fire flow analysis. It is important to recognize that a fire that spreads beyond the

building or origin requires larger amounts of water for longer periods of time. The ISO Fire Suppression Rating Schedule (FSRS or Grading Schedule) provides one analytical method for determining capability to suppress a developing fire in representative buildings throughout a given community.

Water supply studies further indicate it is unusual for an existing water distribution system to provide sufficient volume and pressure to meet every SFF. However, in designing a new water supply and distribution system or expansion to an existing system, or improvements to components of an existing water supply, pipe network and hydrant installation, plans should consider water delivery rates and pressure profiles to provide needed fire flow at specific locations throughout a community as determined by the ISO. Upon request, the ISO can provide a listing of needed fire flows at representative locations for a given community. (1) In meeting fire flow objectives, a water supply system should be capable of delivering the maximum needed fire flow within the built-upon area served by the water system.

Basic Needed Fire Flow Formula: A needed fire flow for an individual building is computed from the formula below: (2)

$$\mathbf{NFF}i = (\mathbf{C}i) \times (\mathbf{O}i) \times [1 + \mathbf{P}i]$$

The calculation of needed fire flow, in gallons per minute (gpm), for a subject building, considers the construction (C*i*), occupancy (O*i*), exposure (X*i*), and communication (P*i*) factors of that building or fire division as outlined below.

- **Construction factor (C*i*):** This portion of the needed fire flow attributed to the type of construction and square footage of the subject building is determined by the following formula from the ISO Grading Schedule.

  C*i* = 18F (A*i*) (0.5) where:

  F = coefficient related to the class of construction as follows:

  F = 1.5 for construction Class 1 (frame)

  F = 1.0 for construction Class 2 (brick-joist or joisted masonry)

  F = 0.8 for construction Class 3 (noncombustible) and construction Class 4 (masonry—noncombustible)

  F = 0.6 for construction Class 5 (modified fire resistive) and construction Class 6 (full fire resistive)

  A*i* = effective area (the total square foot of the largest floor in the building plus the following percentage of other floors:

  – For buildings of construction Class 1 to 4: 50 percent of all other floors

  – For buildings of construction Class 5 and 6: if all vertical openings in the building have 1 to 1-1/2 hour or more protection, 25 percent of the area, not exceeding the two largest floors. The doors shall be automatic or self-closing and labeled as class B fire doors. In other buildings, 50 percent of the area, not exceeding eight floors.

[Sidebar: ISO has additional explanatory information on calculating the effective area. There is no need to know this information, since ISO will provide such details on any specific building upon request. The intent of discussing this formula is to make the reader aware of the factors that influence the needed fire flow calculation process.]

The maximum value of C*i* is limited to the following:

- 8,000 gpm for construction Class 1 and 2
- 6,000 gpm for construction Class 3 to 6
- 6,000 gpm for a one-story building of any class of construction

The minimum value of C*i* is 500 gpm. The calculated value of C*i* should be rounded to the nearest 250 gpm.

- **Occupancy factor (O*i*):** given in **Table 5-4**, reflects the influence of the occupancy in the subject building on the needed fire flow. Representative lists of occupancies by combustibility class are given in **Figures 5-1** and **5-2**.
- **Exposures (X*i*) and communications (P*i*) factors:** The exposures and communications factors reflect the influence of exposed and communicating building on the needed fire flow. A value for (X*i* + P*i*) shall be developed for each side of the subject building as follows:

$$(X + P)i = 1.0 + \sum_{i=1}^{n} (Xi + Pi), \text{ maximum } 1.75$$

where: n = number of sides of subject building

The factor for X*i* (exposure) depends on the construction and length-height value (length of wall in feet times height in stories) of the exposed building and the distance between facing walls of the subject building and the exposed building. This factor shall be selected from **Table 5-5**.

The factor for P*i* (communications) depends on the protection for communicating party wall openings and the length and construction of communications between fire divisions. The factor shall be selected from **Table 5-6**. When more then one communications type exists in any one side wall, apply only the largest P*i* for that side. When there is no communication on a side, P*i* = 0.

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Classification 1

Steel or concrete products storage, unpackaged

Classification 2

Apartments
Churches
Court houses
Dormitories
Hospitals
Hotels
Motels
Offices
Parking garages
Schools

Classification 3

Amusement park buildings, including arcades and game rooms
Automobile sales and services
Department stores
Discount stores
Food and beverage—sales, service, or storage
General merchandise—sales or storage
Hardware, including electrical fixtures and supplies
Motion picture theaters
Pharmaceutical retail—sales and storage
Repair or service shops
Supermarkets
Unoccupied buildings

Classification 4

Aircraft hangers—with or without servicing/repair
Auditoriums
Building material—sales and storage
Freight depots, terminals
Furniture—new or secondhand
Paper and paper product—sales and storage
Printing shops and allied industries
Theaters—other than motion picture
Warehouses
Wood product—sales and storage

Classification 5

Chemical sales and storage
Cleaning and dying material—sales and storage
Paint—sales and storage
Plastic or plastic product—sales and storage
Rag sales and storage
Upholstering shops
Waste and reclaimed material—sales and storage

Figure 5-1: Typical Occupancy Classifications— Nonmanufacturing

Classification 2

Ceramics manufacturing
Concrete or cinder products manufacturing
Fabrication of metal products
Primary metals industries

Classification 3

Baking and confectionery
Dairy processing
Leather processing
Soft drink bottling
Tobacco processing

Classification 4

Apparel manufacturing
Breweries
Cotton gins
Food processing
Metal coating and finishing
Paper product manufacturing
Rubber product manufacturing
Woodworking industries

Classification 5

Cereal and flour mills
Chemical manufacturing
Distilleries
Fabrication of textile products (except wearing apparel)
Meat or poultry processing
Plastic products manufacturing
Textile manufacturing

Figure 5-2: Typical Occupancy Classifications—Manufacturing

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Table 5-5: Factor for Exposure (Xi)

Construction of Facing Wall of Subject Bldg.	Distance to Exposed Bldg.	Length-Height* of Facing Wall of Exposed Bldg.	Construction of Facing Wall of Exposed Building: Construction Classes 1,3	2,4,5,6 Unprotected Openings	2,4,5,6 Semiprotected Openings (wire glass or outside open Sprinklers)	2,4,5,6 Blank Wall
			Exposure Factor X*i*			
Frame, metal, or masonry, w/ openings	0–10 ft	1-100	0.22	0.21	0.16	0
		101–200	0.23	0.22	0.17	0
		201–300	0.24	0.23	0.18	0
		301–400	0.25	0.24	0.19	0
		Over 400	0.25	0.25	0.20	0
	11–30 ft	1–100	0.17	0.15	0.11	0
		101–200	0.18	0.16	0.12	0
		201–300	0.19	0.18	0.14	0
		301–400	0.20	0.19	0.15	0
		Over 400	0.20	0.19	0.15	0
	31–60 ft	1–100	0.12	0.10	0.07	0
		101–200	0.13	0.11	0.08	0
		201–300	0.14	0.13	0.10	0
		301–400	0.15	0.14	0.11	0
		Over 400	0.15	0.15	0.12	0
	61–100 ft	1–100	0.08	0.06	0.04	0
		101–200	0.08	0.07	0.05	0
		201–300	0.09	0.08	0.06	0
		301–400	0.10	0.09	0.07	0
		Over 400	0.10	0.10	0.08	0
Blank masonry wall	When facing wall of the exposed building is higher than subject building, use the above information, except use only the length-height of facing wall of the exposed building above the height of the facing wall of the subject building. Buildings five stories or over in height, consider as five stories. When the height of the facing wall of the exposed building is the same or lower than the height of the facing wall of the subject building, X*i* = 0.					

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Table 5-6: Factor for Communications (P*i*)*

	Fire-Resistive, Non-Combustible or Slow-Burning Communications				Communications with Combustible Construction					
	Open	Enclosed			Open			Enclosed		
Protection of Passageway Openings	Any Length	10 ft. or less	11 to 20 ft.	21 to 50 ft.	10 ft. or less	11 to 20 ft.	21 to 50 ft.	10 ft. or less	11 to 20 ft.	21 to 50 ft.
Unprotected	0		0.30	0.20	0.30	0.20	0.10			0.30
Single Class A (fire door at one end of passageway)	0	0.20	0.10	0	0.20	0.15	0	0.30	0.20	0.10
Single Class B (fire door at one end of passageway)	0	0.30	0.20	0.10	0.25	0.20	0.10	0.35	0.25	0.15
Single Class A (fire door at each end or double class A fire doors at one end of passageway)	0	0	0	0	0	0	0	0	0	0
Single Class B (fire door at each end or double class B fire doors at one end of passageway)	0	0.10	0.05	0	0	0	0	0.15	0.10	0

Source: *Copyright, ISO Commercial Risk Services, Inc., 1980.*

Notes: 1. The reader should refer to the 1980 Fire Suppression Rating Schedule, published by ISO Commercial Risk Services, New York (1980), for complete information regarding factors for communication.

2. When a party wall has communicating openings protected by a single automatic or self-closing class B fire door, it qualifies as a division wall for reduction of area.

3. Where communications are protected by a recognized water curtain, the value of P*i* is 0.

* The factor for P*i* depends on the protection for communicating party wall openings and the length and construction of communications between fire divisions. P*i* shall be selected from this table. When more than one communication type exists in any one side wall, apply only the largest factor P*i* for that side. When there is no communication on a side, P*i* = 0. (Party wall means a division wall rated 1 hour or more with labeled class B fire doors on openings.)

For over 50 ft, P*i* = 0

For unprotected passageways of this length, consider the two buildings as a single fire division.

Special Notes on the Determination of Needed fire flows

1) When a wood-shingle roof covering on a building or on exposed buildings can contribute to spreading fires, add 500 gpm to the needed fire flow.
2) The needed fire flow shall not exceed 12,000 gpm nor be less than 500 gpm.
3) The needed fire flow shall be rounded to the nearest 250 gpm if less than 2,500 gpm, and to the nearest 500 gpm if greater than 2,500 gpm.
4) For one- and- two family dwellings not exceeding two stories in height, the needed fire flow listed in **Table 5-7** shall be used.

Table 5-7: Needed fire flow for One-and Two- Family Dwellings*

Distance Between Buildings Feet	Needed fire flow gpm
Over 100	500
31–100	750
11–30	1,000
Less than 11	1,500

*Dwellings not to exceed two stories in height.

[Side bar: Many communities today are allowing contractors in subdivisions to build one family homes 20 feet apart. Note that this would require a needed fire flow of 1,000 gpm for all residential areas with this separation distance because of the identified exposure problem.]

5) The water supply for buildings protected by automatic sprinkler systems that are in compliance with the NFPA Standard 13 and inspected semiannually are "coded" as sprinkler buildings for fire insurance rating purposes. The water demand requirement for these buildings is determined from the stated NFPA standard including the allowance for hose steams where required.

References:

1. American Water Works Association. *Distribution System Requirements for Fire Protection*, M-31. American Water Works Association, 6666 West Quincy Ave., Denver, CO 80235.
2. Insurance Services Office. *Fire Suppression Rating Schedule*, 2003 Ed. Insurance Services Office, Office of Natural Hazards Mitigation, ISO Building, 545 Washington Blvd., Jersey City, NJ 07310-1686.

CHAPTER 6: Alternative Water Supplies

People living in local communities generally assume that there is a water supply system that will meet their domestic needs, and that there will be water available from fire hydrants to fight building fires. (1) Concurrently, people living outside incorporated areas and in rural areas do not generally expect to have water mains that supply residential and commercial property. Water supply for structural firefighting was limited to that carried on the first alarm response to a given fire site. Water supply for the urban landscape and the rural landscape was pretty well divided until the late 1970's. Today's suburban and rural growth patterns are making this dichotomy on water supply very fuzzy.

The grow pattern of homes, schools, and commercial property outside of incorporated villages, towns, and cities requires a new understanding of water supply for consumer consumption, the adequacy and reliability of developed water supplies for both consumer consumption and fire protection. These newly built-upon land areas may have one of the following arrangements for meeting water supply needs:

- Each occupied building is supplied by well water on the owner's land site; there are no water mains or public fire hydrants. This method of water supply applies to single family dwellings, schools, small commercial property such as a convenience store, etc.
- Both commercial and housing developers may take a tract of land and sell building lots. The developer also may be the builder, or there may be several contractors available for building on the individual lots. Generally there is a small water system to meet the domestic consumption needs. The underground piping may be 2-inch to 3-inch pipe along street fronts, and taps are made on these lines to feed each home or small business. The water supply is typically from wells that is treated and pumped into to a ground-level or elevated storage tank to flow by gravity on demand through the pipe lines. The size of the water mains is inadequate to supply water for fire protection.
- The above description of land development may be modified in the following way. The developer plans that "someday" the growing community will be large enough to require a higher yield water source, and the associated need for a water treatment plant. These kinds of development often are planned to be located near a river, fresh water lake, or a good flow stream where a low-level dam can be erected to form a holding basin or reservoir of water for the water system. Recognizing this potential need, a decision is made to install fire hydrants in the development to save installation costs in the future. These hydrants then will be connected to 6-inch or larger pipe that will be laid in the same trench as the domestic piping system. The futuristic drawings and plans look good on paper. However, the installation of the fire hydrants may not follow the plan. There are several document cases where the installed fire hydrants are fed by the domestic system, the small-diameter pipe. When questioned about this practice, the response is often that the fire hydrants are used to water the green areas, trees, and to keeps the streets clean. However, this gives a false sense of security for the property owners where this practice is in place. The water supply simply is inadequate for fire protection, and it may be inadequate for these adjunct services in the community.

All of these noted water supply arrangements are of much interest and concern to property and casualty insurance companies that write insurance policies with coverage for fire loss. The ISO represents over 160 companies in the United States that write homeowners and commercial property fire insurance policies and packaged insurance policies that cover fire loss. In an ISO 2005 publication on *Effective Fire Protection—A National Concern*, there is startling information on the lack of community water supplies in fire districts across the country. For insurance rating purposes, the ISO has identified 48,515 fire districts or insurance-graded areas in the United States. Each area is evaluated by the ISO for fire suppression effectiveness using criteria developed for three needed fire protection services: 1) Receiving and Handling Fire Alarms, 2) Fire Department, and 3) Water Supply. Water supply accounts for 40 percent of the total evaluation. A *Grading Evaluation* conducted by ISO Field Representatives results in establishing a community or fire district PPC on a Scale of 1 to 10. Out of all the fire districts in the Nation, there are only 52 cities, communities for fire districts (i.e., a county might be a fire district based on local government administration and management).

From a water supply perspective, it is important to identify and consider the Class 9 and Class 10 properties. Class 10 property, for insurance rating purposes, is located beyond 5 travel miles for the first-due engine company responding from an ISO-recognized fire department, and there is **no** recognized water supply. The message is that there can be no effective fire protection if there is not a sufficient fire apparatus response time and personnel to fight fires, and there is insufficient water to extinguish fires. The likelihood of a total property loss from a developing fire in a structure in Class 10 *Graded Area* is statistically high. Generally, most fire insurance carriers will not underwrite fire insurance policies where there is an ISO Classification of 10. Some insurers will write this property at a very high premium. The latest ISO studies indicates that 2.9 percent of the Nation's fire districts receive a Class 10 designation.

In contrast, a Class 9 is assigned to a *Graded Area* structural property is within 5 travel miles of the first-due fire department engine company, but there is **no** recognized water supply. The same study referred to above indicates that 32.2 percent of the Nation's fire districts receive a Class 9 designation. The bottom line is that in this classification there is reasonable response from a fire company, but the water supply to fight a fire does not meet recognized criteria for the very large majority of the insurance industry. There is a defined probability of loss reduction with Class 9 property over Class 10 property. This property group includes farmstead property; isolated homes away from a community; and vacation homes on lakes, in the mountains, or at the sea-shore, that are not near a municipal water system with fire hydrants.

It is of a major concern to realize that, by combining the Class 9 and Class 10 fire districts together, 35.1 percent of the entire Nation's fire districts do not have a recognized water supply!

Now, it is essential to define a recognized water supply by the insurance industry. The ISO *Fire Suppression Rating Schedule*, or *Grading Schedule* for short, states that the minimum recognized water supply for structural fire protection is 250 gpm for a 2-hour duration; the minimum volume of water is 30,000 gallons. However, the minimum water supply for any single structure is 500 gpm for 2 hours. Prorated credit is given if only 250 gpm is available; no credit is given if a structure is not protected by 250 gpm for 2 hours.

All of the above means that 17,029 fire districts in the United States either have no municipal water supply system, or the existing water supply system does not have the capability to supply 250 gpm for 2 hours.

So, if this manual is restricted to discussing municipal water supply systems, it leaves out over one-third of the Nation's fire districts. Therefore, it is essential to discuss alternative water supplies to meet fire protection needs. Alternative water supply methods are essential to augmenting existing municipal water supplies where the existing system cannot meet needed fire flows. Furthermore, alternative water supply methods can be used where a water supply system's service has been interrupted for whatever

reason. Some of those reasons include storm damage, power failures to pumping equipment, drought conditions where there just is no water available, and, after 9-11, the ever-present threat of terrorism or simple sabotage to a water system. Therefore, this chapter is devoted to presenting the major concepts of alternative water supplies as developed through a partnership project between the U.S. Fire Administration (USFA) and the ISO.

Alternative Water Supply Concepts

The primary objective of alternative water supplies is for fire district or ISO *Graded Areas* that do not have recognized water supplies to plan and establish a water delivery program that will deliver a minimum of 250 gpm for 2 hours to all structural property within the fire district. There are three adjunct objectives to alternative water supply programs:

1) Raise the bar and make the minimum water delivery capability to all structural property in a given fire district or *Graded Area* 500 gpm. This will significantly increase the ability of responding fire departments to confine, control, and extinguish developing fires in structures, and will improve the credit given by the ISO for water supply significantly when conducting a PPC evaluation of the *Graded Area*.
2) Use developed alternative water supply delivery programs to augment existing municipal water supplies at the site of representative fire risks where there is a deficiency in meeting needed fire flows. Many municipal water systems, especially in the small communities, cannot meet needed fire flows on dead-end water mains and near the perimeter of the water distribution system. There also may be a deficiency in the capability of a given water supply system to meet high fire flow demands in the central business district and at specific fire risks such as schools and hospitals in the community.
3) Alternative water supplies can be used for emergency water supply in case there is disruption to any part or all of a municipal water system in order to maintain fire protection capability. There is the growing potential for alternative water supplies to be used for domestic consumption capability in the case that a municipal water system is down for 1) the lack of sufficient intake water supply due to drought conditions in the area, 2) due to equipment failures for a variety of reasons including power outages, and 3) domestic water supply capability when used with portable water supply purification equipment. In this later case, the military has in place water purification equipment to change seawater into drinking water. Now, the technology is in place that uses reverse osmosis processes and new technology for membrane filtering so that mobile filtration units can take any brackish water or salt water and treat this water to EPA standards. Such a unit has been purchased by a county fire department on Long Island, New York. This technology may be important to homeland security when addressing possible terrorist threats, or to the Federal Emergency Management Agency (FEMA) when considering disasters of the magnitude of Hurricane Katrina.

Where Are Alternative Water Supplies Needed?

Alternative water supplies are needed for the fire protection structural property that is not within 1,000 feet of a recognized fire hydrant (i.e., a fire hydrant that has the demonstrated capability to delivery a *minimum* of 250 gpm for a 2-hour duration). A scaled fire district map is needed to identify structural fire risks that are beyond 1,000 feet of a recognized fire hydrant. This may require running fire-flow tests to determine the capability of fire hydrants on the perimeter of water systems especially in smaller communities.

Water Supply Officer

Fire districts or fire departments that are serious about establishing an alternative water delivery program need to appoint a Water Supply Officer to coordinate *all* activities associated with the delivery of water supplies to fire risks throughout the fire area, to augment any existing water supplies that have deficiencies in meeting needed fire flows, and to meet special emergency needs using alternative water supplies. It should be understood by the appointing fire protection organization and the area local government that this individual has the authority and responsibility to organize, implement, and maintain the alternative water supply program. Often this assignment is given to an assistant fire chief as part of the training for effective incident command.

The individual selected for the water supply officer position must be trained to have knowledge about all aspects of the alternative water supply program, and be able to communicate effectively about program elements to fire department personnel, local and State authorities, and the public at large. Typical task performance for alternative water supply officers is referenced in the USFA/ISO *User Workbook and Alternative Water Supplies* noted with the chapter References. Additional knowledge and proficiency comes from actually establishing a water delivery program and through consulting other appropriate references at the end of this chapter.

Identifying and Certifying Alternative Water Supplies

It needs to be reinforced that the ISO's *Fire Suppression Rating Schedule* documents a minimum recognized available fire flow of 250 gpm for a duration of 2 hours for structural property. This applies whether a structural fire risk is served by a municipal water supply system providing water for consumer use or not. In suburban and rural areas without water delivery from a municipal water system supplying fire hydrants, provisions need to be made by the jurisdictional fire department to *transport* water oat structural fires and other fire emergencies using fire pumpers, pumper-tankers, and mobile water tankers. To meet the minimum specified flow of 250 gpm for 2 hours or a higher flow as determined by the needed fire flow for specific fire risks, water supply sources need to be provided throughout a fire protection district or *Graded Area*.

These water supply sources are divided into two categories: 1) natural water sources and 2) developed water sources. Several subclassifications of water sources are identified under each category outlined below:

Natural Water Source Classifications	*Developed Water Source Classifications*
Ponds	Cisterns
Lakes	Rivers
Streams	Driven wells
Reservoirs	Aboveground storage tanks
Streams	Belowground storage tanks
Rivers	Elevated storage tanks
Irrigation channels	Swimming pools
	Domestic water systems

1. **Factors associated with the reliability of water sources.**
   - Natural water sources are susceptible to drought conditions in most parts of the country.
   - Ground-level water sources in rural areas may be used by farmstead property owners to feed animals and water crops.
   - Farm ponds, lakes, streams, and rivers may freeze to varying levels during periods of severe cold weather.
   - Silt and debris can accumulate in a pond, lake, or reservoir, reducing the actual volume of water available for fire while the surface level of the water source remains constant.
   - Streams and rivers may reach flood stage and overflow the retaining banks making the water source nonaccessible.
2. **Factors of accessibility.**
   - All natural water sources used for fire protection should be accessible by all-weather roads and adequately plowed during and after snowfall in snow-belt areas.
   - The planning of new dedicated ponds and small lakes for fire protection should consider placement near well-traveled roads to permit filling mobile tankers for water shuttle operations.
   - A dry hydrant location, a drafting site, or a water fill site needs a constructed pad where a mobile pumper can draft water.
   - Bridges used for water supply access require special considerations. Fire apparatus cannot park on bridges to fill mobile water tankers in several States by law because the apparatus would block traffic. In many cases, it is best to have a dry hydrant fill point away from a bridge because this will reduce the water lift height and it will remove a very heavy weight from the bridge in rural areas. Fire departments need to check with the specific State Department of Transportation and abide by he laws governing this situation.
   - Access to fire sites and water fill sites using routes with bridges, especially in rural areas, needs to be carefully evaluated. A very large number of bridges were built for farm-to-market use. Now they carry increased traffic loads with the expansion of rural and suburban growth. NFPA 1142, Standard on Water Supplies for Suburban and Rural Fire Protection states that, "the general condition of bridges in the rural areas of most states is poor." The nature and extent of the rural and suburban bridge problem makes it a serious consideration when planning alternative water supply programs. This is an especially important consideration when planning transportation routes for fully loaded mobile tankers.
   - Access to private water supplies needs to be evaluated. Fire departments should establish a water usage agreement with the owner(s) of water supplies located on private property to gain access to water sources before the occurrence of a fire. Written agreements should be made in close cooperation with the municipal town or county attorney, Furthermore, it is highly desirable that the agreement be reviewed by a representative of the highway or the county road department or other person who will build, service, and maintain the access area or road leading to the water supply; this includes persons who will perform such functions as snow plowing in specific areas of the country. The property owner should have a copy of the agreement that will be used by different fire departments with approval of their county, township or political jurisdiction.
   - Alternative water supply sources should be provided at location to service structural property. A basic guideline to follow is that mobile tanker apparatus should not have to travel more than 2

miles to reach a recognized water source for refilling the tanker. However, the number of mobile water tankers available to respond to a given fire site will affect this guideline.

- Identification of water resources is most important. The responsible water supply officer should install or cause to be installed an appropriate reflective sign at each water supply point identifying the site for fire department use and including a site number for each recognized water source. NFPA recommends that this number be 3 inches high with a 2-inch stroke.
- Water maps should be prepared with access locations. The responsible water supply office should maintain a map showing the location and amount of water available at each water site. A copy of this map should be located in the jurisdictional fire alarm office or Emergency Operations Center (EOC), and a copy should be carried in the first-due engine company in the Graded Area (i.e., pumper or pumper-tanker) that responds to areas beyond recognized fire hydrants. All area fire chiefs' vehicles and the water supply officer's emergency response vehicle also should carry a current map along with the necessary prefire plans to implement an alternative water supply delivery system throughout the fire protection jurisdiction or Graded Area of responsibility.

3. Reliability of Natural Water Supplies.

- Impounded water supplies: These supply sources consist of naturally developed ponds in low-lying areas that are accessible by all-weather roads, constructed ponds for fire protection, and small lakes that are natural or manmade with a retention dam at the outflow location. NFPA 1142, 2002 edition, states that the quantity of water considered available for natural water supplies "is the minimum available during a drought with an average 50 year frequency that has been certified by a Professional Engineer or Hydrologist, or other similar qualified person." (__)
- Flowing streams: For all flowing streams, (i.e., rivers, streams, and creeks) NFPA 1142 states, "the quantity of water to be considered is the minimum rate of flow during a drought with an average 50 year frequency as obtained by a licensed Professional Engineer, Hydrologist, Geologist or similar qualified person."

Rural Fire Protection Districts have experienced difficulty in obtaining written certification that impounded water supplies or flow streams that established impounded water supplies or flowing stream supplies meet the minimum ISO criteria of 30,000 gallons under drought conditions as specified above. The problem is twofold: 1) it appears that many professional civil engineers lack the background and experience to make such certifications. Geologist and hydrologist are more suitable for certifying natural water supplies. 2) Professionals typically charge from $300 a day and up to research natural water sources and provide professional certification; typically rural fire protection districts simply do not have this kind of money available for this purpose.

It is generally recommended that local fire protection jurisdictions contact the State or county office of soil and water conservation as an important resource in establishing alternative water supply sites, obtaining guidance on installing dry type fire hydrants at specific water supply sites, and obtaining funds for installing dry hydrants and certifying alternative water sources. Other resources for assistance resources that can be consulted for assistance on certifying ground level water supplies include

- NRCS—Natural Resources Conservation Services;
- DEC—Department of Environmental Conservation; and
- Army Corp of Engineers.

4. Developed sources of alternative water supplies.

There appears to be a growing trend in suburban and rural areas to avoid the complications and possible unreliability of static and flowing water sources by using developed sources of water supplies to meet water supply needs for fire protection. This involves providing containers for water supplies at strategic locations throughout a fire district. The storage supplies are easy to calculate, these can be readily assessed by ISO field representatives, and in the long run maybe more economically feasible. Most important reliability of each water supply is constant because the supply source is not subject to drought or their environmental conditions. Furthermore, fire protection jurisdictions do not need to have the water supply certified by a professional person. The following approaches for providing alternative water supplies can be directly evaluated by a representative of the ISO without a third party certification.

- Cisterns: Cisterns are typically installed below ground water storage tanks constructed of reinforced concrete equipped with a dry hydrant. **Figure 6-1** shows a cutaway view of a cistern documented in NFPA 1142. (__) This same reference provides guides to cistern specifications, construction protection against freezing, inspection, maintenance, and topping off the water supply.
- Fiberglass underground storage tanks: The Xerxes Corporation manufactures fiberglass reinforced plastic (FRP) tanks that offer an important option for the underground storage of water. The features and benefits include
  - rustproof, long lasting fiberglass;
  - internal rib design for added strength and robustness;
  - ease of shipment and installation;
  - manufactured to applicable requirements of Underwriters Laboratories (UL) 1316 including watertight specifications to prevent leakage or seepage into the container;
  - comparable with American National Standards Institute/National Science Foundation (ANSI/NSF) Standard 61;
  - available in standard and custom designs;
  - available in single-wall, double-wall, and triple-wall construction to meet local soil conditions;
  - available in holding capacities from 600 gallons to 50,000 gallons; two or more tanks may be interconnected to provide large capacities; and
  - a special 30,000-gallon size is manufactured specifically for fire protection requirements with a full bottom antivortex outlet that can be concreted to a dry hydrant as illustrated in **Figure 6-2**.
- Aboveground storage tanks: Fiberglass and steel storage tanks maybe mounted aboveground as a water storage supply for fire protection. However, this type of storage is limited to regions of the country where temperatures are above freezing; the cost of auxiliary heating in other climates is probably unacceptable. In Southern and Western States, railroad tank cars located on a track siding are kept full of water for fire protection. A 6-inch supply line goes from a suction sump in the tank to a nearby wet-type fire hydrant.
- Elevated water storage tanks: Elevated tanks maybe installed as a sole source of water supply for fire protection for rural fire departments. These tanks typically are supplied by a well pump and are located at fire stations for refilling fire apparatus water tanks, including mobile water tankers.
- Driven wells: These types of wells generally are installed in rural areas for crop irrigation and may be used for alternative water supplies under specified conditions. The well supply may have a feed main to a dry hydrant located by an access road. This permits testing the well supply for flow rate capability. The volume of water from a given well needs to be determined by draw down tests.

- **Swimming pools:** The ISO *only accepts* swimming pools as an alternative water supply source where:
  - the pool capacity equals or exceeds 30,000 gallons of water;
  - the pool remains at the full level year round;
  - access is provided to the pool for a mobile pumper to draft water from the pool, **or** a 6-inch pipe is run from the pool to a pumper connection location point.

  Each individual swimming pool needs to be evaluated by an ISO Field Representative.
- **Private domestic water systems:** Suburban residential communities and large farmstead properties, especially dairy farms with milking parlors, actually have small self-contained water systems supplied by wells that have the capability of delivering 250 gpm or more. It is determined from tests that a dedicated water system can supply 250 gpm for 2 hours, the property association or the property owner should contact their insurance carrier(s) to initiate an ISO evaluation of the system.
- **Municipal water supply systems:** Recognized fire hydrants on municipal water systems (i.e., Those hydrant tested to demonstrate a delivery of 250 gpm or more for 2 hours) may be used to fill mobile water tankers or to relay water to protect areas beyond 1,000 feet of the hydrant. This is a very **important** source of water supply when planning alternative water delivery program, since it may be one of the most reliable water sources for fire protection beyond water mains.

5. Dry fire hydrant programs.

Alternative water supply program for suburban and rural areas need to consider *carefully* the advantages of installing dry (fire) hydrants at ponds, lakes, river, streams, or on water storage tanks to provide ready access to water supplies for sustained structural fire suppression capability. The term "dry hydrant" refers to a special type of hydrant that is installed at or on a water source that has **no** static water head or pressure and is intended to provide water *strictly* for fire protection. Dry hydrants significantly improve structural fire protection in suburban and rural areas where there is no municipal water supply for the following reasons:

- Each individual dry hydrant has a specific location at a named water source to maximize the water available for supplying a fire department pumper.
- A fire department pumper crew can connect one section of hard suction hose rapidly between the dry hydrant outlet and a mobile pumper intake of the correct diameter. The eliminates the time-consuming effort to connect two or more sections of suction hose together, attach a straining device, and correctly placed the suction hose and strainer in the water source.
- A solid earthen, blacktop, or concrete pad is prepared near the dry hydrant for safety of the fire apparatus and personnel working at the dry hydrant location.
- Locate dry hydrant cap suction connections within 18 feet of a hard surface road or drive-off to the pumper location pad. In snow-belt areas, the drive-off pad area needs to be arranged for easy snow plowing. There should be no significant accumulation of snow around the dry hydrant area during and after snowfalls.
- All dry hydrants used for providing water to an ISO *Graded Area* need an individual hydrant identification number posted near the dry hydrant. Dry hydrant locations and the reference number need to be plotted on a fire protection jurisdiction highway map. This map will improve the ability of ISO personnel to evaluate water delivery capability throughout a fire protection district.

Prior to the installation of a dry hydrant, it is essential that the location of each dry hydrant be carefully planned, design criteria established, construction details documented and prepared but **not** signed. This process is necessary to obtain installation permits from the authority having jurisdiction (AHJ). Suburban and rural areas are encouraged to contact the county office of soil and water conservation, the regional office of natural resources conservation (NRC) and/or the department of environmental conservation (DEC). The NFPA's Standards Committee on Suburban and Rural Fire Protection is working with DEC to provide a means whereby the agency will supply installation drawings for a fire hydrant at a specific water site based on drought conditions in the area and the potential reduced capacity from freezing ice over the intake port. It is then expected that the ISO will accept the dry hydrant installed according to the drawings without a further certification process. However, such a program is still a way from reality.

Figure 6-3 illustrates a typical dry hydrant installation for a water source that has been certified for hold 30,000 gallons of water during drought conditions. It is essential to observe the following when examining and evaluating dry hydrant installation drawings and the actual field installation:

- Note that a hard surface or *packed dirt pad* needs to be provided for locating a supply pumper or a fill site pumper at the dry hydrant location.
- The pad area and surroundings need to be cleared of encroaching ground cover and maintained to prevent soil erosion.
- A dry hydrant marker with the dry hydrant number needs to be placed in a conspicuous location near the *pad* area.
- Figure 1 indicates a measure of 20 feet of elevation difference as a maximum figure for drafting water between the indicated surface level of the water and the centerline of the "steamer" connection or hydrant outlet. Both the mechanical efficiency of the mobile pumping unit and the elevation above sea level act to affect the ability to draft water with an elevation differential of 20 feet. A standard 10 feet of head differential between the two elevation points referenced should be established where possible.
- The distance between the raked-off finished ground surface and the steamer hose connection outlet centerline should be 12 inches. It is essential that the centerline of the hydrant hose connection be below the centerline of the pump intake in order to avoid an air lock in the suction hose.
- The dry hydrant riser pipe, top elbow, and outlet connection (i.e., hydrant head) are typically 6 inches in diameter. The threaded hose connection provides for a 6 inch waterway. The hose threads should typically be National Standards Thread (NST). Hose adapters **may need to be provided** for any pumping units that still do not have NST hose threads.

[Sidebar: The issue of proper hose threads is extremely important. In 2003, the USFA reported the identification of 19 difference "steamer" or large outlet diameter hose threads in use in the United States.]

- Low-level vegetation, preferably one that can be mowed, should be planted around the riser pipe and along the embankment to prevent erosion
- The underground lateral pipe connecting the strainer with the elbow section or single elbow to the riser is usually 6 inch in rural areas. A larger size lateral pipe maybe needed where:
  - A dry hydrant flow greater than 1,000 gpm is needed; or
  - The length of the lateral suction pipe exceeds 50 feet.

- In either case, an increased pipe size may be needed to reduce friction loss at higher flows. The following guideline is useful to estimate maximum flows in PVC pipe per 100 feet of pipe with connector fittings:

Pipe Diameter	Flow in gpm
6 inch	1,000
8 inch	1,250
10 inch	1,500

It cannot be reinforced enough that the water level above the installed strainer needs to be 2 feet above the minimum drought level certified for a specific water source to avoid a vortex at the entrance to the suction pipe and loss of prime on the intake side of the mobile pump. A vortex box to house the pipe strainer maybe constructed to avoid this problem.

6. Methods of delivering Alternative water supplies.

The ISO does not prescribe any specific method of delivering alternative water supplies to a fire site. In fact, ISO encourages the development of innovative techniques and methods to improve current approaches to water delivery operations for fire protection beyond 1,000 feet of recognized fire hydrants. It appears that the majority of existing water delivery program have evolved from one or both of the following approaches to transporting water from a recognized source location (i.e., pond, lake stream, river, storage tank, etc,. as noted above) to an identified fire risk site.

- Use of mobile tankers to "haul" or "shuttle" water between a designated water fill site and the fire site.
- Use three or more mobile pumper to transport water through one or more hose lines from a water source to the fire site. There are two basic types of water relays: 1) closed-end relay, and 2) open-end relay.

Establishing an Alternative Water Delivery Program

The first organized effort to establish alternative water supply programs appears to have emerged in the late 1970s. There is documentation of these programs in the States of California, Georgia, Florida, New York, and North Carolina. One specific program was established between the ISO and the Wyoming County Bureau of Fire in western New York State. The State Fire Coordinator for the Bureau of Fire was interested in developing a program that would improve the semiprotected areas of the county to a protected classification for insurance rating purposes. It was reasoned that not only would this effort improve rural fire protection but it also would reduce property insurance rates rather significantly. Working with the ISO Field Representative out of Rochester, New York, deputy fire coordinators started a Master Plan to deliver needed fire flows at representative sites throughout the individual fire districts in the county. There was little published material beyond the general criteria obtain from the ISO.

Wyoming County was, at that time, a mostly rural county with several small communities. Dairy farming was the primary livelihood. It was estimated that the county had around 40,000 people and 400,000 thousand cows; it was rural America in every sense of the word. However it was a thriving county and energized to do things better.

The county was very fortunate to have a County Office of Soil and Water Conservation, with a graduate of Cornell University in both Agricultural Engineering and Civil Engineering. The individual was essential

to the certification of farm ponds, small lakes, and streams running through the county that could be developed as water resources for the alternative water delivery program. By the mid-1980s the program was in progress with seven participating fire districts. However, the progress was slow and tedious because of all the paperwork that needed to be generated for conducting a water delivery demonstration for the ISO.

The small village of Strykersville, New York, in Wyoming County is certainly one of the first ISO *Graded Areas* an improved Public Protection Classification (PPC™) based on a successful water delivery demonstration using both a tanker shuttle operation and a water relay from a nearby creek to delivery 1,550 gallons of water a minute at the Catholic Church near the center of the community. The PPC Class actually improved from a Semi-Protection Class 9, since there was no recognized water supply to a Class 7 Protected Classification. This occurred in 1990 and it was estimated at that time that the residents of the community would receive an insurance premium reduction of $1.37 per $100 of evaluation; commercial property would be more, but this was not determined for each property in this class for the community. Voluntary contributions to the volunteer fire department tripled the next year in gratitude for this achievement. Approximately 35 percent of the county fire districts now have an ISO PPC of 8 or better. This process continues in the county, but it has slowed down because of the lack of funds at the county level to continue this effort.

A significant program was initiated in 2000 to give alternative water supply programs a national perspective and to encourage suburban and rural fire protection districts without recognized water supplies to plan and implement water delivery programs. The USFA joined in a partnership effort with the ISO to develop A User Planning Guide and a User Workbook on Alternative Water Supplies. In addition, two companion videotapes are available with the titles 1) *Planning for Alternative Water Supply* and 2) *Implementing An Alternative Water Supply Program*. These videotapes were introduced at the International Association of Fire Chiefs (IAFC) Conference, Denver, Colorado, in August of 2005.

[Sidebar: The references at the end of this chapter provide information on how to obtain the *User Plan Guide*, the *Workbook*, and the two videotapes on alternative water supplies from the USFA.]

The USFA encourages fire departments in conjunction with the communities they serve to develop and implement long-range plans. The USFA has developed a planning model that incorporates the systems approach to planning on public fire defenses. This planning model is easily adapted to establish an alternative water supply project for a specific fire protection jurisdiction as follows:

Phase I: Preparing and organizing to plan.

1) A fire protection jurisdiction recognizes the **need** to deliver water in sufficient quantities to control and extinguish structural fires in response areas without water mains supplying fire hydrants.
2) An organization meeting is held with at least the following representatives attending:
   a) The ranking political official (i.e., mayor or township manager) at the local government level and the county executive at the county level of government.
   b) The elected official responsible for fire protection.
   c) The fire chief and fire company officers for the fire district under consideration, and county fire officials where the county has planning responsibilities.
   d) A community water supply superintendent if there is a recognized water supply system in the fire district.

e) The ISO Field Representative who has responsibility for the identified fire protection jurisdiction.

3) The ISO Field Representative discusses the ISO criteria for obtaining a recognized alternative water supply program for the graded area the process to reach this goal.

[Side bar: The ISO Field Representative plays a **key** role in all three phases of the alternative water supply planning process. Both the *User Guide* and *Workbook* are based on a water delivery program that will result in the *Graded Area* receiving an ISO PPC.]

Phase II: Conduct the Planning Process

1) Identify resources for conducting alternative water supply delivery demonstration project. These resources include a) mobile fire apparatus and equipment and response personnel, and b) available outside aid in the form of mutual-aid and automatic-aid from surrounding fire districts.
2) The ISO Field Representative identifies a minimum of five representative fire risks in the *Graded Area* for determining a response evaluation. In cooperation with local authorities, the ISO Field Representative selects **one** representative fire risk site where a water delivery demonstration is to be conducted.
3) Arrangements are made for the ISO Field Representative to witness a water delivery demonstration at the selected fire risk site.
4) After a successful water delivery demonstration has been completed, the ISO Field Representative will evaluate water delivery to the remaining fires risks in the *Graded Area* using a computer simulation model developed by the ISO.

[Sidebar: ISO's Alterative Water Supply Computer Simulation Model reduces the time of preparation required by a fire district before a Grading Reclassification can be completed. This overcomes a major problem associated with the early work on alternative water supplies as identified above.]

Phase III: Adopt and implement the plan.

1) After the ISO completes the alternative water delivery capability evaluation throughout the *Graded Area*, the fire protection jurisdiction submits a request to ISO, Inc. for a Public Protection Reclassification.
2) The reclassification includes a current evaluation of: a) receiving and handling fire alarms, b) fire department, and c) water supply. Note: Results of the alternative water supply evaluation replaces a component evaluation of a municipal water supply.
3) The alternative water supply program is implemented in the fire protection jurisdiction. This means that all future alarms of fire for a structure fire will receive a response of equipment and personnel to place in service an alternative water supply to meet as close as possible the needed fire flow for the fire risk.

Summary

The model alternative water supply program follows the steps below:

- Establish needed fire flows throughout the *Graded Area*.
- Define the geographical area to be protected.
- Identify the representative fire risks and basic fire department response information to each potential fire site.
- Identify the water sources that will be used to transport water to the representative fire risks, and review the certification of each water source to determine that it is capable of delivering 250 gpm for a during of 2 hours under the specified drought conditions.

- Determine the water transport methods to be used for each representative fire site. This is typically a water shuttle operation using mobile tanker apparatus that maybe be augmented by a water relay operation.
- Identify fire apparatus resource capability.
- Evaluate fire apparatus travel plans.
- Prepare a preliminary operations plan.
- Conduct a water delivery demonstration project.
- Analyze the completed water delivery demonstration.
- Prepare operation plans for the remaining representative fire site.
- Request an ISO Reclassification.
- Determine the benefits of the improved PPC on Property Fire Insurance Rates.

CHAPTER 7 IMPACTS OF FIRE FLOW ON DISTRIBUTION SYSTEMS WATER QUALITY, DESIGN, AND OPERATION

Background Statement

In 2002, The American Water Works Research Foundation and KIWA of the Netherlands convened a panel of engineers, scientists, university professors, municipal water works officials, senior fire officers, and insurance industry personnel to study, explore, and evaluate, as this Chapter title indicates, *Impacts of Fire Flow on Distribution Systems Water Quality, Design, and Operations.* This study was jointly funded by the AWWA, the AWWA Research Foundation, and KIWA of the Netherlands, who assume no responsibility for the content of the research study reported in a publication by the Chapter title above or the facts and opinions of the panel participant's as expressed in the report.

The following information is excerpted from this study because the information presented is essential to understanding current issues associated with public-sector water supplies and the potential impact that the private sector has on needed water supplies for fire protection. It should be understood that there are two approaches to the confinement, control, and extinguishment of developing fires in structures. The conventional approach is to have a public fire department respond to a structure fire with engine companies and ladder companies to "handle" everything from a wastebasket fire to a fully involved structure fire. The alternative approach is to install automatic sprinkler systems in both residential and commercial properties either to extinguish a developing fire immediately, or to confine a fire to the room of origin to be completely extinguished by a fire department.

The installation of automatic sprinkler systems transfers a significant portion of the cost of water supplies for fire protection to the private sector. The private sector assumes the cost of the installation of automatic sprinkler systems, maintenance, and periodic testing. There are economic incentives in the form of insurance premium reductions for commercial property owners with installed and maintained sprinkler systems and even some insurance incentives for residential sprinkler system installations.

As stated in previous chapters, the primary objective of a public water system is to provide sufficient potable water at an acceptable level of water quality now determined by the EPA in the United States. The decision for a public water supply to provide fire flows can have significant impacts on the design and operations of the systems. This is why there is a large number of small villages and towns under approximately 5,000 population that do not have installed fire hydrants on a small water distribution system.

Typically, the election to provide fire flows and fire hydrants results in increased water supply pipe diameters, leading to higher capital costs, and greater provision for reliability and redundancy in the distribution system. It may also, however, have some negative water quality implications. This "oversizing" to meet what some consider to be relatively infrequent fire events can result in increased

water resident times in larger size pipe, thus increasing the possibility of disinfectant residual loss, and enhancing the formation of disinfection byproducts, and bacterial growth in the water mains. Larger diameter pipes also result in lower water flow velocities in the water system that lead, in turn, to the deposition of sediments.

Background

The study group determined that there is no legal requirement in the United States for the water distribution system to provide fire flows. Municipalities and township may develop ordinances that require water systems to provide fire protection. At the same time, an inadequate fire protection system provides a false sense of security. Fire flow requirements generally are based on fire codes developed by independent groups including the Building Officials and Code Administrators (BOCA), the International Conference of Building Officials (ICBO), the Southern Building Code Congress International (SBCCI), and the National Board of Fire Underwriters' up to 1970. Since 1970, the insurance criteria has been developed by the ISO.

In the absence of a fire, the obligation to provide fire protection substantially extends the time that the water, after treatment, resides in the distribution system, including its service reservoirs, before it reaches the users. Degradation of water quality in conventional potable water distribution systems has been shown to be a function of the length of time that water is retained in the distribution system and the very slow velocities of water in the lines that feed residential areas, to the point where they protect microorganisms in the water and, over time, restrict flow capacities of the pipes. (Geldreich 1996)

Water quality changes that occur within the distribution system are of increasing concern.

Water distribution system design often is dictated by the need to provide fire flows. This leads to oversizing of the system for most normal conditions. An oversized system increases the resident time of water, increasing the possibility for depletion of disinfectant residual and the formation of disinfection by-products. An oversized water distribution system also increases the associated capital and operation and maintenance (O&M) costs. This is particularly true in the case of pumping, when elevated tanks are maintained at high levels in order to provide sufficient fire flow capacity and minimum pressures on fire hydrants. Therefore, there is a clear need to evaluate fire flow requirements and to determine improvements in water quality and reductions in capital and O&M costs that could be achieved if fire flow requirements are reduced or eliminated.

Study Objectives and Scope

The objectives of the stated project were as follows:

- determine the economic and water quality impacts of designing systems to meet fire flow requirements;
- review national and international criteria for providing fire flows; and
- identify alternative methods and technologies for firefighting appropriate for present-day situations.

This review of the study report addresses each of these topics in order.

The Impact on Water Quality by Designing Water Distribution Systems to Meet Fire Flow Requirements

In order to evaluate the economic and water quality impacts associated with fire flow requirements, hydraulic water quality modeling of hypothetical and actual distribution systems was conducted. The EPA's EPANET model was used to conduct the modeling. The hydraulic evaluation considered changes in infrastructure sizing and operating practices, primarily related to storage volumes, which could be realized if fire flow requirements were reduced or eliminated. The economic impact of these changes was estimated to evaluate the financial impacts of providing fire flows. The key water quality parameter considered was water age. The residence time of water in the distribution system can be a key indicator of water quality, as it plays a major role in determining disinfectant residuals and disinfection byproduct formation. The significant findings are as follows.

Mathematical models were applied to various systems designs and different levels of fire flow in order to study the resulting economic and water quality impacts. The following overall approach was used in conducting this analysis:

1) A modified version of EPANET distribution system model (Rossman 2000) was applied in steady-state mode to a specified network design to determine if it would meet minimum pressure requirements under a) maximum day demand plus fire flow Requirements, and b) peak hour demand conditions.
2) Three levels of fire protection were studied
    a) The first level is maximum day demand plus fire flow capacity in which fire flows meet the needed fire flow requirements as defined by the ISO for Public Protection Requirements (see Chapter 5 for details on the ISO needed fire flow calculations).
    b) The second level is maximum day demand plus reduced fire flow capacity associated with the hose stream requirements that are needed to augment fire protection provided by automatic sprinkler systems.
    c) The third level is no fire flow requirement (i.e., peak hour demand for consumer consumption). This alternative would be consistent with a dual water system briefly discussed under alternative technologies later in this review and in Chapter 8 of the manual.
3) A modified EPANET model was applied using an interactive approach in which pipe diameters were downsized under the constraint that minimum pressure requirements were met under both peak hour conditions and maximum day plus fire flow requirements at all demand nodes. This step was repeated for the three levels of fire protection described in the previous step.
4) The EPANET model was applied in extended period simulation (EPS) mode to determine distribution system storage requirements and to ascertain that minimum pressures and flows could be met over the full duration of a fire (i.e., 2 to 4 hours).
5) EPANET model was applied in the EPS mode to estimate water age under minimum daily demand conditions in order to calculate the average demand-weighted water age.
6) The results of the EPANET minimum day demand application were examined to determine whether sufficiently high velocities occurred to ensure "self-cleaning" of the pipes. The criterion used by KIWA that a minimum velocity (1.3 feet per second(fps)) occurs at least once a day was employed as the evaluation measure.

7) A cost model developed by EPA (Gumerman, Burris, and Burris, 1992; Clark et al., 2001) was applied to determine the capital costs of pipes, tanks, and other facilities for the various distribution system designs associated with each level of fire protection facilities.
8) The redundancy and reliability of each of the distribution system designs was qualitatively evaluated.

In addition to the standard procedures outlined above, a tank water age model, CompTank, developed as part of an earlier AWWA Research Foundation sponsored project (Grayman et al., 2000) was applied to develop general guidelines for storage requirements to meet various levels of fire protection.

EPANET Distribution System Model

Hydraulic analysis of flows and pressures in a distribution system has been a standard form of engineering analysis since its development by Dr. Hardy Cross in 1936. Water distribution system computer models have been in use since the middle 1960s and have evolved into sophisticated, user-friendly tools that are capable of simulating large distribution systems (Walski, Chase, and Savic, 2001). In more recent years, the ability to model water utility and water age has been added to hydraulic models (Clark and Grayman, 1998). There are many commercial models that offer a wide range of capabilities in distribution system modeling EPANET is an open-structured, public domain hydraulic and water quality model developed by USEPA and is used worldwide (Rossman, 2000.) EPANET was selected for the stated research project.

In order to facilitate the examination of required pipe sizes, the standard EPANET model was modified for use in the study project. This modified version allows the user to examine all nodes quickly in terms of their ability to deliver specified fire flow quantities while meeting a specified pressure requirement at the fire flow node; 20 psi was selected. The model also may be used to automatically downsize pipes to the minimum diameter required to deliver a specified fire flow plus normal usage.

Costing Model

EPA has developed a model consisting of cost equations for pumps, pump stations, including new facilities and expansion of existing pipes (Clark et al., 2001). The model represents the base construction cost data for the purchase and installation of an item, such as a particular type of pump installation. Cost estimates can be developed based on a series of separate items that can be added to the base installed costs. To convert the base construction cost into capital cost, the cost data must be aggregated for the entire project, and additions made that include the following items:

- general contractors overhead and profit;
- engineering;
- land or right-of-way acquisitions;
- legal, fiscal, and administrative costs; and
- interest during construction.

O&M requirements for pumping stations include electrical energy, maintenance materials, and labor. Total O&M cost is a composite of the energy, maintenance material, and labor costs.

Observations from Model Runs

- As the development increases consumer demand, peak demand flow becomes a controlling factor and pipe size is determined by peak flow rather than maximum demand **day** plus fire flow requirements. When peak flow is the controlling factor, then the system also should meet fire flow requirements. As peak flow decreases, water demand decreases; a system design based on peak flow will not necessarily meet fire flow requirements.
- A network design using a looped feeder system results in overall smaller diameter pipe sizes and lower water usage than either the regular grid system or the branching network system. However, the branching network results in significantly lower costs than the other networks because of the reduction in total length of pipe despite the larger pipe diameters required. This may explain why many distribution subdivisions are built with branching type systems rather than looping systems. It was further identified that the nonlooped configuration used in this analysis results in longer connection lines, as compared to the looped configurations.
- Examination of the branching systems shows that such systems provide no service redundancy and are thus inherently less reliable (i.e., more vulnerable to service shutdowns) than looping systems. In a branching system, any outage along a single pipe results in loss of service to all downstream consumers. In a looping system, alternative paths generally will provide some degree of service even if one pipe is out of service.
- As pipe size increase to meet fire flow requirements, the average maximum velocities in individual pipes tend to decrease, resulting in a greater potential for sedimentation, deposition, and water age. This conclusion is supported by the larger percentage of pipes that do not meet the KIWA velocity goal (minimum velocity of at least 1.3 fps at least once a day as the fire flow requirement increases).

Analysis of Distribution System Storage

Storage is an important component in almost all distribution systems. It can serve the following purposes (Walski, 2000):

- Equalization: Demands in a water system generally vary over the course of the day, while water utilities prefer to operate their treatment facilities at a relatively constant rate. Distribution system water tanks and reservoirs frequently operate in fill and draw operations over the course of the day, thus providing the storage to accommodate the constant variations in water supply and demand. However, time-of-day variations in energy pricing may influence when wells and pumps are operated.
- Pressure maintenance: The water level in tanks and reservoirs largely determine the pressure in areas served by a storage facility. In order to provide sufficient pressure, in many situations, particularly at the top of the pressure zone, the water level in a storage facility must be maintained within a specific range.
- Fire storage: Required or needed fire flows can be provided through a combination of fire storage in water tanks and reservoirs, or through larger transmission lines and increased treatment capacities. In many water systems it appears that fire storage is the more economical means of meeting fire flow requirements. Dedicated water in storage for fire protection needs to be recycled weekly to prevent excessive aging and sedimentation. This can be done by bringing the tank "on line" and refilling from the top using a total flow meter to replenish the gallons of water drained from the tank. This technique keeps the tank 90 percent full at all times.

- Emergency storage: In addition to fires, other emergencies such as power outages, equipment failures, water main breaks, and temporary loss of water supply facilities can result in insufficient water supply within the distribution system. Storage provides a mechanism for providing water under such emergency conditions.

In order to accommodate the various purposes of a water tank or reservoir, they are generally designed with a given amount of capacity targeted to each of the following specific uses:

- Equalization storage: Storage used to allow for normal fill and draw patterns.
- Ineffective (passive) storage: Storage used to provide the minimum pressure requirements.
- Fire storage: Storage to meet sufficient, required, or needed fire flows.
- Emergency storage: Storage reserved for emergencies other than fires.

The actual storage requirements in each of these categories vary in different storage facilities based on local regulations, operating conditions, and hydraulic conditions. It should be understood that at some water utilities, fire storage and emergency storage may be combined, based on the assumption that both fires and other emergencies are rare events and the simultaneous occurrence of fires and other emergencies are unlikely.

[Sidebar: This study was completed before 9-11 at the World Trade Center. Today, FEMA considers the probability threat level for simultaneous events, which could way overtax even a very large city water supply.]

The primary emphasis of the study under review is to evaluate the impact of fire flow requirements on water storage capacity. Storage capacity is aggregated into three categories: 1) equalization, 2) fire demand, and 3) reserve storage. Reserve storage corresponds to capacity that is not used for either a joint equalization or simply fire flow demand and includes both ineffective storage and emergency (other than fire) storage. In order to develop a general relationship, the following assumptions were made

- The tank or reservoir is completely and instantaneously mixed during the fill cycle.
- The storage facility operates with a 12-hour draw and 12-hour fill cycle at constant fill and draw rate with the water level variation over the full range of the equalization storage volume.
- The water level in the tank is at its maximum level at the start of the draw cycle and again at the end of the fill cycle.

The types of storage and the fill and draw pattern used in the analysis are illustrated in **Figure 7-1.**

Though primarily designed for the hydraulic purposes outlined above, storage also can have a negative impact on water quality due to age as previously identified. Loss of disinfectant residual, bacterial regrowth, taste and odor production, and formation of disinfectant by-products are potential water quality problems associated with water aging. Improper mixing in storage facilities can exacerbate the water aging problems by creating dead or stagnant zones of even older water (Grayman et al., 2000.) A quantitative assessment of the impacts of providing fire storage on water age is provided in **Figure 7-1**.

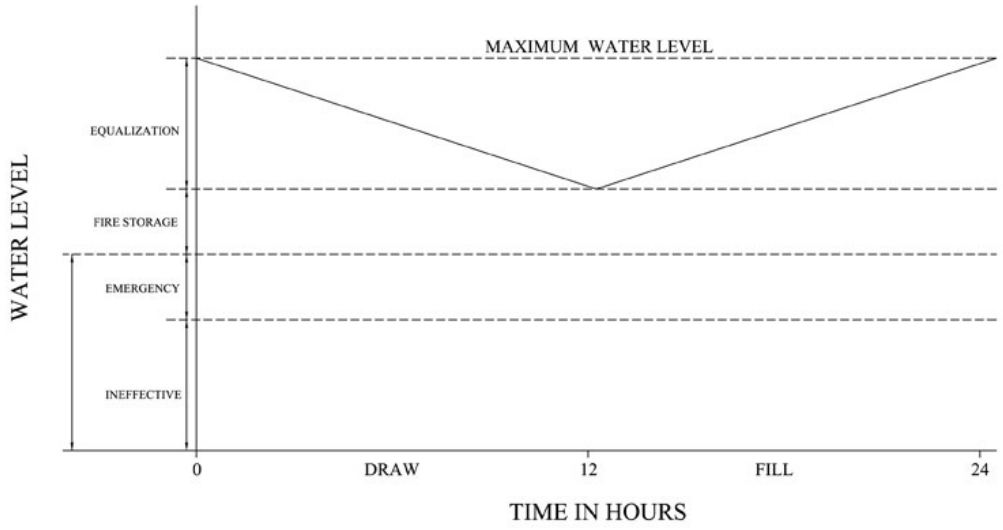

Figure 7-1

Factors Used in the Analysis of Water Storage

Study Set 1: Summary and Conclusions

Designing a water system with sufficient capacity to meet fire flow requirements or needed fire flows can result in major economic and water quality impacts. Typically these impacts are manifested in increased pipe diameters, greater provision for reliability and redundancy in system design, increased system costs, and increased potential for reduced water quality.

A method has been developed for approximating minimum pipe diameters required in a water system for various levels of fire flow and peak hour conditions. The economic and water quality consequences of these design choices have been evaluated.

The methodology has been demonstrated by applying it to a realistic, though hypothetical distribution system. System requirements for four different scenarios were evaluated:

1) Existing pipe and storage sizes.
2) Modified (downsized) pipes and storage that will still meet the full fire flow requirements.
3) Modified pipe sizes and system storage to meet a reduced fire flow requirement associated with having sprinkler systems in all structures.
4) Modified pipe sizes and system storage with no fire flow requirements.

The adequacy of the various system design options was evaluated in terms of their capability to meet fire flow requirements and to satisfy normal demands. Each option was examined in terms of its ability to meet maximum day conditions with a fire flow requirement superimposed and to meet peak hour conditions. The analysis includes both a steady-state assessment and an EPS that tests the ability of the

system to deliver flow over the duration of a fire ranging from 2 hours to 4 hours. Subsequent to the identification of the system configurations under the four design options described above, additional modeling was performed to:

1) Determine the cost of the resulting networks.
2) Determine the water quality consequences of the reduced pipe diameters and storage requirements.

In order to make the results more generally applicable, the same method was applied to a generalized network using four different design criteria, and three different fire flow requirements, under three different population densities. A series of observations result from this analysis concerning the impact of these assumptions on pipe diameters, pipe costs, water age, and velocities.

Review of National and International Criteria and Providing Fire Flows

Water companies throughout North America and Europe, whether private or publicly owned, operate within a regulated environment and strive to provide the highest levels of service to their customers at levels of costs that reflect good value for the money invested in the water treatment and distributions systems. (Water UK and LGA, 1998) In terms of water supply for domestic purpose, "the highest level of service" usually means to provide a water service to customers at acceptable minimum flow and pressure, as well as supply water that meets applicable water quality regulations and is aesthetically pleasing. Water requirements for fire suppression or installed fire protection, on the other hand, are usually added to the requirements for domestic purposes and are commonly calculated according to discrete areas belonging to different fire risk categories that are based on type of construction and building size. As discussed in greater detail below, fire flow requirements vary greatly among countries. These variations may be attributed to the *differences in construction materials and structural types* that exist among countries. The following review is by country that provided literature on water supply requirements.

United States

Throughout the United States, it generally is left up to the local authorities to determine the fire flow requirements for their jurisdiction. The fire flow requirements sometimes are specified in the model building codes or fire codes; however, if the political jurisdiction wishes to determine its own set of fire flow requirements, there are three methods reported in the literature from the AWWA. Each of these methods is identified below without full elaboration, for two of the methods are discussed in other referenced Chapters, and a third method has not been adopted by any standards or codes. Basic details are provided so that these methods can be compared and contrasted to other countries.

- The ISO Needed Fire Flow Method: Refer to Chapter 6. The ISO Method is used to determine needed fire flows for insurance rating purposes. This is a recommended practice for communities but there is no legal requirement that political jurisdiction meet needed fire flow criteria. However, municipal water supplies that do meet needed fire flow criteria may find that their commercial property owners are paying higher insurance rates; it may have less impact on residential property owners. The ISO method for calculating the needed fire flow considers the construction (Ci), occupancy (Oi) exposure (Xi), and communications (Pi) factors of a building or fire division. Exposure and communication factors reflect the influence of exposed and communicating buildings on the needed fire flow (ISO

2001). The ISO Method is most likely to produce the most realistic requirements (Farrell, 1996). Fire flow is calculated by the formula: NFFi = (Ci) (Oi) (X + P)I.

- Illinois Institute of Technology Research Institute (IITRI). The IITRI method is based on data collected from actual fire in server types of commercial occupancies in Chicago and to determine the water application rate necessary to *control* a fire as a function of the fire area. Using a curve fitting analysis, the IITRI method developed two equations solely based on flow area. The method has not been adopted by any code- or standards-making organization.
- Iowa State University Method. The ISU method for calculating a required fire flow addresses both the quantity of water required to extinguish a fire, and the effects of various application rate and firefighting techniques. The equation used for this method is based on the consumption of fuel being dependent on the available oxygen supply in a 90 percent closed compartment or space and vaporization of applied water into steam. (AWWA, 1998) A limitation of this equation is a result of the assumption that the entire compartment or space be entirely involved in fire. Therefore, the critical consideration involved in applying the ISU method is how a fire department fights structural fires. (Burns and Phelps, 1994) This method is discussed further in Chapter 6, and it should be noted that this method is fully explained in NFPA 1142.

In addition to these basic methods, building codes and standards in the United States also specify water supply requirements for fire protection. The following building code information was identified from a review of the literature.

BOCA: The BOCA National Fire Code references the NFPA Codes and Standards for the determination of required fire flows.

ICBO: The Uniform Fire Code defines fire flow as the flow rate of a water supply, measured at 20 psi residual pressure, that is available for firefighting (ICBO, 1997). For one- and two-family dwellings, a fire area that does not exceed 3,600 square feet, the minimum fire flow requirements are 1,000 gpm. For other types of construction, the minimum required fire flow and flow duration for buildings are indicated in **Table 7-1**.

Table 7-1: Minimum Required Fire Flows and Flow Duration

Fire Area in Sq. Ft.*	Fire Flow in gpm	Duration in Hours
3,600 —70,900	1,500—2,750	2
13,400 —128,700	3,000—3,750	3
23,300 —295,900 and greater	4,000—8,000	4

Source: ICBO 1997 *Fire areas for specific types of construction are provided in Appendix III-C, Fire Hydrant Locations and Distribution of the UFC (ICBO) 1997.

NFPA: NFPA leaves it up to the Authority Having Jurisdiction to determine the required fire flows for the local conditions in the form of local codes, ordinances, or resolutions. These local codes may, however, specify the minimum water supply requirements that must be available for firefighting purposes in areas where adequate and reliable water supply systems for firefighting purposes do not exist. The fire department having jurisdiction should perform an onsite survey of all building, including types of construction, occupancies, and exposures within the applicable jurisdiction to

obtain the information needed to compute the minimum water supplies required (NFPA, 1999). NFPA 1142 provides calculations for determining the minimum firefighting water supply for structures based on their exposure hazard, total area of the structure, occupancy hazard classification number, and the construction classification number. Tables specify the minimum water supply to be 2,000 gallons and the maximum supply of 5,000,000 gallons that must be available in storage for firefighting purposes.

Canada

It is the responsibility of the provinces and territories throughout Canada to determine fire flow requirements. The following is a summary regarding some of the codes and guidelines used by local authorities in Canada for determining the required fire flows for their province or territory.

- National Building Code (NBC): The NBC does not dictate the required fire flow, but states that an adequate water supply for firefighting should be provided for every building (Farrell, 1996).
- Alberta Building Code: In 1973, Alberta became the first province to adopt the NBC by reference, making some amendment as noted in the Alberta Code (ABC) (Farrell, 1996). The ABC provides a formula for calculating the supply of water to be available for fire-fighting purposes. The formula is based on the total building volume, a water supply coefficient, and a spatial coefficient. The water supply coefficient is selected from a table provided in the ABC, while the spatial coefficient is equal to either 1.5 or 1.0 based on the limiting distance between buildings. The water supply should be capable of being delivered at a rate of not less than 700 gpm for any building required to have a total quantity of water less than 20,000 gallons and a rate of not less than 950 gpm for a building requiring a quantity not less than 40,000 gallons (Farrell, 1996).
- Fire Underwriters Survey (FSU): Similar to the ISO in the United States, the FSU has developed a "Guide to Recommended Practices" and is responsible for performing the review and evaluation of the adequacy of fire protection for municipalities and rating them accordingly. The FSU requirement for fire flow is based on building characteristics including the type of construction, floor area, number of stories, nature of occupancy, automatic sprinkler protection, and exposure risk. The minimum recommended fire flow is 500 gpm, and the maximum recommended fire flow is 12,000 gpm (O'Farrell 1996).

[Sidebar: with a few exceptions, this is the same criteria used by ISO in the USA.]

- Water supply standards: The water supply standards for the City of Edmonton, Alberta, Canada require a separate fire flow of 8 gpm to be imposed at a node adjacent to all high-value properties, e.g., schools and shopping centers. A separate fire flow of 1,600 gpm also is imposed at a node of the weakest link or farthest from the source of supply within the network for a single-family residential development. The residual pressure in all cases for any node within the network should not be less than 20 psi at ground level (Farrell, 1996).

Europe

There are no fire protection standards that apply to all European countries; therefore, each country must develop or adopt its own fire flow requirements.

Germany

The German standards for fire water requirements (DVGW 1978) are based on very detailed fire risk categories that assign the level of risk according to four classes of building use and three classes of fire

spread risk (i.e., low, moderate, and high). German standards for building use categories are presented in Table 7-2.

Table 7-2: German Standards by Building Use Categories

Category	Description	Number of Stories	Floor Area Ratio*	Volume-Area Ratio
1	Small Building	__ 2	__ 0.4	__
2	Residential, light industrial, mixed residential, business mixed	_ 3	__0.3-0	__
3	Central Business District, Light Industrial	3	0.7-1.2	__
4	Central Business District, Heavy Industrial	1	1.0-2.4	__9

Source: Adapted from DVGW 1978.

* Floor Area Ratio = Total area of building/Footprint area.

Volume-Area Ratio = Total building volume/Footprint area.

The combined risk categories result in a fire flow requirements ranging from 200 gpm for the lowest risk area to 850 gpm for the highest risk area. The German standards require that all fire risk flows should be maintained for at least 2 hours with the residual fire pressure (the minimum pressure required during fire flow conditions) of 20 psi for all categories of risk.

United Kingdom

The flow rates that the UK Fire Services ideally require to fight fires are based on the national document on the provision of water for firefighting (Water UK and LGA, 1998.) Similar to German standards, fire flow requirements are determined based on the categories of premises to be protected. Table 7-3 shows UK fire flow requirements ranging from 120 gpm for the lowest risk areas to 1,200 gpm for the highest risk areas.

The UK guidance document does not stipulate the period for which the required fire flow for a specific risk category should be maintained, or the residual fire pressure.

Table 7-3 Categories of Premises and Fire Flows as Required in the UK

Category	Description	Fire Flow in gpm
1	Housing:	
	• Not more than two floor	Minimum of 250
	• More than two floors	300 to 550
2	Transportation (lorry/coach parks multistory car parks, service stations)	396
3	Industry:	
	• Up to 1 hector	300
	• 1 to 2 hectors	550
	• 2 to 3 hectors	800
	• Over 3 hectors	1,200
4	Shopping, office, recreation and tourism	300 to 1,200
5	Education, health and community facilities	
	• Village hall	250
	• Primary schools and single story Health centers	300
	• Secondary schools, college, and large Health and community facilities	550

Source: Adapted from Water UK and LGA ,1998.

Greece

The Technical Chamber of Greece (1996) stipulates that fire flows should be maintained for at least 30 minutes at a level that ranges from 200 gpm to 1,900 gpm depending on the risk category. The required residual pressure, which is 60 psi for all categories, indicates that the main rationale behind the residual fire pressure in this case may not be to act as a safety factor to prevent negative pressures developing in the water supply network (as in other countries), but to supply pressure directly to fire hoses.

France

The French standard for fire water requirement (Circulaire 1951, 1957, and 1967) require flows of 260 gpm supplied for 3 hours as a minimum. Similar to other European standards, fire flow requirements are determined based on the risk associated with premises to be protected, and in case of increased risk (e.g., factories, apartment buildings, etc.) the requirement will increase accordingly. The level of risk and required fire flows are determined based on assessment by the firefighting services. As a consequence of this approach, more stringent requirements can be imposed (Ruellan and Tiret, 1990). Such an example is given for the City of Paris where the requirements range from 530 gpm for a house with not more than two floors, to 2,640 gpm for industrial zones of importance to the general public. Although there were attempts in 1977 and 1978 to re-evaluate these standards, the standards described were still in use in France in 2002.

Spain

Similar to the French standards, the Spanish standards for fire water requirements (Real Decreed 1942/1993) require flows of 260 gpm to be supplied over 2 hours. The required minimum pressure is 13 psi.

Netherlands

In the Netherlands, water requirements historically are calculated based on now outdated KIWA Mededeling 50 (KIWA, 1977) according to defined risk areas a) the high-risk fire flows (required provision of 1,600 gpm to be supplied over 6 hours), or b) the low-risk fire flows (400 gpm to be supplied for 2 hours), which are the highest amount the European countries defined in the subject report. The required fire pressure specified in this document is 30 psi for all categories of risk. However, there are still 10 to 20 percent of the higher risk buildings that will require fire flows of 260 gpm. These higher risk standards are considered to be more of an exception than a rule. In the Netherlands, the fire department typically relies on the water utility for the first 15 to 30 minutes of a fire, after which time they use nonpotable water sources such as canals.

The Identification of Alternative Methods and Technologies for Structural Fire Suppression

Automatic Suppression Technologies

A host of structural fire suppression technologies were reviewed by both Committee and supporting staff that could have a positive impact on reducing water demand for structural fire suppression. The following is a synopsis of the technologies presented in the document under review for this manual. However, there has been significant advancement in several of these technologies along with better performance indicator since the AWWARF/KIWA report was published in 2002. Therefore much of the detailed information is left to be presented in Chapter 9—Viable Approach to Providing Adequate and Reliable Water Supplies for Fire Suppression and Chapter 10—The Latest Concepts on Water Supply Systems.

1. Automatic sprinklers.

Automatic fire sprinkler systems were the first and still are the foremost form of automated fire suppression system used throughout the world. With over 100 years of operating history and a 95 percent plus success record, these systems represent one of the most readily available means for effective fire suppression for a wide range of different occupancies. The success story with automatic sprinkler systems in confining, controlling, and extinguishing developing fires in structures has been a phenomenon.

When used in a closed-head sprinkler system, each individual fire sprinkler is, in a sense, its own fire detector and suppression device. A fire sprinkler is constructed of a mental frame with a threaded pipe inlet and a water distribution deflector; on the interior of the threaded inlet there is a discharge orifice through which the water discharges; a cap covers the discharge orifice. This cap is held in place by one of several types of heat responsive actuation mechanisms, (e.g., fusible link, chemical pellet, frangible bulb, or a special heat responsive element that opens and closes the orifice based on the heat intensity. The distinctions among the different types of actuation mechanisms is not significant relative to the sprinkler heads basic operation; only to the sensitivity of the operation. Each actuation mechanism has a predetermined (based on hazard to be protected and as defined by code) temperature set point. Once the mechanism has been heated to this set point, the mechanism will fuse, melt, rupture or other wise

open the orifice allowing the water pressure in the piping system (in a wet pipe system) allowing water to discharge in a defined pattern over the fire.

Fire sprinklers have orifices ranging from 0.25-inch diameter up to 0.75-inch diameter, depending on the type of hazard or occupancy classification to be protected. Temperature actuation set points range from a low of 135 °F (57 °C) up to 650 °F (343 °C) Set points also are selected based on occupancy. Sprinkler water flow rate is a product of the square root of the water pressure at the sprinkler orifice multiplied by a K factor representing the sprinkler discharge characteristics. K factor ranges are from 1.3 up to 14.5, and even larger (for what are termed large drop-type sprinkler heads). The "standard" sprinkler as defined by NFPA 13 has a 1.2 inch (0.5) diameter orifice and a K factor of 5.6 and an actuation temperature of 155 °F (68 °C). At 15 psi, a "standard" open sprinkler head delivers just under 25 gpm.

Sprinkler systems are designed and arrange with special control valves that include wet-pipe systems, dry-pipe systems, preaction systems, and other special, less frequently used, systems. Wet-pipe sprinkler systems are by far the most common type of sprinkler system in service in commercial and residential properties today. Wet pipe, as the name implies, means that the piping distribution system to each sprinkler head is charged with water under pressure. It is important to note that in this type of closed head system, each sprinkler fuses individually in response to heat input from a fire. Only those sprinklers directly exposed to the heat of the fire will actuate to spray downward onto the developing fire. A common *misconception* is that when a sprinkler system actuates, all heads open simultaneously; this only happens with deluge systems, which are installed for very special hazardous situations. System actuation is alarmed through instrumentation at the system riser fed by a lead-in water main that detects water flow into the system and is wired to a local remote fire alarm panel.

Dry-pipe sprinkler systems operate similar to a wet-pipe system, except that the piping distribution system to feed the sprinkler heads is charged with air or an inert gas under a specified pressure. When an individual sprinkler head fuses, air or gas is discharged initially until the air pressure is depleted to a point where a differential type check valve located in the system riser will open and allow water to flow into the piping distribution system. Again, water flow is monitored by means of instrumentation to immediately sound an alarm. Dry-pipe systems typically are installed for the protection of areas where the sprinkler distribution piping is located in an unheated space such that if water were present, it could freeze and damage the piping, resulting in undesirable non-fire-related discharge of water. The design water flow requirements for a dry-pipe sprinkler system are basically the same as for wet-pipe systems except for the main control valve arrangement.

Preaction sprinkler systems are used in areas such as a rare book collection, where non-fire-related water discharge (e.g., due to sprinkler head or sprinkler piping) could be damaging. This system combines the design features of the dry-pipe sprinkler piping system and is charged with air or more likely. Today, with an inert gas with a separate fire detection systems in the protected space. Special pre-action control valve is located at the system riser and is tied to the fire detectors in the protected space. The preaction valve will not open to release water into the system until a fire alarm signal is received from the fire detectors. The signal will release the valve to admit water into the distribution system piping, but water discharge *still will not* occur until the heat of the fire has fused the actuation mechanism of an individual sprinkler head. Repeating, but this point is most important, water will only discharge from the sprinklers that have been heated to their actuation set point temperature. When the system is in a standby (non-fire situation) condition, the pressure of the inert gas (i.e., air) in the piping is monitored by a low-pressure switch. If a low air pressure condition occurs due to pipe damage or sprinkler head damage, a trouble alarm will sound so that repairs can be made prior to any water discharge.

2. Deluge sprinklers and water spray systems.

Deluge sprinklers and water spray systems operate in a manner similar to the preaction systems described above. The difference in these types of systems is that the actuation mechanisms in each sprinkler head has been removed so that all heads open on the system and water will discharge simultaneously. In both types of systems, fire detection devices are placed throughout the protected space and will actuate a normally closed deluge type valve at the system riser to flood the distribution piping and discharge water from all sprinklers or spray nozzles. Deluge sprinklers and water spray systems differ from one another only in that deluge sprinklers are standard type sprinkler head and are used for general floor area protection the same as other types of sprinkler systems. However, water spray nozzles are of a different design where the water pattern is directed at 30, 60, or 90 degrees from the nozzle orifice and are used for specialized applications such as the oil in transformers or to protect exposed structural steel. Both deluge sprinkler systems and water spray systems typically are limited to use in high-challenge, rapidly developing fire hazard applications. Deluge systems may be used to protect the storage of piled combustibles such as bailed cotton, cardboard containers, or containers on flammable and combustible liquids. These types of systems are for special hazard protection only. They are *inappropriate* for use in other types of occupancies due to water damage potential.

3. Foam-based sprinklers.

Wet-pipe, dry-pipe, preaction, deluge, and water spray type fire protection systems, when used for the protection of high challenging type fire hazards that include flammable liquid hydrocarbons, can be enhanced by the *addition* through injection of one of several types of fire fighting foam agents. The current basic foam classes include protein foam, fluoro-protein foams and Aqueous Film Forming Foam (AFFF) for flammable liquid fires and synthetic surfactant foams better know as Class A foams for ordinary combustibles and structural firefighting. These foams maybe used with fixed system applications and also are used commonly with manual hose streams and master stream applications in high hazard facilities.

The important concept here is that all of the firefighting foams are reported to extinguish fires in both ordinary combustibles faster and with less water than plan water alone; this reduces the water demand for firefighting. Foam in general tend to form a foam blanket that helps exclude oxygen and reduces vapor emissions from the fuel surface while allowing water droplets to settle out of the emulsion and provide cooling at the flame-fuel interface. While surfactant foaming agents are effective in controlling and extinguishing flammable liquid fires and there is increased applications of the newer Class A foams for more rapid control and extinguishment of developing structural fires in residential occupancies, this technology does not have a sufficient history of carefully documented successes to consider the reduction of needed fire flows at this time. Furthermore, the surfactant foams ultimately are carried to wastewater in the fire runoff. This may create an environmental concern regarding discharge of these "soaps" to wastewater streams in certain jurisdictions.

[Sidebar: See further details on Class A Foam in Chapter 9.]

4. Residential and fast-response sprinklers.

Within the past two decades, substantial decreases in the actuation time of sprinkler heads has been recognized. The design of sprinkler actuation mechanisms now incorporates a value known as the Response Time Index (RTI). RTI is a measure of thermal sensitivity, namely, the rate at which the sprinkler element can absorb heat from its surroundings, before actuating. RTI incorporates the concept of thermal lag in that while all actuation mechanisms are set to fuse at a given temperature, the mass of the actuating element introduces a lag time for heat flow into the element.

Significant research product development has led to two distinct types of state-of-the-art sprinklers, both having faster response times: the residential sprinkler and the quick-response sprinkler. Both residential and quick-response sprinklers incorporate lower mass fusible links or frangible bulbs that decrease RTI. The difference in the two types are in their discharge characteristics. Residential sprinkler systems have a modified water discharge pattern where more of the water discharged is contained in the upper portion of the horizontal discharge profile. This is necessary because residential sprinkler system design places a high reliance on the fire being suppressed with a single operating sprinkler head. The distribution pattern of the head must therefore protect draperies and higher elevation combustibles that are more typical to a residence than other types of occupancies. This discharge pattern also helps ensure that fire gases at the ceiling of an enclosure are cooled effectively, thereby reducing the likelihood of "flashover" and additional sprinklers actuating.

5. Water mist technology.

In the case of water mist fire suppression systems, it might be observed that something seventy years old is now a "new thing" again. Water mist technology was originally developed in Europe in the 1940s as application for marine engine and fuel space fire protection. In the 1950s a significant interest and research was direct at water mist as one of the agent most viable for replacing the Halon 1301 fire extinguishing agent. Federal regulations stopped the use of Halon 1301 by 1980 as a significant threat to Ozone depletion in the atmosphere. Beginning at the turn of the 21st century, significant interest and research has been directed at water mist as one of the agents most viable for replacing Halon in certain applications.

Water mist systems are defined by the different methods in which the mist is formed and the characteristics of the droplet size and distribution of the discharged mist from nozzles. Water mist droplets are formed through specially designed nozzles at pressures typically higher than those of standard sprinklers. The pressure is generated by high-pressure pumps or accumulators usually containing air or nitrogen, or even a combination of both. Water droplet size and discharge momentum are critical parameter in system design.

Additional Methods of Reducing or Augmenting Water Supplies for Fire Protection

The AWWA Research Foundation and KIWA Study on the impact of fire flows on municipal water distributions system also considered additional topics that include, 1) Surface Water Sources and Private Water Tanks, 2) Use of Non-potable Water Delivery Systems for Fire Protection, and 3) Continuing Sprinkler Technology. This study was completed in 2001 and published in 2002. Since that time there has been significant progress in these areas along with water mist technology that has been supported by the USFA in partnership program with the ISO, the National Institute of Science and Technology (NIST), the NPFA Committee on Suburban and Rural Water Supply, Standard 1142, and the Marriott Corporation. This update information is presented in Chapter 9 on Viable Approach to Reducing Needed Fire Flow or Providing Independent Water Supplies For Fire Protection.

Study Summary Statement of Importance

This referenced study provides the following conclusions based on the information through the year 2001.

Water-efficient fire suppression technologies suggest the use of less water than conventional standards. In particular, the universal application of automatic sprinkler systems provide the most proven method of reducing loss of life and property due to fire, while at the same time, providing faster response to the fire and requiring significantly less water than conventional fire fighting techniques. It is recommended that the universal application of automatic fire sprinklers be adopted by local jurisdictions.

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Note: Three committee sessions were held in the Philadelphia area and numerous phone contacts were made over a 2-year period. Some of the following individuals prepared separate documents that were used in writing the final study report.

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- Mr. Jan Vreeburg, KIWA, the Netherlands.
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- Mr. P.K. Tudor, Delaware County Water Company (DEL-CO), OH.
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- Mr. Scott Mitchell, American Fire Sprinkler Association (AFSA)
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CHAPTER 8: DUAL WATER SYSTEMS

Basic Concepts

The use of dual water distribution systems, one for potable water for consumer consumption and the other for nonpotable water is becoming a common practice. The main reason for this condition is the diminishing supplies of high-quality water resources, rapidly escalating costs for developing new water sources or for treating poor quality water, and, of no less importance, the increasing costs involved in discharging wastewater into the environment.

When faced with the task of developing additional water sources, community water utility managers and design engineers are increasingly evaluating the potential for dual water systems to serve their community's needs. Development of a dual water system maybe less costly and less wasteful than existing practices that use potable water for purposes that do no require the high quality of water prescribed by the EPA. Properly treated and distributed nonpotable water, as defined by the American Water Works Association (AWWA Manual M-24) can safely be used for irrigation, industrial applications, structural fire suppression, and a wide range of other nonpotable urban purposes to be identified in this Chapter. (1) The bottom line is that these practices conserve limited high-quality treated water for drinking, cooking and other uses requiring potable water that meets EPA quality standards.

Although several States have established regulations for the distribution and use of nonpotable water as defined in AWWA M-24, national standards and guidelines have not yet been established. The AWWA Distribution and Plant Operations Division Committee on Dual Water Distribution Systems, which prepared the stated manual, believes that more study is needed before national standards can be adopted. The following synoptic review of the AWWA concepts on dual water systems are of significant importance in providing needed fire flows without using domestic water. If this could become a reality, then water supplies for fire protection could be designed independent of consumer consumption requirements and provide avoidance for meeting consumption requirements along with needed fire flows on the same water system.

AWWA clearly states that it does not endorse the concepts and information on existing and hypothetical water systems presented in AWWA M-24. This is documentation for review, study, and comment. But the material provided needs to be considered carefully in relation to providing required water supplies by adopted building codes or needed fire flows by the insurance industry. It is also observed that a second approach to dual water supplies are not discussed in the AWWA M-24 Manual. To avoid a semantics problem, this second approach will be defined as a *Separate Water System* and will be discussed in Chapter 9.

Background Information

With increasing urban and industrial development, and with most high-quality sources of substantial water yield already developed, surpluses of high-quality water for the future are becoming less available, and in many areas of the country especially on the East and West Coasts they are nearly exhausted. Using *wastewater* treatment effluents for industrial, urban needs, or agricultural irrigation purposes is a very important way a nonpotable water supply can lessen the demand on potable water sources. An example is the introduction of wastewater treatment effluent for use in the steel industry in Baltimore in the 1950s. (2) Another example is the distribution of reclaimed wastewater to several industries in Colorado Springs in 1960 to relieve the demand on limited freshwater supplies.

Two primary factors have accelerated the development of dual distribution systems. First is the need for water supplies that do not necessarily need to be of potable quality for urban and industrial use. Second is new requirements for costly advanced wastewater treatment facilities, including nutrient and organic removal, to protect the receiving water supplies such as stream, rivers, lakes, and oceans.

Using reclaimed wastewater for nonpotable purposes may reduce water treatment costs when nutrient removal is not only unnecessary but wasteful. This is the case for urban and agricultural irrigation because nutrients already in the wastewater can replace those that would ordinarily need to be added. An example of this would be a golf course watered with reclaimed water. An extensive distribution system for urban irrigation, including the watering of parks, school and college campuses, median strips, and residential lawns, is an important element of reclaimed wastewater system used for other nonpotable purposes.

Although there are many dual distribution systems of varying degrees of complexity, the Federal government has not yet established guidelines for nonportable distribution systems. Some State governments have established standards and guidelines for reclaimed water quality and its nonpotable use. This Chapter present a general summary of current practices for dual water distribution systems with a special focus on the application of these systems to providing an alternative approach to providing required and needed fire flows for structural fire suppression operations. A limited application of this concept is found in the States of Arizona, California, and Florida.

Potential Applications for Dual Distribution Systems

With many successful dual water distribution system now in operation, running from systems that are just one or two major customers to systems that serve all properties in the community, water supply professionals are now considering dual distributions that address special water supply demands and water pollution control problems. These special problems including providing water for fire protection may necessitate new piping system configurations and the engineering of pipe sizes to meet fire flow requirements. This raises the issue of the need for more than one type of reclaimed water distribution system for a given community. The following situations in which a dual water distribution system would be worth evaluating are described under the following topics.

1. Limited water resources.

Competition of existing water resources or limitations on these resources often make acquisition of additional water resources politically and financial difficulty. For example, obtaining additional water resources might require inter-basin (raw water) transfer, which is less politically acceptable now than it was in earlier years of water resource development. Greater knowledge of groundwater hydrology has

illuminated the danger of excessive withdrawls from aquifers, which can result in continually increasing costs of pumping, impaired water quality, and land subsidence. Limited resources create a situation in which water reclamation and a dual distribution system may become attractive.

2. Limited water supplies.

When demand is expected to exceed the yield from existing water supply facilities, and additional facilities need to be constructed, the gradual introduction of a nonpotable water might be appropriate. Water users, whether industrial, commercial, or municipal, may well be served with reclaimed wastewater in place of potable water at a cost substantially lower than the cost of developing new high-quality water sources of supply for potable purposes.

3. Polluted sources.

The 1982 United States Public Health Service Drinking Water Standards recommended that "water supply should be obtained from the most desirable source which is feasible..." (USPHS 1982). The EPA National Interim Primary Drinking Water Regulations adopted in 1995 state that "priority should be given to the selection of the purest source." Many communities have selected the highest quality available which varies widely by region of the country. Additional development may require use of a more polluted source which extrapolates the cost of water treatment to meet EPA regulations. In the past, engineers believed that they could render almost any polluted water safe for potable supply through adequate treatment; generally from coagulation, filtration, and disinfection. However, the "chemical revolution" in the United States since the 1950s resulted in thousands of synthetic organic chemicals that are not readily degraded in the environment. The number of contaminants regulated in potable water has grown from 4 in 1925 to a projected legislated number exceeding 150 by 2000. The treatment of water that will meet drinking water standards in the future will cost considerably more than it does in 2005. Polluted sources of water may therefore be less suitable for potable water supplies but well suited for one or more nonpotable purposes.

4. Rigorous wastewater treatment.

To restore and preserve the quality of North American water, treatment requirements for community wastewater have become increasingly stringent and costly. In many cases, nutrients may need to be removed. If the wastewater can be used in industry for urban irrigation, some advanced treatment, including nutrient removal, may not be necessary and may in fact be undesirable. The operation and maintenance of advanced physical and chemical wastewater treatments facilities are generally more costly than treatment for nonpotable reuse. If wastewater can be used productively, the savings in wastewater treatment can be passed on to users, making water reclamation and dual distribution systems more economically attractive.

Sources of Nonpotable Water

The most commonly used source of nonpotable water is water reclaimed from local wastewater plants, which is generated near customers that can use it. The technology needed to assure the required quality of water is well established. Treatment of secondary effluent is accomplished by coagulation, conventional filtration, and disinfection. Other sources of nonpotable water include brackish or mineralized surface waters and groundwater, including seawater, certain industrial wastewaters and ground waters, and irrigation return flows. The focus of this Chapter is on reclaimed water from sewage treatment plants. Chapter 10 discusses completely *separate* independent water supplies for fire protection that include streams, rivers, both small and large lakes, and ocean water.

Potential Uses of Nonpotable Water

A significant objective of this Water Supply Concepts Manual is to examine ways to reduce required or needed fire flows **or** examine viable approaches to providing water for structural fire suppression without using water treated to EPA specifications for water treatment. This is to reduce the demand for high-quality potable water and to reduce the operating costs for water treatment facilities and the distribution pipe sizes needed to supply domestic water at peak demand **and** needed fire flows simultaneously.

It is very important to understand that water for fire protection is not the only requirement that drives the size and cost of water treatment plants and distribution system design. Typical discussion of water treatment is confined to the need of treated water to meet health standards, for residential use, hospitals, nursing homes, restaurants, and basically where water is involved in the human consumption process. Forgotten are the myriad uses of water by the Federal government, State government, county government, local community government, commerce and industry, and homeowners that may not require a high quality of water.

Potential Uses for Nonpotable Water

A dual water system that reuses treated sanitation water under less stringent criteria than potable drinking water has many uses that can significantly reduce the need for potable water from traditional municipal water delivery system. Some examples include the following:

1) Public uses:
   a) Park irrigation and water amenities, such as ornamental fountains.
   b) School or campus landscaping and playground irrigation, median strips and roadway right-of way landscaping irrigation.
   c) Recreational facilities, such as gold-course irrigation, tennis court wetting, washing, and ski-slope artificial snow.
   d) Cemeteries and nurseries.
   e) Public facility toilet and urinal flushing.
2) Public and Private Sector Fire Protection:
   a) Separate water system to provide fire hydrant water that is independent of the municipal water supply system to provide better adequacy and reliability in terms of designed flow rates at specified fire risks and pressure to supply fire department pumpers at substantially lower operating costs than is possible with combined systems.
   b) Providing piped water systems to cope with the Urban/Wildland interface problem in many States. Provide water supplies for fixed fire protection systems including foam system, water spray systems, standpipe system. Note: Probably should not be used for commercial or domestic automatic sprinkler systems.
   c) *** Key Consideration: A dual water system would improve the reliability of a water system for homeland security. If the municipal water system was contaminated or disrupted, there would be a secondary supply that could be used with portable purification units to supply domestic water as well as providing water for emergency services.
3) Industrial and Commercial Uses:

a) Cooling-tower make-up water.
b) Boiler feed water make-up water.
c) Stack gas scrubbers.
d) Process water.
e) Crop irrigation.
f) Construction, including concrete manufacturer, soil compaction, and dust control.
g) Toilet and urinal flushing.
h) Street cleaning and car washing.

4) Residential uses:
   a) Lawn watering.
   b) Toilet flushing.

All of these applications are being practiced. For example, toilet flushing with reclaimed water has been practiced in Grand Canyon Village, Arizona, since 1926. A relatively recent development in Singapore is the use of reclaimed water, originally intended for industrial process water for toilet flushing in a highrise housing estate for some 25,000 people since 1991 (3), reclaimed water has been used for toilet flushing in several highrise buildings in the Irvin Branch, CA, Water District. A growing practice in the United States is the reclamation of wastewater originating in shopping malls and office complexes for toilet flushing in the same complexes. This practice reduces the volume of wastewater discharge.

Other uses of nonpotable water include enhancing wetland and ground water recharging.

Nonpotable Water Reuse Legislation

The rapid growth in the number of nonpotable water reuse project indicates that the potential for nonpotable water reuse *needs to be* evaluated whenever communities need additional water supplies for domestic consumption and/or fire protection. In three principal States, California, Florida, and Arizona, nonpotable water reuse is stimulated through legislation. It is important to understand the current state of this legislation which is in the foundation stage for moving the application of Dual Water Systems using reclaimed water forward to meet Federal and State requirements to protect public health, and with special attention to using this type of water supply for fire protection purposes.

The following is a summary of State reuse regulations based on a survey of all States conducted by the EPA to develop guidelines for reuse of water. Appropriate regulatory agencies in all 50 States were contacted by mail in September 1990 by EPA and asked to provide information concerning their current regulations governing water reuse. After the followup contacts, all 50 States responded to the request for information. All of the information presented in below is considered current as of March 1992. The literature from the AWWA does not indicate an update on this information.

As of the stated study date above, it was determined that most States do not have regulations that cover all the potential uses of reclaimed water. The notable exceptions are Arizona, California, Florida, Texas, Oregon, Colorado, Nevada, and Hawaii, which have extensive regulations prescribing requirements according to the various uses of the reclaimed water. Other States may have regulations or guidelines that focus on land treatment of wastewater effluent. These guidelines emphasize additional treatment of effluent disposal rather than beneficial reuse, even though the effluent may be used for irrigation or agricultural sites, golf courses, and public-access lands.

Based on the survey, current regulations generally are divided into the following reuse categories:

- Unrestricted urban use for irrigation of areas in which public access is not restricted. This includes such areas as parks, playground, schoolyards, and residences; and uses such as toilet flushing, air conditioning, building construction, ornamental fountains, aesthetic impoundments, such as reflection pools, and urban and rural fire protection.
- Restricted urban reuse: irrigation of areas which public access cannot be controlled, such as golf courses, cemeteries, and highway medians.
- Agricultural reuse of food crops: irrigation of food crops intended for human consumption. This category is often further classified as to whether the food crop is to be processed or consumed raw.
- Agricultural reuse on nonfood crops: irrigation of food fodder, fiber and seed crops, pasture lands, commercial nurseries, and sod farms.
- Unrestricted recreational reuse: an impoundment of reclaimed water for which no limitations are imposed on body-contact, water recreation activities.
- Restricted recreational reuse: an impoundment of reclaimed water for which recreation is limited to fishing, boating, and other noncontact recreational activities.
- Environmental reuse: reclaimed water used to create artificial wetlands, enhance natural wetlands, and to sustain stream flows.
- Industrial reuse: reclaimed water used in industrial facilities primarily for cooling-system makeup, boiler feed water, process water, and general wash down.

Reclaimed Water Quality and Treatment Requirements

Requirements for water quality and treatment of water reuse receive the most attention in State regulations. States with water reuse regulations or guidelines have set standards for reclaimed water quality, specified minimum treatment requirements, or both. Generally, when unrestricted public exposure is likely in the reuse application, wastewater must be treated to the highest degree possible before its application. Where exposure is not likely, however, a lower level of treatment usually is accepted. The number of States with regulations or guidelines on this subject is presented in **Table 8-1**.

Water quality limits are commonly imposed on biochemical oxygen demand (BOD), total suspended solids (TSS), total or fecal coliform counts, and turbidity. Coliform counts and turbidity are generally used as indicators to determine the effectiveness of disinfection. A limit on turbidity is usually not specified or required unless there is a need to achieve a high level of disinfection.

Table 8-1: Number of States with Regulations or Guidelines for Each Type of Reuse Application

Types of Reuse	Number of States
Unrestricted Urban Irrigation	22
Toilet Flushing	3
Structural Fire Protection	2
Building Construction	4
Landscape Impoundment	7
Street Cleaning	1
Restricted Urban	27
Agricultural (Food Crops)	19
Agricultural Non-food Crops	35
Unrestricted Recreational	5
Restricted Recreational	7
Environmental Wetlands	3
Industrial	6

Reclaimed Water Monitoring Requirements

Reclaimed water monitoring requirements, as well as the type of reuse, vary greatly from State to State. For unrestricted urban reuse, Arizona requires sampling for fecal coliform on a daily basis, but for agricultural reuse of on nonfood crops, such sampling is required only once a month. Arizona also requires turbidity to be monitored on a continuous basis when a limited turbidity is specified.

California, Florida, and Washington also require continuous online monitoring of turbidity. Oregon, on the other hand required that turbidity be monitored hourly and the sampling for total coliform be conducted either once a day or once a week, depending on the type of reuse application.

California requires total coliform samples to be taken on a daily basis and turbidity to be monitored on a continuous basis. For unrestricted urban reuse, as well as agricultural reuse on food crops, Florida requires the continuous online monitoring of turbidity and chlorine residual. Even though no limits on turbidity are specified in Florida, continuous monitoring serves as an online surrogate for suspended solids. In addition, Florida requires that the TSS limit must be achieved prior to disinfection and the fecal coliform samples be take on a daily basis. Other States determine monitoring requirement on a case-by-case basis, depending on the type of reuse.

Treatment Facility Reliability

To achieve reliability in reclamation facilities, some States have adopted regulations or guidelines to ensure that reclaimed water of required quality will be delivered. Methods of ensuring reliability consist of alarms that warn of power failure of essential unit processes, automatic standby power sources, emergency storage, and the provision that each treatment process be equipped with multiple units or a backup unit.

California Title 22 Regulations provide design and operational considerations covering alarms, power supplies, emergency storage and disposal, treatment processes, and chemical supply, storage, and feed facilities. For treatment processes, a variety of reliability features are acceptable in California.

Groundwater Monitoring

Groundwater monitoring programs associated with irrigation of reclaimed water are required by Arkansas. Delaware, Florida, Georgia, Hawaii, Illinois, Maryland, Missouri, Montana, New Jersey, South Carolina, Tennessee, Washington, West Virginia, and Wisconsin. In general, these groundwater monitoring programs require that one well be placed up-gradient of the reuse site to assess background and incoming groundwater conditions with the aquifer in question. In addition, two wells are to be placed down-gradient of the reuse site. Some States also require that a well be placed within each reuse site. Florida generally requires a minimum of three monitoring wells at each reuse site, although for systems that involve unrestricted urban reuse, they require a plan to monitor typical areas. South Carolina's guidelines suggest that a minimum of nine wells be placed on 18-hole golf courses that irrigate with reclaimed water. Sampling parameters and the frequency of sampling are generally considered on a case-by-case basis.

Treatment for Reclaimed Water

The latest documented information on the general state of water regulations and basic support information on this topic is presented above. Now it is important to present some of the specific aspects of water for nonpotable use. The focus of the following information applies specifically to reclaimed water but also references not potable treatment for other uses as specified.

The major water-quality parameters include biodegradable organics, suspended solids, plant nutrients, dissolved solids, and pathogens. The required treatment of wastewater depends on the highest use of reclaimed water in the system. Usually reclaimed water is treated to meet unrestricted urban reuse, which requires the highest-quality reclaimed water.

For example, water for body-contact recreational use could require a high degree of removal of all constituents except dissolved solids. Orchard irrigation via surface furrows could require relatively lower degrees of all removals and probably no intentional removal of nutrients or dissolved solids if wastewater is the source of supply. Certain industrial water demands, such as water for cooling towers, could require a very high degree of removal of dissolved solids, including conversion of ammonia and phosphorus, and silica removal. The following information gives an overview to the treatment process:

Basic Treatment Process

1) **Biodegradable organics:** Biodegradable organics are often measured as biochemical oxygen demand (BOD), chemical demand (COD), and total organic carbon (TOC). Starting with wastewater, gravity sedimentation removes 30 to 40 percent BOD, producing water acceptable for flood irrigation. Biological processes remove 85 to 98 percent BOD, producing water acceptable for landscape irrigation, Chemical coagulation and filtration remove greater than 99 percent of BOD, producing recreation water. Activate carbon removes virtually all BOD, producing water that may be suitable for *groundwater* injection, or the replenishment of groundwater. This is a very important concept as groundwaters in most areas are receding; in fast-growing residential areas the recession process is alarming.

2) **Suspended solids:** Suspended solids often are measured as total or volatile suspended solids in all but very low concentrations (i.e., less than 5 mg/L), otherwise turbidity is used as an indication of solids concentration, and the percentage removal from wastewater is approximately the same as with BOD.
3) **Plant nutrients:** Plant nutrient is generally not beneficial for irrigation uses, where the nutrients effectively replace commercial fertilizer. Removal might be beneficial for certain industrial process where inhibition of biological growths or corrosion control is important. Nutrient-removal processes are usually specific to a given nutrient, such as P or N, or to the specific form of the nutrient, Examples would be nitrification to convert ammonia-N to nitrate-N and identification to convert nitrate-N to nitrogen gas.
4) **Dissolved solids:** Dissolved solids usually include inorganic constituents, major anions, and cautions. They are often measured indirectly as electrical conductivity, directly as dissolved solids by evaporation, or partially as specific ions. Removal of dissolved solids is beneficial to some extent for irrigation reuse and to a greater extent for various industrial uses. Dissolved-solids-removal processes vary greatly, both by method and effectiveness. Some remove dissolved solids in general, as with reverse osmosis, while others remove only one constituent, as with selective ion exchange.
5) **Pathogens:** The presence of bacterial and viral pathogens and sometimes parasites, is often measured indirectly by an indicator organism, such as coliform bacteria. The removal of pathogens is necessary for all reuses. The degree of removal required depends on the specific reuse, including the extent of direct and indirect exposure of the general public to the reclaimed-water supply. Disinfection is usually accomplished with chlorine, although other methods, such as ozoneation and ultraviolet-light radiation, are being used.

Reclamation Plants

Reclaimed water can enter the nonpotable water distribution system from a wastewater treatment plant, which provides secondary treatment as well as filtration and disinfection. Secondary treatment consists of screening and grit removal sedimentation, and low-rate treatment processes, such as stabilization ponds and aerated lagoons; or high-rate processes such as activated sludge, trickling filters, or rotating biological contractors. Experience with such plants demonstrates that a high quality secondary effluent, treated with small doses of coagulant, polymer, or both, direct sand filtration, or chlorine disinfection can meet unrestricted urban reuse requirements (Okum, 1991).

One advantage of using reclamation plants is that they can be located in the area where the reclaimed water is needed. Excess flow, excess reclaimed water, and the sludge can be returned to the trunk sewer to be handled at the central wastewater plant.

Design aspects of reclamation plants include standby power supplies, standby or replacement equipment, treatment-process redundancy, emergency storage or replacement equipment, treatment-process redundancy, emergency storage and disposal provision (including alarm systems), monitoring equipment, and automatic actuators. Operational aspects include the development, documentation, and exercise of sound routine and contingency operation procedures, and a comprehensive preventative maintenance program. All of these considerations help to ensure that only water of acceptable quality is delivered to the reclaimed water distribution system.

Storage

Matching the nonpotable water system supply with demand is important, particularly when wastewater is the course of supply for nonpotable water. Wastewater flow generally is constant throughout the year, while nonpotable demand (typically irrigation water and possibly water for fire protection) has irregular and instantaneous flow demand. The variance between supply of reclaimed water and demand can be compensated in several ways including the following:

- store enough nonpotable water to balance supply and demand;
- supplement nonpotable water with another source to satisfy peak demand;
- dispose of excess nonpotable water; and
- a combination of the above.

The reliability required of a nonpotable water system is usually not as great as that of a potable water system. This is primary true where nonpotable water is used for irrigation purposes, street cleaning, and other intermittent uses. However, if nonpotable water is to be used for toilet facilities, fire protection, and industrial process water that reliability has to design for 24-7 continuous use at specified design requirements.

Where fire flows may be provided by the nonpotable water source system, storage should be sized to meet required or needed fire flows for the representative fire risk locations. A second design possibility is to have the potable water system meet a minimum fire flow demand of 500 gpm at 20 psi throughout **ALL** built-upon areas of the community, and use treated reclaimed water to meet the difference between 500 gpm and needed fire flows (i.e., the difference between 500 gpm standard availability on the domestic system and a NFF of 1,500 gpm would be 1,000 gpm to be supplied by the reclaimed water supply). *This is an extremely important concept!*

One underlying focus of this manual is to explore possible methods of reducing required water supplies by building code and or needed fire flow developed by the ISO. Instead of considering the reduction of required or needed fire flows, it is equally important to consider alternatives for meeting the structural fire suppression water supply needs. Reclaimed water is one important way to augment existing water supplies to provide water for fire protection without enhancing a water system based on fire flows. In facts with fire flow reductions, a given water system may be more adequate to meet consumer consumption demands without needing improvements to the potable treatment plant or the distribution system to meet both consumer consumption and fire flow simultaneously.

This would require new diligence in fireground operations. Fire department pumpers operating on the domestic fire hydrant system *cannot* have supply lines also coming from a fire hydrant on a reclaimed or essentially a nonpotable water system. The reclaimed water supply **CANNOT** contaminate the treated water supply. Where the types of systems co-exist, there needs to be development and adherence to standard operating procedures. Important considerations on this matter are presented under Reclaimed Piping Systems below.

Features of Reclaimed Water Distribution Systems

The general features of Dual Water Systems as defined in this Manual which coincides with AWWA-M–24 basically considers water treated piping systems for the irrigation, lawn watering car washing, street cleaning, and some selective industrial uses with more recent attention to providing water in commercial

buildings for sanitary requirements. The distribution systems are hydraulically designed to the end user requirements which typically are low flow because irrigation is done on alternative days and the same applies to watering lawns, shrubs, greenways, etc. Constant users are car washes, and some industrial applications. Therefore, pipes along streets may be as small as 2 inches, and many systems have pipe no larger than 4 inches.

This presents a problem when reclaimed water is to be considered for fire protection. The only documented used of reclaimed water for fire protection is in Florida, California, and Arizona. It should be noted that all three States have essentially nonfreezing weather where this application is in evidence. This allows for the use of wet-barrel hydrants and the lack of requirements to bury pipelines below the frostline. The only real requirement is to provide sufficient cover for loading under roads and driveways. Since no overall standards or engineering documentation are in place concerning these issues, an actually reclaimed-water fire hydrant system used in southern Florida is presented as one possible approach to augmenting existing treated water supplies to provide water for the wildland/urban interface problems and to provide "make-up" water to meet needed fire flow in high value districts and even residential districts when there is a water shortage problem.

The waste water treatment facility is located just west of the Intercoastal Waterway. One pipeline parallels U.S. Route 1, one follows a major boulevard, and one tracks along the east side of I-95. Wet-barrel fire hydrants are located approximately every 1,000 feet along the primary line located 15 feet from the edge of the roadways. Hydrants along the I-95 corridor are located on the outboard side of the northbound lanes, 5 feet away from guard rails and 1 mile apart. The intent of the hydrant distribution along the Interstate highway is to provide water for natural cover fuel fires and other fire emergencies on the highway plus as source for refilling water tankers.

Hydrants along Route 1 and the boulevard are used to protect both commercial and residential developments along with protecting boating marinas along the coastal waterway. Smaller diameter pipes, ranging from 4 inch down to 2 inch, cross-connect along major streets that run east and west in order to provide water for lawn irrigation, car washes, street cleaning, and dry vegetation spraying. To avoid any possible confusions with fire hydrants on the treated potable water system, the fire hydrants are painted *purple* and have posted signs indicating that the water is "Treated Waste Water." The greatest fire protection use for this system has been in the control and extinguishment of brush fires in highly populated areas.

While such a system as described above is practical and rather economical to install in non-freezing climates such installation in northern climates would require frostproof fire hydrants, much deeper pipe trenches, and valving. However, the concept still has much merit as the demand for potable water increases. Care must be exercised in the design to make sure that the desired water for fire protection use is available when there is peak demands on the system for irrigation or the watering of lawns.

The Future Role of Dual Water Systems

Dual water systems, must of necessity, become larger role players in providing water supplies to populated areas to meet a significant portion of the demand for water. This Chapter has identified the many uses of reclaimed water through proper treatment. One of those area to be carefully evaluated in the future is the role dual water systems can play in meeting required and needed fire flow demands which could take away the necessity for expensive new potable water treatment plants and water main enlargements to meet both domestic water supply needs and fire flow needs.

In new communities or in the expansion of communities, consideration also can be given to shifting the water supply for fire protection to the reused water supply. This would require designing the pipe distribution system to provide needed fire flows for representative risk location at 20 psi residual pressure while maintaining the other demands such as irrigation that may be in operation at the same time. The big payoff is that this would leave the domestic water system with the challenge of just meeting consumer consumption requirements *without* meeting needed fire flows. Re-channeling the supply of water for fire protection may be a more reasonable and responsible approach to the water supply crisis than focusing on reducing the requirements and needed fire flows during extreme dry weather and to provide fire breaks.

References:

1. AWWA M–24. *Dual Water Systems*, 1994 Ed. American Water Works Association, 6666 West Quincy Ave., Denver, CO 80235.
2. Okuun, D. A. "Planning for Water Reuse." *Journal AWWA*, 65(10): 617.
3. Okuun, D. A. "Reclaimed Water: An Urban Resource." *Water Science Technology*, 24(9): 353, 1991.

CHAPTER 9: WATER SUPPLY AND EFFECTIVE FIRE PROTECTION

Overview

Most communities in the United States consider that *growth* is a good thing. Development brings prosperity to cities, communities, suburbs, and the rural environment. And many parts of America are experiencing *extraordinary* residential and commercial growth.

But, growth can also strain community resources that include but are not limited to fire alarm, and emergency communications, fire department response to structural fires and other emergencies, and, most importantly the community water system. New construction, increasing population, and expanding economic activity places demands on a wide variety of municipal services including the above three elements of public sector fire protection. In many places, the need to enlarge public services, especially those functions related to fire protection, comes at the time when other priorities are competing for the same budget dollars.

The results can be devastating. If the fire department, emergency communication facilities, and *water supply* cannot keep up with the demand for services, a growing community faces the risk of property loss and personal injuries. The purpose of this Chapter is to examine the importance of water supply in the equation of providing effective fire protection at the local government level. This includes looking at water for structural fire suppression provided by fire departments and installed fire protection provided by automatic sprinkler systems and the new water application technology–*water mist systems*. Performance considerations and economic considerations are taken into account in examining the following topic headings.

The Insurance Services Office, Inc.

Property/Casualty insurance companies have long supported the efforts of individual communities to maintain and improve there fire protection services. ISO's Public Protection Classification (PPC) program helps insurance companies measure and evaluate the effectiveness of fire-mitigation services throughout the country. (1) The PPC program also offers economic benefits in the form of lower insurance premiums for communities that invest in the firefighting services that are evaluated in determining PPCs on a scale of 1 to 10. The Community Classification is determined by evaluating the 1) public fire alarm and communication capability for receiving and handling fire and emergency calls, 2) public fire department capability to confine, control, and extinguish developing fires in structures, and 3) adequacy and reliability of the municipal water supply to deliver needed fire flows at representative *fire risks* throughout the community.

A given community is surveyed by ISO Field Representatives using the ISO *Fire Suppression Rating Schedule*. The weighted credit is assigned as follows: (1)

1) Receiving and Handling Fire Alarms..... 10 percent

2) Fire Department..... 50 percent

3) Water Supply40 percent..... 40 percent

Total 100 percent

ISO is an independent organization the serves over 1,300 property and casualty underwriters in the United States. In addition, ISO directly serves fire departments, insurance regulatory agencies, and others about fire and casualty risk levels. ISO's expert field staff visits communities around the country to collect information about the items evaluated under the *Grading Schedule* items as titled above. For each of more than 46,000 fire districts in the United States, ISO analyzes that information and assigns a PPC on a scale of 1 to 10. Class 1 represents exemplary fire protection, and Class 10 indicates that the area's fire suppression program does not meet ISO's minimum criteria; this is an "unprotected" classification for insurance rating purposes. Of special *note* is Class 9 properties. This class includes all structures that are within 5 travel miles of a fire station but are located more than 1,000 feet from a recognized fire hydrant that flows a minimum of 250 gpm. According to a recent survey by the ISO 34.8 percent of the 46,000 fire districts in the United States do not have a recognized water supply for fixed protection; that is in excess of 1/3 of the land surface of the United States. (1)

The Ability of Fire Departments to Provide Effective Fire Protection

Even in well-protected areas, growth often threatens the ability of fire department to keep up with the demand for service. (1)

Many fire chiefs believe that residential and commercial growth is threatening the ability of fire departments to protect the communities they serve. Without careful attention, long-term planning, and adequate funding, communities risk deterioration in their protection, especially in these fast-growing areas. The threat is real, even in communities where fire protection is adequate today.

Those are the most important findings from a survey of fire chiefs, water superintendents and other municipal officials conducted for ISO by the independent polling firm Opinion Research Corporation (ORC) of Princeton, New Jersey, and published in 2003. (1) ORC interviewed 500 top-level municipal officials from randomly sampled communities around the country. The survey examined current conditions as well as development likely to occur over the next 3 years. The margin of error for survey results is plus or minus 2 percentage points.

About 86 percent of the fire officials reported that their communities had experienced residential or commercial growth over the past 3 years. In those communities, almost three-quarters (73 percent) of the respondents said that the growth is straining their departments' ability to protect the communities. Asked where growth had occurred, 71 percent of the chiefs said that it occurred in areas where they needed or still need improvement to water mains, fire hydrant distribution, or hauled water services. And 50 percent said that growth had occurred in areas where they needed or still need additional fire stations.

[Sidebar: The term "hauled water" has the same reference as alternative water supplies as used in this Manual (Chapter 6).]

Fire Insurance Rates

Property and casualty underwriters use two basic factors to establish fire insurance rate premiums:

1) Fire losses or loss costs.
2) Fire protection jurisdiction PPC.

Only loss costs are used for cities of over 500,000 population; fire losses are evaluated by counties and States. (1) It should be obvious that the adequacy and reliability of water supplies has a very significant impact on both life loss and property loss reduction at the time of a fire and the PPC. If water supply does not meet demand, it could have an adverse effect on insurance premiums for both commercial property owners and homeowners–more for commercial properties and than homeowners. Conversely, the ability to meet needed fire flows in both hydrated nonhydrated areas most likely will result in premium reductions if all factors of the fire protection system keep pace with urban and suburban growth.

An Overview of Water Supply Under the ISO Fire Suppression Rating Schedule

It appears important to have a relative understanding of the items that are reviewed by the ISO Field Representatives in conducting municipal water supply evaluations. Copies of the most recent survey of a water system can be obtained from the Regional Office of ISO found in the Reference Section to this Chapter. The following information provides the highlights of each item considered, by title. (2)

- **Part of the City (Community) Unprotected:** If any part of the city is not within 1,000 feet of a recognized water system, the unprotected area may receive a Class 9 rating. A recognized water system must delivery 250 gpm for a duration of 2 hours.
- **Maximum Daily Consumption Rate (MDC):** The maximum daily consumption rate is the average rate of consumption on the maximum day. The maximum day is the 24-hour period during which the highest consumption total is recorded in the last 3-year period. High consumption that will not occur again due to changes in the water system, or water loss caused by unusual conditions (i.e., a water main break lasting less than 1 hour) will not be considered.
- **Minimum Pressure:** A water system is reviewed at a residual pressure of 20 psi.
- **Fire Flow and Duration:** The fire flow duration should be 2 hours for needed fire flows up to 2,500 gpm, and 3 hours for needed fire flows of 2,000 and 3,500 gpm as determined under Section I of the *Grading Schedule*. Requirements under Section II of the *Grading Schedule* call for a 4-hour duration for fire flows ranging from 4,000 gpm to 12,000 gpm.
- **Service Level:** A service level is a part of the city distribution system that is served by one or more sources of supply but that is separated from the remaining distribution system by closed valves, check valves, or pressured regulating equipment, or is not connected.
- **Review of Supply System:** The ability of the water supply system to deliver needed fire flow at representative locations throughout the city is reviewed under the following bullet items. For each *representative* location, the supply works, mains, and hydrant distribution are reviewed separately.

- **Supply Works:** The absolute minimum supply available from water sources under extreme dry conditions should not be taken as the measure of the normal ability of the source supply. The normal sustained flow of supplies should be used as the normal capacity of the water source. If the water supply is regularly reduced for a period exceeding 1 month, the available supply is to be prorated by the time it is available. This evaluation covers:
  - Minimum storage
  - Pumps
  - Filters
  - Emergency supplies
  - Alternative water supplies (i.e., See Chapter 6)
- **Water Main Capacity:** The normal ability of the distribution system to deliver needed fire flows at representative risk locations throughout the community, as determined by the ISO are to be evaluated. The results of flow tests at each representative test location will indicate the ability of the water mains to carry water to that location. The AWWA/ISO methods of flow testing are covered in Manual II on *Water Supply Evaluation Concepts.*
- **Fire Hydrant Distribution:** Only fire hydrants located within 1,000 feet of a representative risk location measured as fire hose can be laid by responding fire apparatus is credited to satisfy needed fire flow requirements. Maximum credit for each fire hydrant within 1,000 feet of and identified fire risk is as follows: 1) Credit up to 1,000 gpm for each hydrant within 300 feet of the location, 2) 670 gpm from hydrants within 301 to 600 feet of the location, and 3) 250 gpm from hydrants within 601 to 1,000 feet of the risk location. Furthermore, the maximum credit for each fire hydrant maybe limited by the lack of a pumper connection and the number of 2-1/2-inch house outlets and a minimum water delivery capability of 250 gpm.
- **Fire Hydrants–Size, Type and Installation:** Point awards for installed and connected fire hydrants to water delivery piping of 4 inch or larger are prorated according to the following chart:

Installation Condition	Points
with 6" or larger branch, a pumper outlet and 2 to 2-1/2" outlets	100
with 6" or larger branch, no pumper outlet and 2 to 2-1/2" or more outlets	75
with 1 to 2-1/2" outlet only	25
with less than a 6-inch branch	25
Flush type	25
Cistern or suction point	25

- **Inspection and Condition of Fire Hydrants:** The inspection and condition of fire hydrants should be in accordance with AWWA Manual M-17–*Installation, Maintenance, and Field Testing of Fire Hydrants*. (3) To receive full credit under this item, fire hydrants need to be inspected every 6 months. Reduced prorated credit is given for less frequent inspection and flow testing up to 5 years. After 5 years a hydrant is considered "unreliable" and no credit is given for the fire hydrant in protecting a specific fire risk. (3)

Insurance Company Assistance on Evaluating Water Supplies

The insurance industry can assist communities in the following ways to assess the current water supply demand requirements:

- ISO can provide an identified community with a list of the needed fire flows for representative fire risk, along with available fire flows at the time of the last community PPC Survey.

[Sidebar: See appropriate contact information through the Regional ISO Offices identified under the references.]

- ISO can provide an identified community with a copy of the last PPC Report that covers all elements of the water supply system.
- If significant changes have been made in either the water treatment facility and/or the water distribution system since the last PPC Survey, a request can be made for a new evaluation. ISO does not provide engineering advice on water supply improvements but they will provide guidelines on water supply demand for any new community development.
- The insurance carriers for property protected by automatic sprinkler systems should be able to provide both supply and demand water curves for each protected property or HPR (Highly Protected Risk) property.

The following discusses how automatic sprinkler systems can be used to reduce needed fire flow demand.

Automatic Fire Sprinkler Systems

Cote and Linville state, "Automatic Sprinklers have been the most important single system for the automatic control of hostile fire in buildings for more than a century. Among the benefits of automatic sprinkler systems is the fact that they operate directly over the fire. Smoke, toxic gases, and reduced visibility do not affect their operation. In addition, *much less water is used* because only those sprinklers fused by the heat of the fire operate, especially if the building is compartmented." (4)

The above statement points out the fact that, of all the tools available to facilitate and promote fire protection, none offers such a wide variety of benefits to the building owner, developer, fire service, water authorities including conservationists, and the general public as does the widespread use of automatic sprinkler systems. One of the most important topics of this Chapter is to review a number of factors relating to the use of automatic sprinkler systems with special attention to their *effect* on required fire flows in building codes and the *effect* on ISO needed fire flows. Finally, some initiatives need to be considered in a further attempt to encourage the use of automatic sprinklers in both commercial and residential properties.

Advantages of Automatic Sprinkler Systems

While the insurance industry can be given much credit for promulgating and advancing the use of sprinkler systems in commercial properties, the cost and benefits of sprinkler protection in the United States industrial world were realized in the early 1900s. Warehouses and large industrial manufacturing facilities typically were protected by automatic sprinklers systems. This distinction often meant the difference between a company staying in business versus not being able to recover from a devastating loss.

Long before building codes required sprinkler systems, insurance companies gave substantial reductions in premiums for properties protected by automatic sprinkler systems.

Although automatic sprinklers were not recognized immediately for their life safety features, a trend was evident that indicted reductions in fire-related injuries and deaths when sprinklers were present. Currently, large area, highrise buildings, and high-value buildings and high density public buildings of all occupancy types signify the need for automatic sprinkler systems in all of the model building codes. As of 1990 the NFPA reported in the NFPA *Journal* that there was no record of a fire in 20 years that killed more than two persons in a completely sprinklered public assembly, educational, institutional, or residential complex where the sprinkler system was maintained and operated according to the original design. (5)

[Sidebar: The two deaths reported were from smoke inhalation in an area remote from the fire area.]

The Factory Mutual Research Corporation (FM) has documented some very interesting data on automatic sprinkler operations in industrial properties from 1987 though 1997. **Table 9-1** depicts some very important performance data in terms of number of heads operating, total number of fires based on heads operating, the cumulative number of fires, the percent of the total number of fires investigated–2,860, the cumulative percent and the estimated water flow for 28 minutes of operation, which was the longest period the sprinkler system is reported to have operated on any of the investigated fires. In other words, this total water flow was a maximum flow duration and, most likely, much less where 10 or fewer heads operated. These were ordinary hazards Group 3 properties where the sprinkler design was 0.20 gpm/sq. ft. and the area of sprinkler coverage was 100 square feet; this equates to a discharge of 20 gpm per head. (5)

Table 9-1: FM Study Sprinkler Performance Operations Study (1)

Number of Heads	Fires	Cumulative Number	Percent of Total	Cumulative Percent	Projected Flow Rate in Gallons Per Minute
1	797	797	28	28	20
2	520	1,317	18	46	40
3	291	1,608	10	56	60
4	221	1,829	8	64	80
5	147	1,976	5	69	100
6	146	2,122	5	74	120
7	74	2,196	3	77	140
8	77	2,273	3	80	160
9	44	2,317	1	81	180
10	55	2,372	2	83	200
11—15	172	2,544	6	89	220—300
16—20	100	2,644	3	92	320—400
21—25	49	2,693	2	94	420—500
26+	167	2,860	6	100	520—Not Estimated

Observations:

1) Note the outstanding fact that in 83 percent of the fires studied the fires were confined, controlled, and extinguished with 10 or fewer sprinkler heads operating. Assuming a design density of .2 gpm/sq. ft. for ordinary hazard Group 3 property, the water flow would have been 200 gpm for a maximum of 30 minutes, or 600 gallons of water total. A fire of this size would have been confined to a fire area not *exceeding* 10,000 sq. ft. The water requirements from hose streams for a fire of this size in ordinary combustibles materials would have been in the range of 1,500 to 2,000 gallons of water.
2) From the above analysis it should be observed that automatic sprinklers also potentially reduce significant amounts of water damage. The cuts insurance losses two ways: 1) structural and content loss from the fire destruction, and 2) significant loss reduction from water damage.
3) From the FM study of the 2,860 fires in commercial and industrial complexes, it is important to note that even in the 6 fires where 25 or more sprinkler heads operated, the buildings of origin were saved from total destruction and could be rebuilt at a cost much less than rebuilding the entire structure. In all of the larger fires, the sprinkler heads confined the fire until the fire department could complete extinguishment with supplemental fire streams.

Water Supply Requirements for Sprinklered Properties

Under the ISO *Fire Suppression Rating Schedule*, needed fire flows represent a water flow demand based on calculations for structures and building *not protected* by automatic sprinkler systems. In recognition of the value and effectiveness of automatic sprinklers systems for the confinement, control, and extinguishment of developing hostile fires in structures and buildings, the needed fire flow requirement extends, in effect, 100-percent credit is given for all buildings within a *Graded Area* that are graded and credited as automatic sprinklered property.

The ISO-required water supply (i.e., not needed fire flow) consists of the flow required for operating sprinkler in the event of a fire and generally a hose stream allowance of 500 gpm for final extinguishment and overhaul of smoldering materials. The full range of the water supply for sprinkler heads will vary from 150 gpm to 1,600 gpm. These flows are dependent on the classification of hazard, whether the system is hydraulically designed or a pipe schedule systems in accordance with NFPA Standard No. 13 on *Sprinkler Systems*, the type of materials being stored, and the storage configuration. Under these limiting factors, the *maximum* amount of water needed for an insured building rated and codes for sprinkler protection is 1,600 gpm for the sprinkler heads + 500 gpm for the supplemental hose streams = 2,100 gpm; this is far different from needed fire flows that could range up to 12,000 gpm. (6)

Design Curves

NFPA 13 provides design criteria for automatic sprinkler system based on hazard level of the occupancy. These criteria are represented in design curves and in minimum water supply requirements. These design curves are used to determine the density required for various hazard classifications. (7) Density is defined as the flow required, in gpm per square foot, to be discharged over a selected area of operation. For example, if the density required is 0.10 gpm/foot squared and it is applied to an area of operation of 1,500 square feet, the minimum system demand, excluding hose streams, will be 150 gpm. These design curves indicate a range of basic system demands from 150 gpm for minimum light hazards to 1,600 gpm for extra hazard.

The required water supply for the sprinkler system developed for a specific fire risk from this curve may need to be increased to allow for two additional factors. To compensate for friction loss in the piping for pipe schedule systems, the normal design practice is to add 10 percent to the basic systems design. In hydraulically designed systems, discussed below, computer design models are used to select pipe sizes that will minimize friction loss for design flow and match the pipe design to available flow from water supply curves obtained for the building to be protected.

The second factor considers the hose stream allowance that needs to be included to permit the operation of inside and outside hose streams to complete extinguishment of fires in deep seated combustible materials. The hose stream allowance and fire flow duration are based on the hazard classification in accordance with the schedule in **Table 9-2**. (7)

It should be further noted that fire insurance carriers that write insurance for highly protected risks may have additional water demand requirements based on separate NFPA Standards or internal underwriting requirements. The high-rack storage of materials is a perfect example of this condition. When rack storage up to 20 feet in height is present, the design curves for ceiling sprinklers will increase to a maximum of 1,800 gpm for Class 5 unencapsulated commodities (NFPA 231C: *Covered Rack Storage of Materials*). If the rack storage is 25 feet high, the basic system will demand an increase to 3,250 gpm. (8)

Table 9-2: Hose Stream Allowance

Hazard Classification	Hose Stream Allowance Gallons Per Minute	Duration Minutes
Light	100	30
Ordinary—Group 1	250	60—90
Ordinary—Group 2	250	60—90
Ordinary—Group 3	500	60—120
Extra Hazard Group 1	500	90—120
Extra Hazard Group 2	1,000	120

Hazard Classification

It is apparent that, while sprinklered buildings are not included when determining the needed fire flow for insurance rating purposes, it is necessary to calculate the demand in order to ensure adequate water supplies to the sprinklered building. Average commercial occupancies, such as retail stores, offices, hotels, and institutional buildings, usually will fall into the category of ordinary hazard Group 1 occupancies. Warehouses and manufacturing occupancies will fall into ordinary hazard Groups 2 and 3. Occupancies in which there are highly flammable products or processes enlarge quantities will be classed as extra hazard.

The determination of special hazard classifications is defined in detail in specific NFPA Standards referenced at the end of this Chapter. These references need to be examined because automatic sprinkler system demands for potential sprinklered properties must be carefully calculated based on this data. Plans and calculations for such systems need to be submitted to the building department for the community, the fire marshal or fire protection engineer for approval and in many states the office of the state fire marshal for code compliance assurance, in addition to the insurance carriers engineering staff.

Residential Sprinklers Systems

There is an increasing requirement by local government, especially at the county level of government, to install residential type sprinklers in one and two family dwellings. One specific example is Prince Georges County located just north of the District of Columbia. There is now a sprinkler requirement for all new residential properties and rental space in existing homes. Since this ordinance was passed in 2001, there has not been a fatality in a home fire where residential sprinklers have been installed. Hostile fires in residential property with residential sprinkler protection have been confined to the room of origin or completely extinguished before the Prince George Fire Department arrived at the fire site where the system was functioning according to installation requirements. Two house fire receive moderate damage where the residential sprinkler system alarm device had been tampered with by the occupant or an electrician between 2002 and the end of 2005 when records were reported. In 2006, children were playing with matches in a bedroom and caught the bedding on fire. When the fire department arrived at the fire site, the fire was confined and extinguished by one operating residential sprinkler head. (9)

Records kept by the NFPA up to the beginning of 2006 has prompted the ISO recently to announce that it is reducing the needed fire flow for strictly single-family homes not over two stories in defined communities to a needed fire flow of 500 gpm regardless of exposure conditions. This is a *huge* reduction in required water supplies for closely built residential housing, and it will have a positive ripple effect on water supply requirements for both treated water and water supply pipe sizing.

Types of Sprinklers for Commercial Buildings

The required fire flow for automatic sprinkler systems is determined by applying the criteria in NFPA 13, *Standard for the Installation of Sprinkler Systems*. (6)

[It is extremely important to use the latest published edition of this Standard.]

Two types of sprinkler systems are in general use for commercial building:

1) Pipe schedule systems.
2) Hydraulically calculated or designed systems.

A pipe schedule systems is a sprinkler system that is designed using pipe size table with corresponding minimum water flow rates from NFPA 13. (6) A hydraulically designed system is a sprinkler system that is designed using existing or designated water supply pressure and calculating all water flow rates available for each size of piping in the system. Special sprinkler systems, such as deluge systems, occasionally are installed for special hazards. Today, it is almost essential that all *special types* of sprinkler systems be hydraulically calculated using computer modeling. (7)

Pipe Schedule Systems

The required fire flow for pipe schedule systems will vary from 250 to 1,500 gpm, based on the occupancy of the building. The required water supply at the needed residual pressure should be available at the base of the sprinkler rise to provide 15 psi at the highest elevation sprinkler head with sprinkler operating. In these types of systems the sprinkler pipe sizes are specified in the appropriate standard, and the piping is arranged like a "tree with branches" where all the branch lines and cross mains are dead

ended; not an efficient water supply system, although these systems have been around for over 100 years. (7)

Hydraulically Calculated Systems

The required water demand for hydraulically calculated sprinkler systems will vary from 150 gpm up to several thousand gpm for business, entertainment, educational, religious, industrial, and governmental buildings, based on the area of the *largest* open area room (up to 5,000 square feet) and the occupancy. The required "fire flow for any given sprinkler systems" needs to be available at the base of the riser (alarm valve) at a sufficient pressure to deliver the required fire flow through the sprinkler piping to the *design area*, with a minimum pressure at every sprinkler head of 7 psi. NFPA 13 specifies a minimum size pipe and allows for looping the piping to cut down on the head loss in the piping system. The design of these systems is based on the calculated residual pressure available at the base of the automatic sprinkler system riser when delivering the required fire flow at the point of design. The calculated residual pressure is determined from the available fire flow data in the vicinity of the building to be protection and plotted on hydraulic graph paper.

[See Manual II on Water Supply Testing and Evaluation.]

The higher the calculated residual pressure for the needed sprinkler system flow demand, the smaller the sprinkler system piping that can be used. Such flow tests should be conducted when there is peak consumer consumption demand.

For economic reasons, these sprinkler systems are designed using the highest residual pressure at which the required fire flow is available. Unfortunately this information usually is needed before the building is built, and perhaps even before water mains are extended to the construction site. Therefore, it is important that the hydraulic data used accurately reflect the hydraulic conditions that can be expected in the vicinity of the proposed building. For both types of systems, the duration for which the sprinkler system must be designed to operate varies from 30 to 120 minutes, depending on the hazard of the occupancy and the ability to remotely control water flow.

It should be noted that a lowering of the normal pressure throughout a community or a general overall intentional lowering of the distribution system pressure can result in many formerly adequate sprinkler systems becoming inadequate. Hydraulically calculated sprinkler systems do provide an advantage in this regard for responding fire departments. It is now required that the design pressure and flow for the design area be recorded on a metal plate attached to the main control valve to the sprinkler system. The valve room should be accessible to the responding fire department in case of a fire. Observation of the pressure gauge during a fire can clearly indicate if the pressure on the system is being maintained. If the riser pressure drops below the demand pressure, the fire department can boost both the pressure and flow using fire department pumpers to supply hose streams to the fire department connection. The pressure at the sprinkler riser should be coordinated with the pump operator to maintain, but not exceed, the riser demand pressure. Too-high pressures will loft the water over he sprinklers making the sprinkler discharge less effective for controlling the fire.

Standpipes

Most local building codes require standpipes to be installed in any building five stories or 50 feet in height including buildings protected by automatic sprinkler systems. Standpipes are classified as follows: (7)

- Class 1: One 2-1/2-inch fire department outlet on each floor;
- Class 2: One 1-1/2-inch tenant hose station on each floor; and
- Class 3: Combined 2-1/2-inch and 1-1/2-inch outlets on each floor.

NFPA 14, *Standard for Installation of Standpipes and Hose Systems* covers the requirements for standpipes. (7) The water requirements for standpipes are 65 psi residual pressure at the highest outlet, with 500 gpm for the first standpipe and 250 gpm for each additional standpipe, to a maximum of 2,500 gpm. These requirements apply for Class 1 and Class 3 systems. A Class 2 standpipe system requires a total supply of 100 gpm at 65 psi residual pressure at the outlets. In *fully* sprinklered buildings, the water supply must satisfy the more stringent of two demands (stand-pipe or sprinkler system). Inside hose stream allowances for hose stations supplied from sprinkler systems (not necessarily Class 2 standpipe systems) of 50 gpm each, to a maximum of 100 gpm are added to the sprinkler water supply, but no minimum residual pressure is mandated. This inside hose requirement is included in the total hose allowance that was previously discussed.

Economic Advantages of Installing Automatic Sprinkler Systems

The *economic* advantages both to communities and individual property owners realized by protecting structural properties is *no small thing* as identified in the following examples and understanding related to property insurance and water supply.

Approximately 30 years ago, in the City of Fresno, California, the City Fire Marshal, the municipal planning department, the water department, and other municipal agencies joined in developing an innovative Mater Plan for Fire Protection. The plan was based around features of the insurance industry *Grading Schedule* combined with an integrated system of codes and ordinances. Prior to development of the master plan, the fire department budget represented approximately 13 percent of a total municipal budget of over $14 million dollars. At that time, the fire department was rated Class 1, but the water department was only rated a Class 3.

The codes and ordinances adopted as part of the new plan included a "dangerous-building ordinance" which gave the fire marshal authority to condemn property unsafe, a fire hazard, or unsanitary or that presented a clear and present danger to the community. Owners of condemned property had a choice of selling their buildings to an urban renewal agency or renovating the building to code standards, which included *mandatory automatic sprinkler systems.* In addition, all new construction required complete automatic sprinkler systems under the Federal Urban Renewal Agency Agreement with the city. (7)

At the time of this action, Fresno covered 21 square miles with a population of 115,000. The fire department maintained 68 career firefighters on duty at all times after full implementation of the mater plan development work for assistance in the sprinkler enforcement program. At the end of the program, 95 percent of all buildings in the urban renewal area were completed with automatic sprinkler protection. This area alone covered 40 square blocks of nonresidential property. Fire losses were reduced at least 22 percent a year after implementation of the sprinkler program, and the fire department retained a Insurance Class 1 rating.

All of this work and code enforcement results in more efficient distribution of municipal funds under the total municipal budget, and the water department classification rating changed from a 3 to a 1. The end result was reduced insurance premiums for all commercial classes of property in the city and added 10 percent to 30 percent insurance reduction for properties actually protected by automatic sprinklers

At about the same time period, a serious hardware store fire occurred in a community of about 14,000 population outside of Buffalo, NY. The building was brick wood-joist construction with no opening to exposures on both sides; one an insurance agency and the other a drug store. The fire was fought by the village volunteer fire department and three area fire departments operating under mutual aid. The building was essentially "gutted" but the exterior walls stayed intact on there was only smoke and water damage to adjacent occupancies.

The owner-occupant decided to rebuild and, with the advice of his insurance agent, installed a wet pipe automatic sprinkler system. The insurance agent showed the owner how the sprinkler system would pay for itself in 9 years through reduced property, content, and liability, and business interruption insurance. The owner also had the peace of mind that the likelihood of a second damaging fire was almost nil. This also had a positive impact on the water system by reducing the representative needed fire flow at that location to 500 gpm. (10)

In relation to the *Fire Suppression Rating Schedule*, every level of local government from the county, to the cities, to the towns, to the villages, need to understand that any commercial building that is coded and rated as sprinklered property for insurance purposes does not of and by itself have a needed fire flow requirement. The fire flow requirement is for the sprinkler system and the supplemental hose streams as indicated above in this chapter.

Based on the growing performance record of residential sprinkler systems, it is expected that more insurance reduction credit will be given for installed residential sprinkler systems in one-and two-family dwellings. In new developments that have a requirement for residential sprinklers, the needed fire flow is reduced to 500 gpm through the community. This has an impact on the need for new water mains and water treatment requirements.

The installation of automatic sprinkler systems in both residential and commercial properties is a win-win situation for both individual property owners and for municipal water supply systems.

Water as an Effective Fire Suppression Agent

Water has been used for fighting structural fires in America since the first fire department was organized in New Amsterdam, which was renamed New York City in 1664. Water is the agent of choice for structural fire suppression for many reasons: (11)

- The general ability of water from fire hydrants in communities that have a municipal water system.
- The general availability of water in suburban and rural areas without fire hydrant service from farm ponds, wells, small lakes, creeks, streams, and, in many locations larger rivers and lakes.
- These water sources can be used to provide *separate water supplies* for structural fire suppression, as discussed in Chapter 10. These water resources also can be used with dry hydrants to refill mobile water tankers and transport water to fire sites or, where feasible, by use of mobile pumpers that can be used to pump water directly to fire sites.
- Water is the least expensive of all the types of fire extinguishing agents currently available.
- It is available in a liquid state over a wide range of temperatures extending from 32 °F (0 °C), to 212 °F (100 °C), or the boiling point of water.
- Both treated and untreated water are generally considered safe to use in human and animal environments when *properly* applied through sprinkler heads or fire department nozzles.

- It is most normally selected to control and extinguish structural fires because its nontoxic, noncorrosive, and is stable over a wide range of conditions. This means that when water H_2O is applied to a developing fire in ordinary combustible materials, the water does not break down into the basic elements of Hydrogen (H) and Oxygen (O), both of which would encourage fire growth.
- Water can be applied to building fires while occupants are still in the building under approved fire-suppression techniques. This is not the case with some gaseous extinguishing agents, which may cause asphyxiation or adverse health side effects.

The Physical Properties of Water

It is essential that community officials, including the chief executive officer and staff, along with the water superintendent and fire chief understand the physical properties of water the permits the use of water as an effective fire extinguishing agent. The fundamental considerations include the following, documented by the NFPA. (2)

[Sidebar: The term "structure" is used in this Chapter to denote both unoccupied and occupied buildings for the sake of simplicity. Model building codes generally reference structures as being unoccupied and buildings as being generally occupied. This distinction will be made where the water application could be injurious to occupants still in a building when the initial fire attack is made on a developing fire.]

1) At ordinary room temperatures in a structure, water exists as a stable liquid. Water viscosity in the range of 24 to 210 °F remains constant, which allows water to be transported in water mains and pumped by fire department pumpers through fire hose.
2) Water has a high density, which allows it to be discharged from fire hose lines with nozzles and projected into structures on fire. Water's surface tension allows it to exist from small droplets to a solid stream.
3) The latent heat of fusion is the amount of energy required to change the state of water from a solid (ice) at 32 °F to a liquid. Water absorbs 143.4 Btus per pound in this process.
4) The specific heat of water is 1.0 Btus per pound. Therefore, raising the temperature of 1 pound of water180 °F from 32 °F to 212 °F requires 180 Btus.
5) Water is an effective cooling agent because of its high *latent* heat of evaporation (i.e. changing water from a liquid to a vapor) which is 970.3 Btus per pound as will be described below.
6) Water expands in its conversion from a liquid state to a vapor state from 1,600 to 1,700 times the liquid volume. One gallon of water produces 223 cubic feet of steam. Therefore, it follows, that 1 gallon of water at room temperature applied to a fire and converted to steam (**complete conversion)** will have the following results.
   a) Heat required to raise the temperature of water to boiling: 212 °F - 68 °F (Average room temperature) = 114 °F. 114 °F × 1 Btu/lb × 8.33 (Weight of 1 gallon of water) = 1,200 Btu.
   b) Heat required to change water from a liquid to a vapor:
      970.3 Btu/lb × 8.33 = 8,083 Btu
   c) Total heat absorbed is 1,200 Btu + 8,083 = 9,283 Btu/gallon of water

The above concepts are extremely important to *effective* fire suppression as can be observed in the following example. A fire department hand-held hose stream discharging 100 gpm *could* have the potential capability to absorb 928,300 Btus per minute in a complete conversion from a solid state to complete steam

conversions; this represents 100 percent effectiveness of using water to extinguish fire through both absorbing heat and oxygen displacement. This is realized by recognizing that the same fire department hose stream has the capability to create 22,300 cubic feet of steam in the conversion process.

To achieve this capability, water has to be applied in the form of a fog stream with finely divided particles in contrast to solid fire streams supplies by a tapered nozzle. A solid fire stream has been determined from numerous structural fire tests by the Western Actuarial Bureau to have only 10 percent or less of the cooling capacity of fog steams. In fact, 90 percent of the water applied from solid streams results in run-off with little or no extinguishing capability and may just do water damage inside a structure fire. (11)

All of this explains why the effective progress of a fire attack on a developing structure fire can be estimated and evaluated by observing the volume of smoke and condensing steam coming from the involved building. This has to be emphasized in the training of fire suppression personnel and especially in the training of tactical fire officers. Fire suppression personnel should be acquainted thoroughly with the characteristics of condensing steam and be able to evaluate the information it conveys on the fireground. Condensing steam can be observed and recognized instantly when projected against the sky. It is visible to the human eye in daylight or darkness. Observe a picture of the old steam locomotives when exhausting steam; the live steam is invisible as it comes from the exhaust valve. However, as it expands and loses some of its heat, the process of condensation begins and the expanded cloud of steam becomes visible. Condensing steam contains insufficient heat to cause physical injury. This has been used as a concern for *not* using fog nozzles to generate steam. To avoid any possible injury from steam generation at structure fires, the following three prerequisites are essential:

1) Fire suppression personnel needs to be trained to stay close to the ground or floor level where the attack is initiated since the steam will rise to the highest point of the enclosure.
2) Immediately after the initial fire attack, ventilation is required on the floor above the fire level or at the roof level for single-story structures.
3) *Complete* personal protective clothing is required for all fire service personnel making the fire attack; this includes self-contained breathing apparatus (SCBA) and the helmet ear flaps need to be down after the face piece is in place.

Above all, training fires need to be extinguished before attempting a real-world fire attack on a structure that could produce volumes of steam.

When all of this is in place, structural fire suppression effectiveness will significantly improve and the actual use of water to extinguish fires will be reduced for the communities that employ effective fire suppression which reduces water consumption records. As a final reminder, the following listing demonstrates the effective uses of water as a percent function for the cooling potential of 1 pound of water:

100 percent of efficiency—1,150 Btu/lb

75 percent of efficiency—863 Btu/lb

50 percent of efficiency—575 Btu/lb

25 percent of efficiency—288 Btu/lb

10 percent of efficiency—115 Btu/lb

Recall from above that a straight fire steam, whether from a hand hoseline or a master stream appliance has only about 10 percent of water efficiency. The above numbers clearly indicate the inefficiency of applying water by straight stream method, although this method may be necessary for coping with deep-seated fires and for overhauling fires. Water that is not used effectively in fire extinguishment often results in more water damage to the property than the fire itself.

The Latest Methods for Improving Structural Fire Suppression Effectiveness

Two fast-growing developments in structural fire suppression may have a significant impact on water demand needs for specific occupies and for initial fire attack in the near future.

First, is the use of water mist technology for special-hazard fire problems and for protecting one- and two-family homes.

Second, is both the introduction of Class A Foams and the technology to apply these foams for the reported dramatic improvement of confining and extinguishing developing structure fires to the room or area of origin.

Each of these approaches to improved structural fire suppression is examined separately.

Water Mist Fire Protection Systems

Since the early 1980s, there has been a very strong interest in the fire protection field considering the use of fine water sprays, better known now as *water mist*. The basic concept of *water mist* is as follows:

> Water is ejected from special nozzles at pressures ranging from 800 psi to 1500 psi to form sprays of finely divided water particles applied to generally confined areas where combustibles are present to extinguish a developing fire by the dilution of the air or oxygen content and by creating a water vapor through the space; maybe better defined as steam. The steam is generated from the rapid evaporation of the water droplets in the heated area surrounding the fire.

Instrumented tests of *water mist* application to room fires indicates that not only does it rapidly reduce oxygen content in the room which is needed for fire development but the *water mist* provides a very rapid cooling of the entire atmosphere which is important to confining the fire to the point of origin.

The concept of high-pressure fog for extinguishing ordinary combustible fires is not a new phenomenon. High-pressure fog nozzles were used on the "booster lines" of fire apparatus back in the 1950s. However, the lack of proper firefighting training resulted in many injuries to firefighters and therefore this type of equipment lost favor with the fire service. Installed *water mist* systems of today are an outgrowth of earlier technologies in structural fire suppression.

Fixed water mist systems is a subject of very high interest to all aspects of the fire protection field at the present time. In 2006, the Marriott Corporation was doing extensive studies of water mist applications to control and extinguish developing fires in residential occupancies to the item of origin or confine damage to the room of origin, first as a life safety measure, and second to minimize fire, smoke, and water damage to the room of origin. These sponsored tests were conducted at the University of Maryland as a cooperate effort between the Department of Fire Protection Engineering and the Maryland Fire and Rescue Institute. (12)

The term "*water mist*" implies a very fine water spray that remains suspended in air for an extended period of time. The term reflects one of the qualities of a spray (i.e., the drop sizes are very small)

relative to raindrops, or to the spray from automatic sprinkler heads. For example, there are three basic characteristics that influence its effectiveness as an extinguishing agent:

1) The density of the spray, (mass of suspended water per unit volume of space).
2) The velocity with which it is delivered to the seat of the fire.
3) The quantity of water itself (which may contain dissolved additives to enhance suppression.

There are four characteristics of water mist for fires suppression purposes:

1) Drop size distribution.
2) Flux density.
3) Spray momentum.
4) Additives.

The current characteristics for Water Mist System are covered in NFPA 750, *Standard on Water Mist Fire Protection Systems*, 2003. (13)

Water Demand and Flow Duration

The water discharge rate for water mist systems is determined from full-scale fire tests for the type of hazard to be protected. Testing has been done on a wide range of fire scenarios, including shipboard cabin space for passenger ships through the Maritime Commission, machinery spaces, computer rooms, telecommunication centers and wire rooms, laboratory facilities of many kinds and both single- and multiple-family dwellings, along with hotels and motels. Research reports from these testing programs indicate flow ranges from 7 to 30 gpm for spaces occupied by humans. Machinery spaces may require flows up to 60 gpm. The recommended discharge period in NFPA 750 is 30 minutes. This implies that the needed water supply ranges from a minimum of 210 gallons to a maximum of 900 gallons for occupied spaces and a maximum of 1,800 gallons for machinery spaces. Compared to all other types of fire extinguishing methods with water, this is a tremendous reduction is water supply for fire control, confinement, and extinguishment. Remember, the fire tests conducted include water for final extinguishment.

Special Considerations for Residential Fire Protection

The following material addresses applications of *water mist* that applies specifically to the residential property classification. It should be understood that significant research on *water mist* for residential properties is ongoing. One important example is the cooperative effort of former fire chief and now Director of Corporate Fire Protection, Sonny Scariff, Marriott International, Inc.; Deputy Chief Michael Love, Montgomery County, Maryland, the Maryland State Fire Marshal's Office; Gary Briese, Executive Director for the IAFC; Dr. James Milke, Department of Fire Protection Engineering, University of Maryland; which formed a partnership to do *water mist* testing on room fires in hotels, motels, multiple occupancy residential properties, and single-family dwelling. (14) Other research is on-going at the NIST, Underwriters Laboratories, Inc. (UL) FM, and private organization including "Hi-Fog" Water Mist Fire Protection, Inc.

In the United States, the greatest loss of life from fire continues to be in the single-family home. Many fire protection leaders feel that this Nation has reached the limit to which we can **dramatically** further reduce the numbers of those injured and killed by fire each year in our country. (14)

Using current approaches to fire protection, it does not appear that this Nation will decrease the number of lives lost in residential fires much further than reported by NFPA in 2005. What may be even worse is that the numbers may actually increase, given that our fire services are being called upon to accomplish so much more in the post 9-11 environment. The American fire service is now an emergency services delivery system that is the first responder to any emergency eventuality**.** In order to make a major shift in the status quo, it is essential that new concepts and applications be applied to protect residential occupants from hostile fires.

Of further importance, in 2005, 82 percent of the fire deaths in America occurred in the home, to say nothing about the associated property loss from these deadly fires. Based on data from both the NFPA and the USFA: (14)

- On the average, single-family residential fires kill 9 people every day in America.
- On the average, 45 residential fires are reported every hour across the Nation.
- Single-family residential-type fires account for nearly 6 billion dollars in direct property damage each year since 2000 (with the dramatic increase in hosing costs this number will climb).
- Fires in homes are a constant threat from the largest cities to the smallest towns, in communities of all economic levels, in both newly constructed dwellings and in dwellings built many, many years ago.

In response to this carefully documented fire problem in residential properties, many communities are passing ordinances that require the installation of residential sprinkler systems in **new** residential construction. No documentation has been found on any requirement for retrofitting residential sprinklers in homes. Retrofit water mist fire protection systems just may be the answer for the proper protection of residential properties without affecting the municipal water system demand. The Marriott Corporation, along with the Hi Fog Corporation, are currently (2006) conducting live burn tests in a single-family dwelling at the Maryland Fire Rescue Institute facility, College Park, MD, to study different retrofit *water mist* technologies relating to nozzle type and placement nozzle pressures, and the amount of water to be stored in high-pressure cylinders, types of alarming devices in relation to a wide range of fire scenarios in the living room, kitchen, dinning area, and bedrooms while providing fire protection for all occupied space. This work should form the basis for writing a standard on the design, installation, and testing of *Water Mist Systems for Residential Occupancies.* (14)

Class A Foam Fire Protection

Ever since World War II, a number of different additives to water have come on the market in hopes of improving fire protection in general. Of significant importance has been the development of several foam concentrates to be used with water for the extinguishment of flammable liquid or Class B fires. More recently, Class A foam agents have been developed for ordinary combustible materials, with the objective of improving structural fire suppression effectiveness using both hand-held fire streams and used in conjunction with automatic sprinkler systems. The fire service literature claims that Class A foam makes fire streams up to 100 percent more effective than plain water. A larger view of the fire protection literature, including some full-scale fire tests and laboratory tests at the NIST in Gaithersburg, MD, point out that there are a number of variables associated with determining the effective use of Class A foam with fire streams. The percent of increased effectiveness in the use of Class A foam with automatic sprinkler systems is definitely positive but, again, is dependent on the type and arrangement of the combustible fuel loading.

At the beginning of 2006, there appears to be a significant amount of confusion about Class A foam concentrates and their application to structural fire suppression.

A first consideration is that Class A foams do not contain chemical fire-retardant compounds. Class A foam has it's origin with forest and wildland firefighting since the early 1980s. Today, this Class of fire-retardant chemicals is considered by many forest officials to be the agent of choice when making wildland and forest air drops in advance of an oncoming flame front(s).

Key Concept: The forestry service Class A fire retardants **are not** the same as the synthetic Class A foam agents for structural fire suppression. These two Class A foam agents should not be confused.

The NFPA definition of a chemical fire retardant is "any substance, with the exception of water, that by chemical action reduces the combustibility of fuels or slows down their rate of combustion." A Class A foam concentrate approved for structural fire suppression is classified as a fire suppressant." As a fire suppressant, UL and other approval agencies state that Class A foam concentrate is mixed with water and directly applied to *burning fuels* to provide both blanketing and wetting actions. Furthermore, Class A foams for structural fire suppression do not *chemically inhibit fuel ignition*. (15)

Listed below are some basic characteristics of Class A foam agents for structural fire suppression:

1) There is promotional material on Class A foam that appears to confuse firefighters concerning the finished foam as a chemical fire retardant. The issue revolves around the facts concerning the possible delay in ignition by the efficient wetting of fuels that absorb moisture, such as a dwelling with unsealed wood siding that is threatened by fire exposures. Indications are that one should not expect the Class A foam approved for structural fire suppression to act as a fire-retardant agent. Fire retardants generally are applied to fuel surfaces before the flames approach. This they continue to retard fuel ignition even after the water mixed with the chemicals evaporates from fuel surfaces. The retardant action continues to occur for a specific time period based on the specific agent after application. (15)
2) Once Class A foam for structural fire suppression has been applied and has evaporated, ignition can reoccur if final extinguishment has not been achieved and proper overhaul procedures are not carried out. There is little evidence to indicate that Class A foam solutions approved for structural fire suppression will chemically inhibit fire ignition.
3) Another issue concerns single applications of Class A foam solution to ordinary combustibles. Tests indicate that after a single Class A foam application, the water evaporates, **or** the heat content of the burning material boils off internal moisture, and erupts in flames after the materials reach ignition temperatures. This is why it is essential to either reapply the foam solution to the burning material or after "flame knockdown" complete the extinguishing process with water.

Despite these considerations, there are a lot of real-world success stories about using Class A foam for structural firefighting, and almost all new fire engines are being equipped with foam proportioning systems for Class A foams or compressed air foam systems. Journal articles and books are promoting the use of Class A foam for structural fire suppression. The following points appear to present the best current understanding on the use of Class A foam as predicted in the fire service literature:

- Class A foam delivered from 1-1/2- to 2-inch hoselines with fog nozzles have demonstrated very effective knockdown of developing fires and single and multiple family homes, barn fires, and small commercial building fires.
- Depending on the area of the fire involvement, the initial fire attack has extinguished the fire. However, re-applications are needed to prevent reignition, which indicates that below the foam surface

ignition temperatures still exist. Foam followed by a water application appears to be the most effective way of controlling the fire and extinguishing the fire.

- Less water is used when Class A foam is employed for the initial fire attack, except where the building is fully involved upon arrival of the first fire apparatus. Some of the best success stores come from volunteer fire departments that protect rural areas without a municipal water supply.
- A comprehensive training program involving fires at a training center or buildings that are to be town down is a **must** for firefighters who are going to use Class A foam.
- The ISO has recognized the use of Class A foam by giving credit for carrying the type of foam on fire department pumpers.

References

1. Insurance Services Office, Inc. "Effective Fire Protection–National Concern." Insurance Services Office, Inc., 545 Washington Blvd., Jersey City, NJ 07310-1686.
2. _____. *Fire Suppression Rating Schedule*. Insurance Services Office, Inc. (ISO), 545 Washington, Blvd., Jersey City, NJ 07310-1686.
3. AWWA-17. *Installation, Field Testing, and Maintenance of Fire Hydrants*. American Water Works Association, 6666 West Quincy Ave., Denver, CO 80235.
4. Cote, A.E., and J.L. Linville, eds. *Fire Protection Handbook*, 16th ed. Quincy: National Fire Protection Association, 1986.
5. Isman, Kenneth E. *Automatic Sprinkler Systems*. Ch. in NFPA *Fire Protection Handbook*, 18th ed. Quincy: National Fire Protection Assocation. 2000.
6. NFPA 13: *Standard for the Installation of Sprinkler Systems*, 2002 Edition.
7. American Water Works Association—M-31. *Distribution System Requirements for Fire Protection*. American Water Works Association, 6666 West Quincy Ave., Denver, CO 80235, 1989.
8. NFPA 232: *Standard for the Protection of Records*. Quincy: Author.
9. Unpublished material by the Marriott Corporation, Washington, DC, 2005.
10. National Board of Fire Underwriters, S.I.B. *Value of Automatic Sprinkler Systems, 1968*.
11. Layman, Loyd. *Attacking and Extinguishing Interior Fires*. Boston: National Fire Protection Association, 1952.
12. Marriott Corporation, Unpublished Literature, 2005.
13. NFPA 750, *Standard on Water Mist Fire Protection Systems*. Quincy: Author, 2003.
14. Mawhinney, Jack R. *Water Mist Fire Suppression Systems*, NFPA *Fire Protection Handbook*, 19th ed. Vol. I. Quincy: NFPA, 2003.
15. David and Colletti, *The Rural Fire Fighting Handbook*. Lyhon's Publishing.

Chapter 10 Separate Water Systems and Emergency Water Supplies

Part I

During the middle 1800s and up to 1915 the United States experienced what often has been referred to as the "Age of Conflagrations." Major fires in large cites and some smaller cites during this period literally destroyed the commercial areas of the city and, in some cases, the whole community. The more significant fires occurred during the San Francisco earthquake, the conflagration-type fire that ripped through Chicago, the downtown business fire right after the turn of the century in Baltimore, MD, and the shipyard fire that spread throughout much of Charleston, SC. The list is rather extensive as depicted in **Table 10-1**.

Table 10-1: Famous Conflagrations in the United States Occurring Prior to 1915

Date	Location	Property Destroyed	Dollar Loss*
1835	New York, NY	Buildings covering 13 acres	$ 15,000,000
1845	Pittsburgh, PA	1,000 buildings	$ 3,500.000
1849	St. Louis, MO	425 buildings, 45 steamboats	$ 3,500,000
1851	San Francisco, CA	2,500 buildings	$ 3,500,000
1861	Charleston, SC	Ships, docks, and business district	$ 10,000,000
1866	Portland ME	1,500 buildings	$ 10,000,000
1871	Chicago, IL	17,430 buildings–250 people killed	$ 168,000,000
1871	Pestigo, WI	17 towns destroyed by forest fires–1,052 people killed	$ No loss data
1872	Boston, MA	776 building–13 people killed	$ 75,000,000
1874	Chicago, IL	Waterfront buildings	$ 5,000,000
1889	Seattle, WA	Commercial and residential properties	$ 5,000,000
1889	Spokane, WA	Commercial and residential properties	$ 6,000,000
1189	Boston, MA	52 commercial buildings–4 killed	$ 3,600,000
1889	Lynn, MA	Commercial and residential properties	$ 5,000,000
1892	Milwaukee, WI	Commercial district	$ 6,000,000
1900	Hoboken, NJ	Piers and steamships–326 killed	$ 4,600,000
1901	Jacksonville, FL	Commercial and residential properties	$ 11,000,000
1902	Paterson, NJ	525 commercial buildings	$ 5,500,000

1904	Baltimore, MD	80 city blocks in the central business area	$ 50,000,000
1906	San Francisco, CA	28,000 buildings–earthquake/conflagration	
		452 killed or missing	$ 350,000,000
1908	Chelsea, MA	3,500 buildings, 11 killed	$ 12,000,000
1911	Bangor, ME	267 buildings, 2 killed	$ 3,189,000

* Fire losses are estimated for the year of the conflagration type fire. These numbers do not reflect growing economic values. (1)

As with most large-scale fires in cities and communities, the water system in each incident was overtaxed. Water pressures dropped with the number of hosestreams placed into operation to the point where fire streams were not effective and it is reported that hosestreams were shut down to establish a perimeter around the fire to keep it from spreading. The fires in Baltimore and Chicago destroyed the entire commercial districts, while the earthquake that started fires in San Francisco all but destroyed the whole city because the earthquake disrupted the entire water system.

In response to the water-supply-crisis during these fires, the idea of establishing independent water supplies that would supply special fire hydrants to support higher pressures so that hose-line could be fed off from the hydrants without pumping equipment to provide required pressures on nozzles at the end of hoselines. These individual water systems, which are separate from the domestic treated water system, are still in existence in some major cities. A brief description of two current systems is provided below.

1. Baltimore, Maryland.

This city essentially rebuilt its individual fire water system some 30 years ago by placing the pumping station at the lowest level to the block-square central fire station located a half mile from the waterfront. The water supply comes from two 20-inch suction pipes leading from different locations in Chesapeake Bay, and travels underground to the pumping equipment in the fire station. Trash racks are used to filter out any debris from the bay water. Water leaving the pumping station is treated with injected chlorine as a disinfectant, but the water does not meet EPA standards for drinking water. A 20-inch loop main extends around the high-value district of downtown Baltimore with interconnecting secondary feeders along major streets. Special high-pressure hydrants are primarily located at the intersection of many streets and painted a distinguishing *orange* color in contrast to the red fire hydrants on the domestic water system. In the older part of the downtown section of the city, fire hydrants are located at least every 1,000 feet on the secondary feeders. The pumping station has the capability to deliver up to 10,000 gallons of water a minute at pressures up to 300 psi. (2)

The system pressure is kept at 60 psi to monitor any possible leaks or breaks in the water system. On routine first-alarm fires, water is supplied from fire hydrants on the domestic water system to supply mobile pumpers. The high-pressure system is activated on demand by the highest ranking fire officer at a fire site or emergency. The system was most recently use when a CSX freight train traveling through Baltimore derailed in a tunnel with a hazardous cargo and caught fire. (3)

2. New York, New York.

The old high-pressure individual water system in New York City was replaced in the 1960s with a different type of individual water supply approach to augment the domestic water system used for normal fire-suppression operations. The water supply for New York City is unique in that the water source comes from reservoirs and lakes in the Catskill Mountains, 80 to 120 miles from the city limits. Water is transported by gravity pressure through 10-foot aqueducts to treatment plants north of the city. Large water mains are installed in a grid system through the streets of New York. However, the piping system is very old, so the pressures are kept relatively low, and building pumping systems are used to develop the higher pressures required for the multistory buildings. Due to the very old building construction going back to the mid-1600s in what is referred to as "loft buildings," the FDNY has to fight some very challenging fires and, in doing so, the loss of life on this fire department is quite high.

A 40-inch main now runs parallel to Broadway in New York City, and is cross-connected every 10 blocks to the Hudson River and the East River. On the river fronts at these cross-connector are located a battery of fire hose connections. Either mobile fire pumpers or fire boats can pump water from the two rivers as required to pressurize the individual water supply which, in turn, supplies special "steamer" or 6-inch outlets on fire hydrants mounted on this special pipe network. (4) At the time of the 9-11 disaster at the twin towers in New York, the domestic system supplied an estimated 8,000 gpm for firefighting while the individual water system provided another 10,000 to 12,000 gpm for an approximate total of 20,000 gallons of water being pumped at the fire site every minute during and after the collapse of the towers. This gives another dimension to the terrific nature of this event. (5)

A Current Need for Individual Water Systems for Fire Protection

The water supply below the aquifer is diminishing at a rapid rate in population growth areas. On a community water system in southern Maryland, the required well depth was 57 feet in 1960. Forty-six years later the well depth is 759 feet, and the water system is running out of water. The cost of treating water to meet EPA water-quality standards is rising exponentially. It appears that a significant portion of these costs, along with meeting higher consumer demand plus building-code-required fire flows, and the ISO needed fire flows is becoming an extremely costly consideration for taxpayers. The key consideration here is that water for public fire protection over 500 gpm should be studied and costed out as a *separate* water supply for considerations as an intelligent alternative to the way water is being supplied to communities today. Water supplies in excess of 500 gpm to handle the initial attack on developing structural fires do not have to be treated water that meets EPA water quality standards. It only needs to be screened to prevent trash, leaves, and other debris from entering the intake to supply pumps; a literature search to review Federal and State water supply requirements for fire protection indicates that only chlorination is required to prevent microorganisms from forming the pipe lines. This reduces the needed fire flow on the municipal water system, it adds reliability to the water supply for fire protection, it conserves water for domestic use, and, economically, it should reduce taxes and property/casualty insurance rates. The design and installation of individual water systems could be a Federal works project reducing the financial burden of these systems on local governments.

Basic Design Concepts for Individual Water Supplies for Fire Protection

Three separate types of water systems have been identified on the East Coast. Two of these systems are operational, and the third is in the planning and design stage. The communities involved have requested that only generic information be presented at the request of the municipal Attorney's Office. A conceptual scheme for each system is provided.

1) **System 1:** The following system is located in a northeast State. The community population is about 7,500 people and is located on a substantial river that typically has a very good year-around flow rate in million gallons per day past the suction point for the individual water system. This suction point is upstream of the water treatment plant. The community has two old mill buildings, a fair-size business district and a Federal enclave of buildings, plus residential areas. The community also serve a farming region and has a rather large commuter population to a larger city.

   The community dates to the Civil War era and the buildings are either brick wood-joist or frame construction; the old mill buildings, even though modernized, still are heavy beam and timber construction with a wood roof and wood siding requiring a needed fire flow of 6,500 gpm. Fire flow tests in the area indicate an available fire flow of 3,550 gpm under an average daily consumption rate. Therefore, there is a significant deficiency in meeting the community need fire flow at several locations.

   In order to increase the available fire flow without improvement to the water treatment facility and the distribution system, the fire department sought the advise of a civil engineer for the County Department of Soil and Water Conservation. Plans were made to use the nearby river as a water supply to feed a loop main around the business district with separate fire hydrants to be painted blue in contrast to the regular red fire hydrants. Fire hydrants were located 500 feet apart around the loop. A pump house was located 200 feet from the volunteer fire station, and a concrete pad was installed so that two mobile fire department pumpers also could draft water from the river and pump water into the loop main as a reliability factor to the pump house, or to pump directly into the loop main using 6-inch connections with the necessary reducers for the supply hose being used. Check valves were installed to prevent backfeed to either the industrial pump or to the mobile fire department pumpers. Weatherproof bourdon gauges where installed so the residual pressures could be monitored at the supply connection. The objective was to provide the best possible volume at any fire hydrant on the loop at 20 psi residual pressure.

   The stationary pump selected was a diesel-driven industrial water pump that could deliver 2,000 gallons of water a minute at 50 psi header pressure. Separate flow tests after the pump house installation indicted a flow of 2,000 gpm at 20 psi by the old mill buildings, and 1,850 gpm at 20 psi by the middle school on the back side of the pipe loop. These flow were increased at the same pressures by almost 1,000 gpm when a 1,500 gpm mobile pump also was pumping into the system. Therefore, in a severe emergency, the community water system could potentially provide 3,500 gpm for fire suppression and the individual water supply could provide an additional 3,000 gpm for a total of 6,500 gpm within the business district of the community. Using large-diameter hose and relay operations, the two individual water systems should be able to meet all needed fire flows throughout the community including the Federal enclave. The community has not been regraded by ISO since the individual water supply was placed in service.

2) **System 2: An Individual Primary Feeder Pipe to Supply Fire Hydrants in Florida**

In central Florida there is an island that is located between the Atlantic Ocean and the Intracoastal Waterway. For a stretch of about 12 miles in a highly developed resort area of highrise buildings, there is an installed independent 10-inch water main that runs South from a pumping station that takes water from the Intracoastal Waterway. Nonfrostproof fire hydrants with only a pumper connection are located every 1,000 feet on this pipeline. The pumping station has two 1,500 gpm pumps that have discharge pressures of 100 psi. One pump is electric drive and one pump is diesel drive. The discharge piping is arranged and gated to provide for independent or parallel pumping into the water main. Water flow tests at the time of the installation indicate that a minimum of 3,000 gallons can be delivered at 20 psi residual pressure on any three consecutive fire hydrants located on the independent water source. This supply is in addition to the normal municipal water supply availability. (7)

3) **System 3: An Independent Water Supply with Two Supply Points to Protect Two Adjacent Communities**

On one of the eastern Great Lakes there are two communities that have a common political jurisdiction line. The larger of the two communities have a population of about 27,000 and is located adjacent to the lake; this will be identified as Community #1. There are several small industries in this community that are dependent on the lake water. The municipal water supply comes from the lake, and fire protection is provided by a combination career and volunteer fire department.

Community #2 is about 3 miles inland from the lake and is home to a moderately sized university and supports an agricultural surrounding area with retail stores, shops, banks, restaurants, and hotel/motels. This community supports a volunteer fire department, and the public works department has charge of the water supply system. Water supply comes from a manmade reservoir with a high-level dam located 2 miles from the village limits.

Both communities have underground water supply piping that is at least 100 years old on many residential streets and the needed fire flows in each community is less than 50 percent adequate in the high value districts and in the perimeter residential areas. The second community has a special water supply problem. During the harvest and canning season, water flows in the main business district have been recorded as low as 135 gpm at 20 psi residual pressure by a fire protection engineer.

The two communities have embarked on a joint water supply program that is both unique and based on a cooperative agreement between the two communities to prove significantly improved water supplies for fire protection and improve the reliability of treated water for each community in case of drought conditions for Community 2 or ice blockage on the intake lines to the treatment plant for Community 1. The basic planning has been completed by a professional engineering firm with a fire protection engineer on the staff. A cost development study is in progress, and funding is being sought through grants to implement the plan.

[Sidebar: The two communities combined experienced from a low of 75 structural fires per year to a high of 111 fires per year from 1995 to 2005.]

The cost development study will assess the potential impact on property insurance rates, needed improvement costs to the existing water supply treatment facilities, water distribution system piping costs, and cost revenues from supplying nontreated water for municipal and industrial uses, and possibly for supplying water to be treated for consumer consumption between the two communities during peak-demand periods and for emergency purification in case of a water system disruption.

The general plan calls for frostproof hydrants with pumper connections to be located every 500 feet in the business, commercial, and industrial areas of each community and 1,000 feet in the residential

areas where the existing fire flow from the treated water system is less than 500 gpm at 20 psi during periods of maximum daily consumption. The details for this smaller piping layout had not been completed at the beginning of 2006, and probably will not be available until the funding source(s) are in place for the primary piping system. For this manual, it is the basic concepts that are important as a means of meeting fire flow requirements while reducing the needed expansion of two water treatment plants and enhancing the water distribution piping system. The following points identify the significant features of this plan:

- In Community 1, a separate water pumping station would be supplied by lake water where the intake is 10 feet below the 50-year lake drought index as measured by a hydrologist. Two 2,000 gpm pumps would be located in the pumping station that can be controlled by the water treatment plant operator. One pump would have an electric driver and the second pump would be diesel driven with remote start capability. In order to monitor the pipe condition, 25 psi static pressure would be maintained on the piping system at all times. Note: This includes all of underground piping for both communities up to the two control valves.
- Community 2 would provide untreated water from the reservoir through two primary feeders to the identified control valves. The Public Works Department that provides staffing 24/7/365 would activate these valves as requested by the water treatment facility in Community 1 based on actual flow demand. Water from the reservoir would enter the pipe network at about 80 psi, and the pressure profiles would balance through the individual distribution system.

While this is a conceptual plan at this writing, the potential for transferring the demand for fire protection water supplies higher than 500 gpm and for reducing the need for treated water supplies for a variety of uses, plus the potential for emergency water supplies to be discussed later as a function of Homeland Security deserves a second look. Even if the cost-benefit analysis is not promising for the experimental program, it may be more feasible for larger population groups. This is an example of thinking "outside the box" from current standards and textbooks to solve both current and future water demand issues.

Part II: Emergency Water Supplies

The concept of emergency water supplies as referenced by the AWWA pertains to implementing procedures to provide potable water in the event that a municipal water supply system is in a failure mode for whatever reason.(8) A failure mode could apply to a section of a community because of a pipe failure, or to the entire community if there is a drought and the water supply source dries up. These are two example of water system unreliability where emergency water supplies need to be transported or otherwise provided for a community population, or the population has to be evacuated to a community that has an ample water supply.

After 9-11 the conceptual framework of emergency water supplies has taken on a different perspective. A water system could be knocked out by a terrorist attack that physically disrupts the water treatment facility, the water distribution system, or biologically contaminates a community's water supply source, which is the equivalent of having a "dried up" water supply. Likewise natural disasters such as floods, earthquake, and severe weather can create disruptions to water supplies.

In response to such events, it is essential that municipal government officials, water supply superintendents and their staffs, the fire administrator/fire chief and senior fire officials along with consulting engineers plan for and initiate an emergency water supply delivery program to transport potable water to specific areas of a community or to the entire community.

Three independent methods of transporting potable water for human consumption are identified below. There are other techniques that are being evaluated at the present time, especially where the community is located in the vicinity of a salt-water source. Water superintendents will learn more about this from future AWWA publications.

1) **Method 1:** Provide an underground secured vault interconnection between two different potable water systems. Examples include adjacent communities, or communities with a separate potable water system provided by a college or university, a State or Federal government facility including a military base, or a private water company that services the public school system in some counties; obviously there are other examples. The AHJ may require backflow prevention devices so that one system cannot backflow to the other system after the emergency condition has been corrected.
2) **Method 2:** A separately valved fire hydrant is placed at the remote point on Water System A near an adjacent water system. The adjacent Water System B also has a separately valve-controlled fire hydrant within 50 feet of Hydrant A. A 1,000- to 1,500-gallon mobile fire department pumper is arranged to pump from one system to the other; this can be from Hydrant A to Hydrant B or Hydrant B to Hydrant A. Discharge pressures should not exceed 40 psi unless approved by the water supply superintendent for the receiving water system, or a staff member. Overpressurization could cause another pipe failure.
3) **Method 3:** Some county fire and emergency services organizations have a converted a used "milk tanker" pulled by a semi-tractor as an emergency vehicle that can fill and transport 8,000 gallons of water to individual buildings (e.g., schools, nursing homes, hospitals, apartment buildings, etc.) in case they lose their municipal water supply or a well system goes dry. Because of the operating costs involved this type of water transport is best implemented where there is a county-level office of emergency services and a fire station or an emergency service training facility that can house the mobile tanker for what should be considered infrequent use. Maintaining the sanitation of tankers that are seldom used can be problematic. One alternate is to contract with firms who transport dairy products or other potable liquids to supply these emergency support services.

   There is still another approach to providing potable water to buildings or areas where either the municipal water supply is out of service, or wells run dry. The Navy especially, and now all branches of the military services including the National Guard have portable water-purifying equipment that uses reverse osmosis to purify nonpotable water from streams, lakes, rivers, and even salt water from the oceans. An environmental company on the West Coast has built a prototype fire department pump that has a combined reverse osmosis and water-treatment package so that the pumper can take draft from essentially any water source and pump either nonpotable water for fire suppression or potable water to be delivered through a special polyvinyl hose to fill water cans for domestic use.

References:

1. NFPA *Fire Protection Handbook*. 12th ed. Quincy: National Fire Protection Association, p. 1-56.
2. American Insurance Association (A.I.A.) S.I.B., 1969.
3. "Baltimore Sun" newspaper article., Sept. 16, 2001.
4. American Insurance Association (A.I.A.) S.I.B., 1969.
5. "Special 9-11 Report." *Fire Engineering*, Jan. 2002.
6. American Water Works Association-M-31. *Distribution System Requirements for Fire Protection*. American Water Works Association, 6666 West Quincy Ave., Denver, CO 80235, 1989
7. Florida State Fire Marshal's Report, Mar. 1996.
8. American Water Works Association-M-31. *Distribution System Requirements for Fire Protection*. American Water Works Association, 6666 West Quincy Ave., Denver CO 80235, 1989.

Taylor, Tammy

From: Levenson, Michelle
Sent: Wednesday, January 27, 2021 3:32 PM
To: Taylor, Tammy; Reid, Rachel
Subject: Fw: Project ID P1490 NCLH NOP of EIR
Attachments: NCLH Letter to Lai and Levenson 4, 01262021.docx; Attachment A NCLH BOS Letter to PC Oct. 7, 1953_20210113_0001.pdf; Attachment B NCLH Actual 1953 CUP Page 1_20210113_0001.pdf; Attachment C NCLH Actual 1953 CUP Page 2_20210113_0001.pdf; Attachment D NCLH Director Summer's Letter to BOS Page 1 _20210113_0001.pdf; Attachment E NCLH Director Summer's Letter to BOS Page 2_20210113_0001.pdf

North Coast NOP

From: John Bruce Corcoran <BruceCorcoran@msn.com>
Sent: Wednesday, January 27, 2021 3:22 PM
To: Lai, Thomas <TLai@marincounty.org>; Levenson, Michelle <MLevenson@marincounty.org>; envplanning@maincounty.org <envplanning@maincounty.org>
Subject: Project ID P1490 NCLH NOP of EIR

Dear Acting Director Tom Lai, Senior Planner Michelle Levenson, and Environmental Planning Manager Rachel Reid,

I am submitting for the North Coast Land Holdings NOP of EIR comment period my 7-page letter as a Word document with 5 attachments.

Regards,

Bruce Corcoran

Bruce Corcoran
184 Great Circle Drive
Mill Valley, CA 94941

January 26, 2021

Acting CDA Director Tom Lai, Senior Planner Michelle Levenson, Environmental Planning Manager Rachel Reid
Via E-mail

RE: Notice of Preparation of Environmental Impact Report North Coast Land Holdings, LLC Community Plan Amendment, Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal Permit, Project ID: P1490 APN(s): 043-261-25; 043-261-26; 043-262-03; 043-262-06; 043-401-05; 043-401-10; 043-401-16; 043-402-03; 043-402-06

Summary: CDA's version of the 1953 Conditional Use Permit (CUP) for the former Golden Gate Baptist Theological Seminary in Strawberry is demonstrably incorrect. Contrary to CDA's version, the 1953 CUP has only one condition, namely, that **"prior to any construction or improvement, the applicant shall secure the approval of the Marin County Planning Commission."** The 1953 CUP does not contain a condition for a student body of 1,000 students, as CDA claims. As a consequence, the current applicant (North Coast Land Holdings) does not have a vested right for a student body of 1,000 students, which CDA has incorrectly maintained for years. CDA's incorrect version of the 1953 CUP has caused the Strawberry Community and other stakeholders irreparable harm. Among other things, the amended Notice of Preparation of Environmental Impact Report is both incorrect and misleading. CDA is required to provide the EIR consultant with a clear understanding of the base case according to the provisions of the 1953 CUP and Strawberry Community Plan.

Dear Acting Director Tom Lai and Senior Planner Michelle Levenson,

Thank you for your e-mail memorandum dated November 20, 2020, in which you provided me with your version of the 1953 Conditional Use Permit (CUP) for the former Golden Gate Baptist Seminary (Seminary) property in Strawberry.

Since my last letter to you about this subject dated November 18, 2020, I have conducted my own research about the 1953 CUP, and my findings contradict your version. The most striking differences between your version and my findings are related to two key documents that you failed to provide to me, even though they are part of the historical public record. After hours of trial and error searching, I was able to find them myself without your help.

BOS October 7, 1953 Letter to Planning Commission

The first missing document (see attachment A) is a letter dated October 7, 1953 from the Marin County Board of Supervisors to the Planning Commission that confirms the Board's approval of a CUP for the Seminary in concurrence with the recommendation of the Planning Commission. This letter was received and stamped by the Office of the County Clerk the following day. This one-page document is entitled "Excerpt from Minutes" of the Marin County Board of Supervisors meeting held on October 6, 1953, and it records the Supervisors' unanimous decision to grant a Use Permit to Edward D. Landel, the Seminary's representative, as follows:

> **RE: Application for Use Permit –Edward D. Landel**
>
> **The Planning Director addressed the Board in favor of granting a Use Permit to permit the construction of a Theological Seminary and dormitories on the approximately 130 acres of real property, lying adjacent to and south of Strawberry Manor Subdivision Four. Dr. Graves, President of the Seminary now located in Berkeley, addressed the Board, and on motion of Supervisor Schultz, seconded by Supervisor Kehoe, the Board concurred in the recommendation of the Planning Commission to grant a Use Permit to Edward D. Landel, subject to the condition that prior to any construction or improvement, the applicant shall secure the approval of the Marin County Planning Commission.**
> **AYES: All**
> **Noes: None**
> **Absent: None Attest: Geo. S. Jones, Clerk**

According to this first missing document, the Supervisors approved the 1953 CUP with only one condition.

Actual Second Page of the 1953 CUP

Inexplicably, the second missing document (see Attachment C) is the actual second page of the 1953 CUP dated October 13, 1953 that was signed by Planning Director Mary A. Summers that same day and was signed by Golden Gate Baptist Theological Seminary representative Edward D. Landel on October 15, 1953. This missing actual second page states the sole condition of the 1953 Conditional Use Permit, agreed to and signed by both parties, as follows:

> **This permit was granted subject to the following condition:**
>
> **That prior to any construction or improvement, the applicant shall secure the approval of the Marin County Planning Commission of a development plan as provided under Section 11.23, paragraph (f), Ordinance No. 264, as amended.**

There are no other conditions attached to the actual 1953 CUP.

Actual Complete 1953 CUP

Putting both pages of the actual 1953 CUP together (see Attachments B and C), we have a very clear and simple authorization, namely:

> **A Use Permit is hereby granted authorizing Edward D. Landel to permit construction of a Theological Seminary and dormitories and other buildings incidental to such use, subject to the following condition… That prior to any construction or improvement, the applicant shall secure the approval of the Marin County Planning Commission of a development plan as provided under section 11.23, paragraph (f), Ordinance No. 264, as amended.**

Planning Director Mary R. Summers's October 6, 1953 Letter to BOS

In contrast to the clear and simple actual 1953 CUP, your version is a subjective construct of different documents that you have cobbled together. Based on the documents you have provided to me in your e-mail message dated November 20, 2020, your version of the 1953 Conditional Use Permit apparently rests, not on the missing actual second page of the Use Permit, but on Planning Director Mary A. Summers's October 6, 1953 letter to the Board of Supervisors, in which she reported her summary of the "general facts" discussed at the Planning Commission hearing in response to comments by various stakeholders (see Attachments D and E). One of those "general facts" is a student body of "around 1,000 students," which you incorrectly have claimed is a condition of the 1953 CUP.

In rebuttal to your version, I posit to you that "general facts" are not conditions of approval, which even Planning Director Summers herself reveals in her letter in her own words by separating and distinguishing between the two and by concluding her summary with the statement that the CUP was granted **"subject to the condition that prior to any construction or improvement, the applicant shall secure the approval of the Marin County Planning Commission of a development plan as provided under Section 11.23, paragraph (f), Ordinance No. 284, as amended."** If Planning Director Summers had intended "general facts" to be conditions, then she would have included them in her letter as conditions, but she did not do so. More specifically, if Planning Director Summers had intended a student body of around 1,000 students to be a condition, then she would have reported that element as a condition in her letter, but she did not, because it was not a condition. She reported only one condition to the Board of Supervisors as stated above.

So here we have the third document that states that there is only one condition attached to the 1953 CUP (although this document lacks the gravitas of the two previously referenced missing documents that either were stamped by the County Clerk or signed by both applicant Edward D. Landel and Planning Director Summers).

Therefore, if vested rights are based on the 1953 CUP, then current applicant North Coast Land Holdings does not have a vested right for a student body of 1,000 students.

CDA's Incorrect, Confusing Version of the 1953 CUP

If, on the other hand, you continue to hold the position that vested rights are based on the "general facts" in Planning Director Summer's October 6, 1953 letter, then, to be consistent, all of the other "general facts" must be vested rights as well. Otherwise, your position is arbitrary and selective. In addition to a student body of "around 1,000 students," those other "general facts" include:

- Seminary will operate as a "self-contained unit"
- A buffer of recreational land will surround the entire property; adequate land on site for student recreation and parking
- Seminary will provide apartments on site for the expected 60% of student body that are married, and will provide dormitories on site for unmarried students
- A post-graduate college would be an asset to the neighborhood
- Seminary will be responsible for paying its fair share of local services
- Seminary will provide a well-coordinated development plan showing location of buildings and land uses for County review

So which is it? Given my findings, will CDA continue to recognize vested rights based on Planning Director Summer's letter, or will CDA concede that vested rights are based on the actual 1953 CUP? Confusion still persists because you never have acknowledged any of the other "general facts" as conditions of approval and vested rights. I repeatedly have tried to solicit a clear answer from you, but you have obfuscated each time.

CDA's Mischaracterization of 1953 CUP Benefits NCLH, but Harms Strawberry Community

Your mischaracterization of the actual 1953 CUP has conveyed to NCLH a vested right for a student body of 1,000 students that does not exist. This mischaracterization has benefited the applicant who wants to maximize income with the largest student body and the most units of housing possible without regard for any "pesky" limitations of the 1953 CUP and Strawberry Community Plan, but it has caused the Strawberry Community irreparable harm because we want a project that conforms to the 1953 CUP and Strawberry Community Plan.

In addition, the Strawberry Community also has been harmed in the following ways:

- At the November 10, 2020 Board of Supervisors (BOS) Meeting, Supervisor Connolly proposed an amendment to the Notice of Preparation of Environmental Impact Report (NOP) to include notification of a project with a student body up to 1,000 students. He intended his amendment to be a public clarification of what he believed at that time to be a condition of the 1953 CUP, but his belief was based on your incorrect version of the 1953 CUP. The BOS unanimously approved his amendment. So now we have an incorrect and misleading NOP in the hands of the public and the independent EIR consultant.
- Your position that the applicant has a vested right for a student body of 1,000 students has bestowed on NCLH a lever with which it has extracted concessions from the Strawberry Community that otherwise would not have been considered. After 18 months of what members

of the Strawberry Community thought were good faith meetings, NCLH abruptly walked out of the Seminary Tomorrow negotiations without any agreement because it would not commit to a substantial reduction from 1,000 students. NCLH used the Seminary Tomorrow meetings, which were sanctioned by Supervisor Sears, for its own gain—to discover our ideas for a better project and to learn our willingness to make concessions, but with no intention of ever reaching a compromise agreement.

- According to the sole condition of the 1953 CUP, the applicant is required to secure the approval of the Marin County Planning Commission. However, the November 10, 2020 BOS hearing that denied Riley Hurd's appeal and approved the NOP was designed in such a way as to bypass the Planning Commission. The Planning Commission has not vetted the current application, which is different from the application that the Planning Commission vetted three years ago. Although the Strawberry Design Review Board vetted the current application and unanimously voted to deny the application and to deny the NOP, the Strawberry Community did not have the opportunity to present its case to the Planning Commission. The BOS made its determination to deny the Riley Hurd appeal and to approve the NOP without the recommendation of its own land use experts on the Planning Commission. The Planning Commission's opinion also will be bypassed in the NOP scoping period that ends on January 31, 2021. The usual approval process that includes a Planning Commission hearing has been circumvented to the detriment of the Strawberry Community.
- The Community Development Agency (CDA) is supposed to give the independent EIR consultant guidance based on the land use limitations in the 1953 CUP and the Strawberry Community Plan, which is the governing document for Strawberry. You are required to provide the independent EIR consultant with a clear understanding of the base case, i.e., a project built out according to the provisions of the 1953 CUP and Strawberry Community Plan, but you have turned the process on its head by either mischaracterizing or simply ignoring the actual contents of these administrative laws. For example, as previously discussed, there is no condition for a student body of 1,000 students. In addition, all of the private market rate housing allocated in the SCP for the Seminary property already has been built, and only student and faculty housing remains to be built, but you have accepted an application with all private market rate housing and no student and faculty housing at all as a "conforming" project. Moreover, prior to the approval of the 1984 Master Plan, County Counsel opined that housing for Seminary students and faculty were "specialized units," that would <u>not</u> be included in the calculation of inclusionary housing. With the completion of the sale of land for private housing in the 1990s, the inclusionary housing requirement for the entire Seminary property was satisfied. Therefore, the exclusionary housing requirement for the Seminary should not be required again, but you are allowing NCLH to destroy student and faculty housing and then you are awarding the applicant with additional density bonuses. The SCP never envisioned or approved a commuter graduate school with no student or faculty housing on campus. A commuter graduate school will not improve the housing shortage because students and faculty will have to find housing off campus, and it will increase traffic congestion and emission of greenhouse gases from both commuters and private market renters. The EIR process is not supposed to be an open-ended one in which the independent EIR consultant has total discretion to determine the size and

scope of this project without clear guidance from CDA about legal and administrative precedents. Unfortunately, the prevailing attitude of CDA is that if NCLH wants a project with new land uses, then all NCLH has to do is simply amend the 1953 CUP and Strawberry Community Plan by crossing out inconvenient provisions with a red pen. It's easier for CDA to amend existing regulations than to risk the potential complications of enforcing them, so CDA rarely enforces anything, but if the 1953 CUP and Strawberry Community Plan have no legal standing, then what's the point of all of these public hearings? The Strawberry Community also has rights, but CDA is not defending our rights with the same zeal it provides to NCLH.

- The County/CDA and NCLH are aligned in the EIR process because they share the same goal, namely, to cram as many housing units on the Seminary property as possible. The County/CDA is concerned about meeting the requirements of new state housing laws. The more housing units on the Seminary property, the fewer housing units required on unincorporated properties in other Districts of Marin County. Texas big oil Fasken Trust, NCLH's parent, is motivated by corporate greed. The greater the number of housing units on the Seminary property, the greater the total of rental income and profits. Even though CDA also is supposed to defend our interests, not just the applicant's interests, the Strawberry Community is left to fend for itself against this powerful alliance.

Conclusion

Mr. Lai and Ms. Levenson, this is my fourth letter to you seeking clarification of the County's position about the 1953 CUP. You have not been forthcoming in your responses to me. In fact, you have made things more difficult for me. In your last reply, you told me to look for answers to my inquiries in a packet of material from 2014 that you claim to have sent me. Getting your clarification about the 1953 CUP should not be this difficult. It is a straight forward matter.

For all of these reasons, the Strawberry Community is concerned that we will not get a fair hearing during the EIR process. You have overridden the unanimous determination of our Strawberry Design Review Board, so there is no semblance of local control over development projects in our own community. NCLH turned the Seminary Tomorrow meetings into a complete waste of time for the Strawberry Community, so we are farther apart now than ever. You have mischaracterized or ignored our governing documents, so there are no limits to what you will allow NCLH to build. We cannot even get a straight answer about CDA's position on the 1953 CUP, so we have lost trust in CDA and County government. We are frustrated by the record of applicant-centric bias, and we are upset because we have been disrespected and marginalized at every turn.

Our fate is in the hands of unelected County administrators and planners, none of whom lives in Strawberry or knows our community as well as we do. Similarly, only one of five elected Supervisors is directly accountable to us. While I continue to hope for the best outcome, I fear that Dick Spotswood's recent November 10, 2020 Marin IJ op-ed, entitled "Developer Makes Mistake in Pushing Deceptive

Strawberry Seminary Plan," is correct—without NCLH's willingness to compromise, this application will be decided in a court of law.

Very truly yours,

Bruce Corcoran

OFFICE OF THE COUNTY CLERK

MARIN COUNTY BOARD OF SUPERVISORS
SAN RAFAEL, CALIFORNIA

TO: PLANNING COMMISSION DATE OCTOBER 7, 1953

EXCERPT FROM MINUTES, MEETING HELD OCTOBER 6TH , 1953

RE: APPLICATION FOR USE PERMIT - EDWARD D. LANDEL

The Planning Director addressed the Board in favor of granting a Use Permit to permit the construction of a Theological Seminary and dormitories on approximately 140 acres of real property, lying adjacent to and south of Strawberry Manor Subdivision Four. Dr. Graves, President of the Seminary now located in Berkeley, addressed the Board, and on motion of Supervisor Schultz, seconded by Supervisor Kehoe, the Board concurred in the recommendation of the Planning Commission to grant a Use Permit to Edward D. Landel, subject to the condition that prior to any construction or improvement, the applicant shall secure the approval of the Marin County Planning Commission.

AYES: ALL
NOES: NONE
ABSENT: NONE

RECEIVED
OCT 8 1953

ATTEST: GEO. S. JONES
CLERK

USE PERMIT

Under the provisions of Section 20 of Ord. No. 264, the Zoning Ordinance of the County of Marin, State of California.

A USE PERMIT is hereby granted authorizing Edward L. Landels (Name of person)

to permit the construction of a Theological Seminary and dormitories and other buildings incidental to such use, subject to the attached con- (Use of land, building or structure proposed to be conducted) dition.

At _____ (Street address or location) in Strawberry Point (Name of locality or community)

between East Strawberry Drive (Street or Highway) and West Strawberry Drive (Street or Highway)

Map No. 13300 by J. C. Oglesby, Registered Civil Engineer, known as "Plat of Portion Strawberry Point, Marin County, California" on property legally described as: Lot ___ Block ___ Tract ___ on lands of S. R. Neider, lying south of Ricardo Road (Here indicate any other legal description other than metes & bounds

situated in a R-1, One-Family Residence District.

Area of site 130 acres ± (Square ft. or acres) Dimensions of site ____ft. by ____ft.

Distance from front of structure to street line _____ft.

Property owned by S.R.Neider, 1075 California Street, San Francisco, Calif. (Name and address)

If there are special conditions under which this Use Permit is granted, a statement of such conditions is attached hereto and the permit is conditional thereon.

The use permitted hereby shall be conducted and shall conform in all particulars to the provisions of all applicable laws and ordinances. Failure to comply with all the aforementioned provisions and conditions will be cause for the cancellation of this use permit by the County Planning Commission.

APPROVED AND CONFIRMED BY BOARD OF SUPERVISORS, COUNTY OF MARIN, STATE OF CALIFORNIA, ON THE 13TH DAY OF OCT 1953.

Geo. S. Jones, County Clerk

MARIN COUNTY PLANNING COMMISSION

By Mary R. Summers
Mary R. Summers
Planning Director

Date October 13, 1953

The permit was granted subject to the following condition:

That prior to any construction or improvement, the applicant shall secure the approval of the Marin County Planning Commission of a development plan as provided under Section 11.23, paragraph (f), Ordinance No. 264, as amended.

MARIN COUNTY PLANNING COMMISSION

Mary A. Summers
Planning Director

October 13, 1953

I agree to conform to the above condition.

Edward D. Lowen,
Applicant

Address

Date Oct. 15 1953

RECEIVED
MARIN COUNTY
COMMISSION
FEB 17
DATE

The permit was granted subject to the following condition:

That prior to any construction or improvement, the applicant shall secure the approval of the Marin County Planning Commission of a development plan as provided under Section 11.23, paragraph (f), Ordinance No. 264, as amended.

MARIN COUNTY PLANNING COMMISSION

Mary R. Summers
Planning Director

October 13, 1953

I agree to conform to the above condition.

Edward D. Lowen,
Golden Gate Baptist Theological Seminary
Applicant

[illegible] Bend Blvd
Address
San Rafael

Date Oct 15 1953

RECEIVED
MARIN COUNTY
PLANNING COMMISSION
FEB 17
DATE

October 6, 1953

Board of Supervisors
Court House
San Rafael, California

Honorable Board of Supervisors:

It is understood that you have agreed to consider the application of Edward D. Landel for a Use Permit to permit the construction of a Theological Seminary and dormitories and other buildings incidental to such use on certain real property generally described as approximately 130 acres more or less, lying adjacent to and south of Strawberry Manor Subdivision Four, where Ricardson Drive intersects with Reed Boulevard, Marin County, California.

The Commission heldd this application at their meeting last evening. They received two (2) communications in writing thereon, one to the effect that they were not in favor of the granting of this application until some plan is submitted showing some access roads, the other opposing thereto.

At the meeting there was considerable discussion which brought out the following general facts:

1. The 130 acres will be developed in general, as shown on the plan for land use, in such a manner so as to make a self-contai unit, with major residential streets of the Str...berry Point neighborhood going by the development rather than through it.

2. A buffer of recreational open land of varying width will surround the entire holding, and adequate lands will be available for recreation of the studentbody and the parking of automobiles.

3. The studentbody will consists of around 1,000 students, about 60% of these students will be married and the seminary will provide apartments on their land for these students, and a pre-school nursery for the children of these families. Dormitories will be provided for the unmarried students.

4. It was brought out by those in favor that a college community, particularly of a post-graduate nature,

was an asset to a neighborhood and that its general effect was to increase surrounding property values.

5. It was also brought out that the seminary will of necessity have to contract with local districts in order to secure service and that in so doing, they would be paying their way for their fair share of the expense of the local service districts.

6. It was felt that the assure a well coordinated plan, the County should review a development plan which would show the location of buildings proposed for construction and uses of land.

Upon a motion by Commissioner Marsh, seconded by Commissioner Upton, the Commission unanimously resolved to recommend to your Board, the approval and confirmation of its decision to grant a Use Permit to Edward D. Landel as above setforth, subject to the condition that prior to any construction or improvement, the applicant shall secure the approval of the Marin County Planning Commission of a development plan as provided under Section 11.23, paragraph (f), Ordinance No. 264, as amended.

Respectfully submitted,

MARY R. SUTHERS
PLANNING DIRECTOR

MRS:jm

Taylor, Tammy

From: Reid, Rachel
Sent: Monday, February 01, 2021 11:33 AM
To: EnvPlanning
Subject: Fw: NCLH EIR Scoping Letter, Project ID P1490
Attachments: NCLH NOP for EIR 01312021F.docx; SCP Map 4C_20210201_0001.pdf

Forwarding to include with NOP letters

From: John Bruce Corcoran <brucecorcoran@msn.com>
Sent: Monday, February 1, 2021 11:32 AM
To: Lai, Thomas <TLai@marincounty.org>; Levenson, Michelle <MLevenson@marincounty.org>; Reid, Rachel <rreid@marincounty.org>
Subject: NCLH EIR Scoping Letter, Project ID P1490

Dear Acting CDA Director Tom Lai, Senior Planner Michelle Levenson, and Environmental Planning Manager Rachel Reid,

Please add my attached letter, including the accompanying SCP Map 4 pdf, to the NCLH EIR scoping documents.
Thank you.

Regards,

Bruce Corcoran

Bruce Corcoran
184 Great Circle Drive
Mill Valley, CA 94941

January 31, 2021

Acting CDA Director Tom Lai, Senior Planner Michelle Levenson, Environmental Planning Manager Rachel Reid
Via E-mail

RE: Notice of Preparation of Environmental Impact Report North Coast Land Holdings, LLC Community Plan Amendment, Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal Permit, Project ID: P1490 APN(s): 043-261-25; 043-261-26; 043-262-03; 043-262-06; 043-401-05; 043-401-10; 043-401-16; 043-402-03; 043-402-06

Dear Acting CDA Director Tom Lai, Senior Planner Michelle Levenson, and Environmental Planning Manager Rachel Reid,

My wife Fran and I have been actively engaged in monitoring the development plans for the former Seminary property for the past 40 years. We have been involved with the 1982 Strawberry Community Plan, the 1984 Golden Gate Baptist Theological Seminary (GGBTS) Master Plan, the sale of land for development of the Seminary Cove Condominiums in 1997, the first ministerial extension of 1984 Master Plan in 2009, the 2011 HartMarin development plan fiasco, the second ministerial extension of the 1984 Master Plan in 2012, the 2015 North Coast Land Holdings development plan for The Branson School plan debacle, the 2017 expiration of the 1984 Master Plan, and now NCLH's current development proposal.

Of particular note, Fran was appointed by the Board of Supervisors in 1981 to serve on the Citizen Advisory Committee to update the Strawberry Community Plan. The Committee members worked tirelessly that year meeting weekly to prepare a community plan that was both inclusive and comprehensive. All stakeholders were invited to participate and all of their comments were given careful consideration. The result was the Strawberry Community Plan (SCP), which was adopted by the Board of Supervisors in February 1982. The SCP has proven to be durable. Three of the four major development areas studied—Watertank Hill (Strawberry Vista), De Silva Island, Strawberry Spit (Strawberry Shores) —have been completed according to the SCP years ago. Only the Seminary remains just partially built according to SCP.

Therefore, we can provide the EIR consultant with a first-hand historical perspective of the goals of the Strawberry Community, the failings of GGBTS and NCLH to meet those goals, and the attendant

determinations of County planners and administrators, Planning Commissioners, Supervisors, and County Counsel.

Based on our direct experience, we offer the following items for the EIR consultant's consideration:

1. The 1982 Strawberry Community Plan (SCP) is the governing document for re-development of the former GGBTS property because SCP is more specific that the Countywide Plan (CWP). A new NCLH Master Plan can only be approved if it is consistent with the goals, policies, objectives, and programs of the SCP and CWP, and it would not be detrimental to the public interest, health, safety, convenience, or welfare of the County. (MC 22.44.070) Please measure your recommendations against the SCP.
2. NCLH's intention to amend the SCP with red-line-strike-outs is an abomination and an insult to the Strawberry Community. To illustrate how unfair this procedure is, I am attaching SCP Map 4. Notice the red line running down the entire left side of Map 4. With the stroke of a pen, NCLH completely guts the SCP and the work of the Citizens Advisory Committee with this single red line. Unlike the inclusivity sought by the 1982 Citizens Advisory Committee, NCLH is proposing an audaciously large plan with multiple new uses without consideration of other stakeholders. NCLH must be reminded that its application is for the last major project in Strawberry, and that as each year passes, its ability to complete the remainder of development according to the SCP becomes increasingly difficult because other projects in Strawberry and in other areas along the Highway 101 corridor already have been completed and have used up available resources. The current application will face long delays unless NCLH is willing to collaborate and compromise with all stakeholders. Please keep this reality in mind during your review.
3. As long as SCP is the governing document for Strawberry, we recommend for clarity the use of SCP MAP 4 in the EIR analysis rather than adopting nomenclature of the applicant's invention. Map 4 summarizes the land use and "maximum desirable" development of the former Seminary property in each of the 8 distinct areas on the Map. Area 6, the location of campus buildings and student and faculty housing, is by far the largest area. Note that Area 6 also includes the area surrounding the Forested Knoll, which is connected to the main campus by a thin neck of land along Chapel Drive. The current application does not conform to the land use in SCP because NCLH is proposing to build all market rate rental housing in Area 6, which is an area designated in SCP for student and faculty housing only.
4. Upon the sale of land on the periphery of the Seminary property in the 1990's (ostensibly to raise money to continue developing the main campus, which never occurred) all of the private market rate housing that SCP, "determined to be the maximum desirable based on the projected traffic impact and the context of the property within the community," was built and completed. There is no remaining authorization in SCP for additional market rate housing. The only type of housing that remains to be built is student and faculty housing.
5. In 1984, County Counsel opined that student and faculty housing were "specialized units" that would not be included in the calculation of the inclusionary housing requirement.

6. During the 1997 approval process for the Seminary Cove Condominium project, an argument arose that inclusionary housing should be increased because the requirement for inclusionary housing had subsequently increased following approval of the 1984 Master Plan. County Counsel opined that the new inclusionary housing requirement was not retroactive.
7. Therefore, the inclusionary housing requirement for the entire Seminary was completely satisfied with the sale of property for private market rate housing in the 1990s. As proof, County always collects the inclusionary housing requirement prior to final project approval. In light of this history, please analyze why NCLH should receive a density bonus for destroying "specialized units" of student and faculty housing and replacing them with units of private market rate rental housing.
8. Returning to SCP Map 4, Area 8 is a large area of the property on which NCLH has no plans for any development. If additional market rate housing is recommended in conflict with SCP, then Area 8 offers many buildable sites for housing units. In addition, SCP initially determined that Area 8 would be an appropriate location for a maximum of 36 attached dwelling units or a maximum of 10 single family detached units. Area 8 has the advantage of access from Seminary Drive or from Chapel Drive. Attached dwelling units would be consistent with the other attached housing units that are located around this cove. Furthermore, Area 8 offers scenic views of the cove and Mt. Tam. Please analyze alternative scenarios that allocate housing units to Area 8.
9. NCLH proposes to build market rate housing in Area 6 on the south-facing slope adjacent to Chapel Drive and above Mission Drive. Locating market rate housing here does not conform to SCP because Area 6 is dedicated to expansion of the academic campus and to student and faculty housing. This site is directly below the Chapel Drive hilltop that is identified in SCP as a prominent visual landmark that should remain undeveloped—more specifically, "no housing should be placed on this site." Placing housing here would violate a SCP goal of providing "such amenities as visual backdrops" and "neighborhood separators." In addition, this site is very steep, and building housing here would require extensive grading. Furthermore, NCLH wants to put market rate housing on this site to maximize rental income by capturing views of San Francisco. Housing with views of San Francisco will have high rents that will not satisfy the County's goal of providing additional affordable housing. Therefore, if additional market rate housing is recommended in spite of restrictions in SCP, then please analyze the alternative of building market rate housing in Area 8 instead.
10. Similarly, NCLH proposes to build detached market rate rental housing in Area 6 below the Forested Knoll, which is a non-conforming land use in the SCP. Area 6 is dedicated to student and faculty housing. The Forested Knoll also has been identified as a prominent visual landmark, and no development of the Forested Knoll is permitted. The forest-covered south facing and western facing areas below the Forested Knoll also are visual amenities. The existing student apartment buildings on the northwestern portion of this site are barely visible now because of screening provided by the mature trees, but NCLH proposes to demolish these units. In contrast, new detached market rate homes will be very visible because the renters will want unobstructed views of the Bay. Please analyze the alternative of locating the single family detached homes in Area 8 instead.

11. The area of Strawberry that contains the Seminary is bounded by Highway 101 on the west and by State Route 131 (Tiburon Boulevard) on the north. Caltrans controls these state highways and the intersections at Highway 101/Seminary Drive, Highway 101/SR 131, and SR 131/East Strawberry Drive. In addition, the City of Mill Valley considers the Highway 101/SR 131 intersection to be within its sphere of influence. Consequently, the City's Traffic Management Authority has synchronized the traffic signals to accommodate the east-west flow of traffic to the detriment of Strawberry, which experiences long traffic delays at the northbound Redwood Frontage Road/SR 131 intersection. Please consult Caltrans and the City of Mill Valley as soon as possible about the capacity of these intersections to accommodate projected traffic generation from NCLH's proposals.
12. According to SCP, NCLH will be responsible for funding any additional roadway improvements required because of its development plan. Please analyze the necessary roadway improvements and the cost of those improvements.
13. According to the US Census, 60.8% of Strawberry's housing stock is renter occupied housing. Only Marin City is higher, at 69.3%. By comparison, Mill Valley is 34.7%; Tiburon is 32.2%; and Belvedere is 25.1%. Strawberry doesn't need any more rental housing. What we need is additional owner occupied housing on which more owners must pay parcel taxes to support public services. NCLH property consists of only 9 parcels, but NCLH is proposing as many as 546 housing units with density bonuses. Please determine the maximum entitlement with state density bonuses. Then please analyze the impact of NCLH's additional rental housing on Strawberry's tax base and Strawberry's ability to provide essential public services without increasing the tax burden of existing home owners.
14. NCLH is proposing two major new land uses—market rate rental housing for the general public and a Residential Care Facility (RCF)—that compete with the existing approved land use of a graduate academic institution (more exactly, a graduate level seminary). The SCP envisions a self-contained graduate level institution (seminary); it does not envision a commuter school. A commuter school will not increase Marin County's housing stock. It will require student and faculty to find housing off campus. As a consequence, traffic generation will increase because students and faculty must commute to school and renters on site will drive back and forth from work and for attending to other activities of their daily lives. Strawberry residents generally liked the concept of a RCF, but that was before they learned that that the proposed 150 units would count as only one unit under County code. The proposed CCRC gives NCLH another density bonus of 149 units in addition to the density bonus for market rate housing. Taken together, these three major land uses with density bonuses create a project that can only be described as piggish. At a minimum, NCLH's proposal has <u>at least one</u> major land use too many. Please analyze the impact of a graduate level academic institution plus market rate housing, and a graduate level academic institution plus a CCRC separately.
15. In addition to the three major proposed uses, NCLH also is proposing other new land uses, including corporate headquarters, a catering business serving the general public, a fitness center open to the residents of Strawberry, an art museum for the general public, a nursery school open to residents of Strawberry, a public park on Chapel Hill, and rental space as an event destination. The collective impact of all of these proposed new land uses is significant and,

when added to the impacts of the three major new uses, leads to a project that is way too large. Please analyze proposed new land uses that are unnecessary and can be eliminated.

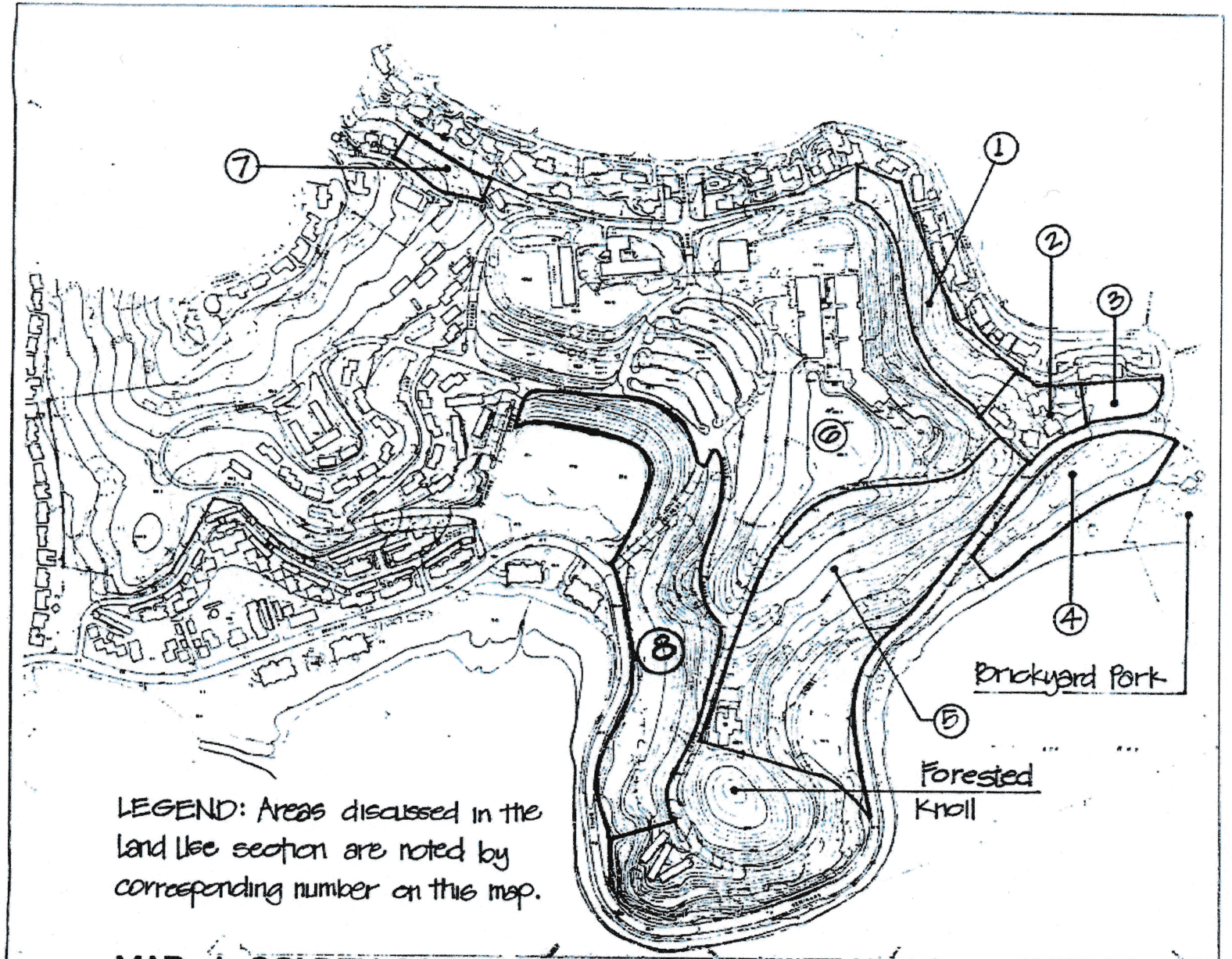
16. For example, please analyze the need for a large fitness center for a commuter school. Converting an existing classroom to an exercise room may be a better viable alternative.
17. NCLH's trial of renting its property as an event destination for weddings and rock concerts was a disaster for the Strawberry Community. The echo effect of loud noises disturbed the serenity of our community and minimized the enjoyment of our properties. Please add restrictions to such land uses.
18. The proposal for a public park on Chapel Hill is not a popular idea because it will become a destination point and increase local traffic. The homeowners on Chapel Drive purchased their homes with the understanding that their immediate neighbor would be a Seminary, not a busy public park. Please eliminate this public park as a new land use.
19. The proposal to closed Chapel Drive at Chapel Hill is another unpopular idea. For safety, Strawberry needs as many roadways as possible to reach Highway 101 and SR 131. Please keep in mind that the southern tip of Strawberry is a narrow peninsula. In the event of a fire or other natural disaster, residents need more options for egress, not less. In addition, to distribute the flow of traffic from the estimated additional 2,000 Seminary residents, we should not be closing existing roadways. Please analyze the aspect of public safety.
20. The proposed RCF building is enormous, and it will be visible from many different vantage points. The building will be 267,354 square feet in size, which is equivalent to 178 single family homes with an average size of 1,500 square feet. Given that most COVID-19 cases were contracted in senior care facilities, our community may want to reconsider supporting a CCRC for health reasons. Please closely examine the RCF in light of these realities.
21. The proposal to raise the level of the athletic field by 20 feet is unnecessary and extreme. It would require a huge number of cubic yards of fill and an extensive new drainage system to the Bay. In addition, the view of the green field from Seminary Drive is aesthetically pleasing. The alternative of driving by a berm 20 feet high is not appealing. Pleas analyze the need for raising the height of the athletic field.
22. The number of bicycle riders on Seminary Drive and on East Strawberry Drive has increased dramatically over the past several years, especially because of the popularity of new bicycle rental businesses. Please analyze roadway capacity for the safety of both passenger vehicles and bicycle riders.
23. NCLH's "Local Residential Density Comparison" on page 7 of the project description is sophomoric because it does not take into account the approximately 408,000 square feet of proposed and existing institutional buildings, plus an additional 100,000 square feet for the playing field, plus an additional 100,000 square feet for parking. The combined total of approximately 608,000 square feet of space is equivalent to an additional 405 single family homes with an average size of 1,500 square feet. Furthermore, as the Comparison points out, the Seminary is surrounded by two existing dense developments—Harbor Point Apartments (17units/acre) and Strawberry Shores Apartments (15 units/acre). Please recognize that NCLH's statistics are self-serving.

24. There are several new state housing laws. Please examine the impact of all of these new state housing laws on NCLH's proposals.

Thank you for considering these topics.

Very truly yours,

Bruce Corcoran



MAP 4 GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY

Taylor, Tammy

From: Reid, Rachel
Sent: Monday, February 01, 2021 1:33 PM
To: EnvPlanning
Subject: Fw: NCLH EIR Scoping Doc Spotswood's Op-ed. Project ID P1490
Attachments: Spotswood p. 1_20210201_0002.pdf; Spotswood p. 2_20210201_0001.pdf; Spotswood p. 3_20210201_0001.pdf

add to NOP comments...

From: John Bruce Corcoran <BruceCorcoran@msn.com>
Sent: Monday, February 1, 2021 1:30 PM
To: Lai, Thomas <TLai@marincounty.org>; Levenson, Michelle <MLevenson@marincounty.org>; Reid, Rachel <rreid@marincounty.org>
Subject: NCLH EIR Scoping Doc Spotswood's Op-ed. Project ID P1490

Dear Acting CDA Director Tom Lai, Senior Planner Michelle Levenson, and Environmental Planning Manager Racel Reid,

Please add Dick Spotswood's 3 page op-ed to the NCLH EIR scoping documents.

Thank you.

Regards,

Bruce corcoran

Dick Spotswood: Developers make mistake in pushing deceptive Strawberry seminary plan

By DICK SPOTSWOOD | spotswood@comcast.net |

PUBLISHED: November 10, 2020 at 10:50 a.m. | UPDATED: November 10, 2020 at 11:31 a.m. MARIN INDEPENDENT JOURNAL

Marin is familiar with land use disputes that persist for years.

That was the history of Novato's Hamilton Field, which ultimately became a roaring success. It's been the fate of San Rafael's St. Vincent School at Silveira Ranch, whose long-term future remains in doubt. Unless county supervisors get the parties to negotiate, that's the likely prospect for the Strawberry site of Golden Gate Baptist Theological Seminary which relocated to Southern California in 2016.

Unfortunately for all involved — except the lawyers — the County of Marin and the developer, North Coast Land Holdings, are making a mistake which could easily lead to years of protracted litigation. It's needless since the interested parties were close to achieving a fair compromise.

The potential settlement fashioned under the voluntary "Seminary Tomorrow" working group exploded when North Coast prematurely halted negotiations. Until then all were dealing in good faith. Apparently the developer believes they'll get a better result from the Board of Supervisors than at the bargaining table.

North Coast was asked for comments on Seminary Tomorrow negotiations and the neighborhood's appeal. Spokesperson Charlie Goodyear indicated that officials won't reply "at this time."

The developer has now filed a request to proceed with a master plan and design review. The application omits the largest component proposed on the 126-acre Strawberry Peninsula site: a college campus. A piecemeal process without any details of the yet undefined institution of high learning makes environmental review useless.

The county's Planning Department is recommending the environmental process commence without specifics regarding the campus. Strawberry residents appealed that call to the Board of Supervisors as the former seminary lies in unincorporated Southern Marin. The hearing was scheduled to take place Tuesday afternoon.

North Coast and Marin County planners are putting the cart before the horse. The purpose of an environmental review is to provide decision makers documented information on all potential uses, resulting impacts and needed mitigation measures for any proposal. Omitting the campus component is bad planning. The traffic impact of the combined housing, senior complex, event venues, athletic competitions and the college is now unknowable thus causing the ultimate decision makers to be misinformed.

Neighborhood leaders report Seminary Tomorrow addressed "academic uses" before negotiations ceased. Community members proposed a 350-attendee school with half of the proposed housing devoted to students and staff. They indicate North Coast had suggested a school with 700 students. Now they're asking for 1,000.

The sides came to a provisional understanding regarding on-site housing. The neighbors and North Coast agreed on 233 units including 47 affordable and 186 market rate. With negotiations over, the developer is now asking for 288 market rate and 50 affordable plus a 100-unit density bonus for a total of 438.

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Taylor, Tammy

From: Josh Sale <jsale@tril.com>
Sent: Monday, February 01, 2021 2:21 PM
To: EnvPlanning
Cc: Riley F. Hurd; Lai, Thomas; Reid, Rachel; Levenson, Michelle; Moulton-Peters, Stephanie
Subject: Seminary EIR Scoping Document From SNA
Attachments: Seminary EIR Scoping Document From SNA Feb 1, 2021.pdf

Please find attached comments from the Seminary Neighborhood Association ahead of the deadline for comments on the Seminary NOP.

Thank you,

Josh Sale
President, Seminary Neighborhood Association

EIR SCOPING COMMENTS FOR NORTH COAST LAND HOLDINGS COMMUNITY PLAN AMENDMENT/MASTER PLAN/DESIGN REVIEW/MASTER USE PERMIT/TENTATIVE MAP/TREE REMOVAL PERMIT ON THE FORMER GOLDEN GATE BAPTIST SEMINARY PROPERTY (P1490)

Seminary Neighborhood Association

Authored by: The Board of Directors

January 31, 2021

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"Such a beautiful tract of land should be a benefit to the entire community, not a problem child."

INTRODUCTION

The Seminary Neighborhood Association (SNA) is a local neighborhood group that represents over 1000 residents who live next to or near the Seminary property. SNA has been involved in the various planning processes with this property for over 8 years, and is incredibly familiar with the conditions at the site and in the surrounding community. Accordingly, SNA is uniquely qualified to provide comments on the environmental review for this project.

The comments herein specifically respond to the Revised Notice of Preparation of EIR issued for this project on November 20, 2020. Furthermore, these comments primarily address the *scope* of the EIR. More detailed input regarding the impacts and merits of the project will be presented in future communications.

Limitation on these comments

The centerpiece of the Seminary property is a significant academic campus. Despite the applicants stated intent to operate a very large college or university at the property, the current application provides not one scintilla of information about this significant use. Accordingly, with such a massive amount of information missing from the project description, the ability to meaningfully provide scoping comments is significantly hampered. The record should reflect this flaw in the process.

On September 21, 2020, the Strawberry Design Review Board unanimously rejected the NCLH proposal citing unanimously that "The proposed project is not stable, finite, accurate, nor sufficient as required to proceed, and the proposed project is lacking operational characteristics for the 1,000 person graduate institution, among other deficiencies." However, at its meeting on November 10, 2020, the Marin County Board of Supervisors ruled that the EIR for the project could proceed, but that it must include and consider the impacts of the proposed academic institution. So far, such information has not been provided.

Flaws in the initial project description

The project description outlined for the EIR contains misinformation. First, the developable portion of the site is only 101.1 acres, as 26 acres are underwater and have been formally disallowed for use in development calculations via a mapped easement. Second, significant portions of the property have already been developed (academic/administrative buildings, parking lots, student & faculty housing, playing field, etc). The area available for redevelopment needs to be reduced by the amount of area that has already been developed. Third, when considering existing development (buildings, housing units, parking areas and roadways), approximately 73% of the property is open space. The proposal reduces open space to approximately 50%. Due to hillside and dangerous soil conditions, the proposal will utilize well over 50% of the available space and a significant portion of the passive open space.

The following issues are submitted for EIR consideration.

1. AESTHETICS

Particular care will need to be given to aesthetic considerations because the Seminary property is a prominent piece of property widely visible from multiple public and private locations.

Obvious areas of analysis include:

2. The view corridor from highway 101 towards the property
3. The view corridor from Richardson's Bay to the property
4. The view corridor from the private development abutting the property

In addition to these major views, the project proposed to take areas specifically required to remain as open space in the Strawberry Community Plan and develop them. The reasons these areas were to be preserved was their aesthetic impact. The proposal would unwind this important visual and natural buffer, creating an uninterrupted line of visible development.

The December 12, 1982 *Visual Analysis of the GGBTS Master Plan* by John Roberto and Associates contains a thorough review of the as is site and should be reviewed as a starting point.

The area known as Chapel Hill is proposed to undergo a significant change that compromises the serenity, views and mobility of the existing, adjacent private land owners. Similarly, the open space known as Shuck Knoll is proposed for development with visual impacts to existing residences that need to be studied, defined, and mitigated. Seminary Point and Seminary Knoll are visually prominent ridge lines as defined by Title 22 Development Code standards., and must be analyzed as such.

Investigate and mitigate the visual impacts of the proposed development to all existing residences. The development proposed opposite the homes at the "top" of Chapel Dr deserves special attention.

Further, the architectural design is strikingly different from and incompatible with that existing on the site.

The Strawberry Community Plan singles out the location identified for a chapel, the open space band between Chapel Dr and Seminary Dr and the “point” (current location of GGBTS dormitories) as being of regional significance. The impact of the proposal on all of these locations should be carefully examined.

The proposed CCRC requires 332,500sf. This is an enormous structure for Strawberry and out of scale with anything in the seminary neighborhood. Its mass and scale require careful study.

In its entirety, the site is large, varied and sloped, making it hard to visualize. A large-scale 3D model must be created to allow all stakeholders (particularly those not trained in the reading of design documents) to understand how the proposal and each of the alternatives will appear from every vantage point - such as views from Hwy 101 and from the Bay, lantern effect at night time. The Forested Knoll is a prominent regional view and must not be destroyed.

2. AGRICULTURAL AND FORESTRY RESOURCES

An arborist and biologist must be hired to examine all vegetation and habitats on the site and determine species that must be preserved and how to mitigate significant tree and habitat impacts.

The Monterey Pines are reaching the end of their natural life. The site needs a comprehensive revegetation plan. This plan should include a detailed description of how vegetation will transition from as-is, to as proposed, and how biological resources will be impacted by revegetation. For example, does NCLH intend to denude the site with the wholesale removal of the Monterey Pines or will this be done in carefully orchestrated phases? Over the years, a meaningful maintenance program for the existing trees has been nonexistent, resulting in problems. Consider a bond or other enforceable instrument to ensure that any re-forestation plan is enforceable in the future.

3. AIR QUALITY

Project implementation will result in extensive construction-related traffic and resulting air quality impacts.

- How many car and truck trips/day will be required over what period of time?
- What steps will be taken to ensure that debris doesn't leave trucks and land in the streets and neighborhoods?
- How much particulate matter will be entailed by all of this traffic? How many cases of asthma and other respiratory illnesses will result? How will this airborne matter interact with the region's already numerous spare the air days?
- How much greenhouse gases will be expanded by construction-related traffic?

The project will result in a significant increase in vehicular traffic (both people commuting to the campus and residents going about their daily lives). Given Strawberry's roadway system, all of this traffic will funnel through a small number of intersections. Please study the traffic increases at all intersections and:

- Calculate how much additional greenhouse gases will be emitted by vehicles for the overall project and for waiting to transit these intersections.
- Calculate how many additional cases of asthma and other respiratory illnesses will result from the exhaust of vehicles waiting to transit these intersections.
- All of this traffic will result in increased airborne dust. How will all of this entailed particulate matter interact with the region's already numerous spare the air days?
- How will dust and noise monitoring be performed and reported to the neighbors during construction?
- Who will enforce the construction mitigation measures?

The project is not contemplating onsite housing for the people who work or study at the CCRC, fitness center, childcare center or college. How much greenhouse gas will be emitted by people driving from their place of residence to the Seminary site?

- How will the new building construction achieve energy efficiency goals? What can be done to offset greenhouse gas emissions resulting from the operation and maintenance of the existing building and infrastructure?

4. BIOLOGICAL RESOURCES

A licensed Biologist should be hired to determine the negative impacts that this development will have on wildlife, flora, and fauna. Also, consultations should be made with such groups as the Richardson Bay Audubon, Audubon Canyon Ranch, the Marin Conservation League, the California Conservation Corps, and other related environmental groups. Due to the age of any previous development on this site, there is missing data in County records on many issues, such as wetland and stream mapping, and other data layers critical for analysis.

The site is home to a Great Blue Heronry, Peregrine Falcons, Egrets, and a number of species of Eagles, including Bald Eagles that recently returned to Southern Marin for the first time in decades. Bald Eagles have regularly been observed in all parts of the property including Chapel Hill, Forested Knoll, and Shuck Knoll. An abundance of deer and coyotes also occupy the site. The impact of the proposed development on these and other wildlife should be closely studied.

The abundant wildlife on the site is largely cut off from nearby habitat by highway 101, Tiburon Blvd, etc. Because of this, existing wildlife corridors should be identified and protected. During the wet season, a vernal pool has been observed around an outcropping in the Shuck Knoll area where development is proposed, and the sensitive species in this area need to be investigated, documented, and protected.

Investigation of impact on wetlands, and the identification of blue line streams[1] must be investigated. For example, salt marsh harvest mice may inhabit the wetlands adjacent to the Seminary property, sensitive bird, fish, and other species inhabit the wetland and surrounding Bay environment and may be impacted by runoff from construction and/or improvements associated with the project such as storm drainage, water, and sewer systems that may require repair/upsizing adjacent to the site.

[1] Blue-line stream" means that a stream appears as a broken or solid blue line (or a purple line) on a USGS topographic map. Streams do not have to be "blue-line" to be considered waters of the State.

5. CULTURAL RESOURCES

Cultural resources on the site need to be investigated by qualified specialists. How was the site used by Native Americans and what cultural resources remain? Additionally, the Theological Seminary has a rich history in Strawberry. Its cultural history should be studied and certain aspects of building and/or the site preserved as cultural resources for future generations.

6. GEOLOGY AND SOILS

A licensed geotechnical engineering firm must be hired to investigate the stability of the area under development. It is known, for instance, that soils on the hillsides are not stable and development would probably cause unexpected movements damaging nearby properties.

GIS data indicates the property is "mostly landslides," has issues with liquefaction, and areas of mapped debris flow. The 1982 Master Plan for the site required landslide repairs at the property. There is no information as to whether this actually occurred.

Previous reports for the property indicate that several seeps exist on the site and the ground water is close to the surface of the land in several locations.

The following published literature and other available information must be considered.

- Davenport, C. W., 1984, An Analysis of Slope Failures in Eastern Marin County, California, Resulting From the January 3 & 4, 1982 Storm, California Department of Conservations, Division of Mines and Geology DMG Open-File Report 84-22.
- Donald Herzog & Associates, August 10, 1982, Preliminary Report: Anticipated Remedial Measures, Golden Gate Seminary, Seminary Point, California, Job Number 944.1.
- Donald Herzog & Associates, May 19, 1989, Report: Geotechnical Investigation, Site Development and Public Improvements, Seminary Ridge Development, Marin County, California, Project Number 944-1-3-1.
- Herzog Geotechnical Consulting Engineers, March 21, 2011, Report on potential for landslides in the Seminary property hillsides, File Report 1833-03-11.
- Huntington Engineering & Environmental, Inc., November 4, 1944, Report, Geotechnical Investigation, Lot 25 Seminary Ridge Subdivision, Marin County, California, Project Number 6768.01-0-1.
- Rice, S.J., Smith, T.C., and Strand, R.G., 1976 Geology for Planning: Central and Southeastern Marin County, California, California Division of Mines and Geology, OFR 76-2.

- All other California Department of Conservation reports on the general area.

7. HAZARDS AND HAZARDOUS MATERIALS

Phase I and Phase II environmental site assessments are needed. It is expected that lead paint has contaminated the soils around the existing structures and needs to be remediated prior to demolition and new construction. It is requested that the site be investigated for asbestos that may be present in import soils in the road base, as a component of the asphalt paving, and as building materials. Appropriate investigation, planning, and precautions are needed to properly demolish the existing buildings/materials. Additionally, significant debris, drums, and oil containers have been observed over the years at the maintenance shed area, and it appears debris has been spread adjacent to the existing dirt road from the maintenance shed area to Shuck Knoll.

A previous Phase I for the property found that there is a hydraulic lift and empty underground fuel tank in the maintenance building but of which must be removed. No record of permits for these facilities is provided. The removal plan must be analyzed.

The property is located in the “very high” fire risk zone. A detailed mitigation and evacuation plan for a wildfire scenario must be analyzed. Strawberry is already built out per the master plan, this development will add to the already dangerous vehicular evacuation choke points.

8. HYDROLOGY AND WATER QUALITY

This section addresses storm drainage, sanitary sewer, and potable water.

Storm Drainage:

The existing site is centrally located on the Strawberry Peninsula, and the site was constructed before most of the adjacent residential housing. Therefore, there are a significant number of "private" drainage features and assets associated with the site that convey drainage from the site to the adjacent San Francisco Bay. It is presumed these facilities are owned and maintained by NCLH. However, NCLH disputes this. The ownership and responsibility of these drainage facilities need to be determined and identified. Many of these drainage facilities cross private and public property. Nearly all the drainage facilities are well beyond their useful life and are in a state of complete disrepair. The County has indicated they have no responsibility for these drainage features. These features must be studied and repaired as part of the development project, and the scope of the repairs needs to be defined as it is critical to the environmental review process as it includes disturbance in wetland and sensitive habitats.

The development will increase the impervious area and runoff from the site considerably, overwhelming existing drainage facilities. A drainage study is requested consisting of: a hydrology study of the site and adjacent areas that contribute to the overall drainage system, a condition assessment of existing drainage facilities from the site to their point of discharge, hydraulics study of the capacity of the existing drainage facilities, and consideration and mitigation of sea level rise.

It is anticipated that upsizing and repair of these existing facilities are required, including construction within the tidal marsh area and within very sensitive habitats that may contain endangered species. A few areas of note include:

- The existing drainage swale and corroded corrugated metal culvert conveying runoff from Shuck Knoll, through Strawberry Shores Apartments property, and discharging to the wetland approximately 175 feet south of the intersection of Ricardo Rd and Seminary Drive intersection.

- Water drains through the site, across the playing fields, and floods the Strawberry Cove condominium complex.
- Multiple swales and culverts conveying and discharging runoff to the wetland adjacent to the Seminary Playing Field.
- Multiple additional culverts along Seminary Drive.
- The remaining drainage system at the perimeter of the site.

Additionally, the increased runoff from proposed development on Shuck Knoll is expected to increase the risk of flooding of downstream properties that are currently located in the flood plain. The impacts of this additional runoff coincident with sea level rise and possible mitigation measures are requested to be studied/considered. A new stormwater pump station at Ricardo Rd and Seminary Drive is requested to be studied as a potential solution to mitigate flood risk and sea level rise impacts, especially to address stormwater runoff at high tide, and potentially to mitigate roadway flooding during storms and sea level rise.

The sewage pump station behind the 7-Eleven would seem to be vulnerable to sea level rise. With the proposed increase in development, the viability of this infrastructure should be studied and mitigated. - What is the impact of the expected 3-foot sea level rise on Seminary Drive as it is the primary entrance to the property?

Finally, portions of Seminary Drive and the Redwood Frontage Road (including the Seminary on and off ramps on both sides of the freeway) are within the flood zone and are known to regularly flood upon high tide. These tidal flooding impacts need to be studied and mitigated to avoid impacts to traffic during the flooding events and allow continual use of the roadways in the face of climate change and sea level rise. Mitigation measures requested to be studied include a pump station at Ricardo Rd and Seminary Drive, a sea wall along Seminary Drive and other strategies.

These complex issues need to be studied in detail by experts including specialists in hydrology, wetlands.

Sanitary Sewer:

New sanitary sewer service connections onsite are expected to support the proposed large increase of development. Additionally the volume and diurnal flow patterns are expected to change since many of the site uses are proposed to change (e.g. different academic use and operational characteristics, CCRC, gym, etc.). These changes are anticipated to change the volume, quality/type, and flow patterns to the public sanitary sewer system. Given these substantial changes, it is requested that a qualified licensed civil engineer be hired to study these changes and work with the local sanitary sewer service provider to determine the impact on the related public sanitary sewer collection system, pump stations, odor control, treatment, and treated water discharge to the San Francisco Bay.

It is anticipated that significant upgrades to the local sanitary sewer system (e.g. upsizing collection pipes, upsizing pumps, upsizing treatment, etc.) may be required. Many of these facilities are located in close proximity and impact wetland habitats. The required upgrades need to be studied, defined, and mitigated through a formal study that is completed in collaboration with the local sanitary sewer agency. These studies typically require significant effort and time.

Potable Water:

New potable water demand is expected to support the proposed large increase of development. Additionally the demand patterns are expected to change since many of the site uses are proposed to change (e.g. different academic use and operational characteristics, CCRC, gym, etc.). These changes need to be studied by a qualified licensed Civil Engineer in collaboration with Marin Municipal Water District to determine if upsizing treatment, storage (tanks), and conveyance (pipelines) systems are required.

9. LAND USE AND PLANNING AND NOISE

The Project irreparably conflicts with the Strawberry Community Plan

The Strawberry Community Plan (SCP) is the specific, controlling document for the project site, and the SCP has always contemplated that the site be used only as a Seminary, with associated student and faculty housing. (See numerous discussions in 1974 SCP regarding Seminary at pages 32, 47, and 58, for example.) While the SCP was amended in 1982 to permit a finite amount of market-rate housing in a very specific area, this amendment did not change the fact that only a seminary and its associated student and faculty housing would remain on the areas of the property not being sold off for housing. More importantly, this amendment contained some very clear language about the capacity for the site when it stated that the additional development approved via the amendment, "was determined to be the maximum desirable based on the projected traffic and the context of the property within the community."

A series of self-serving SCP edits are proposed to delete the requirement that the housing on site be for students and faculty only, and to totally change the for-sale requirement of the market-rate homes to now allow 100% rental. These major SCP components now sought to be stricken were the result of years of negotiations and hard work by the Strawberry Community, and should not be permitted to occur in such a haphazard and singularly focused manner.

As important as the deletions, however, is what isn't proposed to be changed in the SCP. The remainder of the document, including the amendment regarding the Seminary site, is untouched, thereby resulting in a wholly inconsistent document. For example, the following SCP language would remain, which is not only inconsistent, but also shows why the project cannot be approved:

"Of particular concern was the increasing number of attached multiple residential developments and the increasing impacts of traffic generated by these new developments."

"If new development is to occur, it can strengthen this character by providing the traditional setting of detached single family units within any new development proposed for the area."

The SCP should be respected, and a comprehensive community-driven update process undertaken before consideration of a nonconforming project. The entire context of the SCP should be respected, and only uses that take into account the current traffic situation and residential nature of the surrounding community should be considered.

The Project requires a CUP for the School

The 1953 Use Permit allowing a self-contained seminary to operate at the property was superseded by the approval of a 1984 Master Plan for the site. When the Master Plan expired, so did the right to operate an educational use. Accordingly, in order for the current application to be complete, it must also include a request for a Use Permit for a school, and clearly describe the operational characteristics of said school such that there can be meaningful environmental review, as well as an informed consideration of the required CUP findings.

The 1953 CUP for the Property was for one use, and one use only:

"…to permit the construction of a Theological Seminary and dormitories and other buildings incidental to such use…"

The record for the 1953 CUP indicates that two factors were central reasons a seminary was ever even considered as acceptable at this site:

1. That 100% of the students would be housed on the property, and

2. That the college was post-graduate, thereby making it an asset to the area.

A school without the characteristics cited above would in no way meet these criteria. A school that does not house its students on site generates significantly more vehicle

trips, noise, and other impacts, at a level far greater than the self-contained post-graduate institution contemplated in 1953. On top of this, the applicant also requests 100s of new rental housing units based on the theory that the student and faculty housing units are somehow equivalent to much larger homes that will be inhabited by people that primarily work off-site. This apples to oranges comparison is not supported by logic or the law, and flies in the face of the original concepts underlying the CUP approval.

Please refer to the January 25, 2021, letter from Riley Hurd setting forth the need for a new CUP for the school use. This letter was submitted, in part, as a response to the NOP for the EIR.

- **Details of the proposed college need to be defined**
  - Number of students
  - Number of faculty
  - Number of staff
  - Number of visitors each day
  - Amount of onsite housing dedicated to students, faculty and staff
    - Plan for ensuring that onsite dedicated housing remains dedicated to that use over time

  -How many students, faculty and staff will have to commute each day
  -Hours of operation
  - What will the academic nature of the college be?
  - For how many months or years will students attend the college?
  - Will students at the college interact with students or faculty at other academic institutions in the Bay Area? With the tech industry or other businesses? If so, how and where?
  -Activities provided outside of class (social events, sporting events, conferences, etc.)
  -Lighting plans
  -How much noise will be generated
  -and so on.

  As the college is studied, care must be used before using standard “book rates”

that estimate the impacts (e.g., traffic) for colleges since the proposed college isn't very "standard" (e.g., no student housing, extensive connections to other regional academic institutions and businesses, many special events, etc).

- Similar questions arise from the CCRC, fitness center and art museum
  - Number of visitors
  - Number of staff
  - Amount of onsite housing dedicated to staff
    - Plan for ensuring that onsite dedicated housing remains dedicated to that use over time
  - Hours of operation
  - Special events
  - Lighting plans
  - How much noise will be generated
  - and so on.

- How will the playing field be used?
  - Field/park hours of operation, noise, traffic, and light impact.

- The EIR should study how durable any plan approved by the County will be over time and identify measures that can be taken to ensure durability. For example, most of the homeowners (at least those who purchased in the last 60 years), did so with the expectation that the future of the seminary was settled. It was well defined in a Community Plan, Master Plan and Conditional Use Permit. Over the last decade we've learned that none of these documents provide any assurance of what the future will bring. How do we know that open space will stay open? That schools won't continue to expand? That limitations on use of the fitness center won't be removed?

- In its April 10, 2017 letter to NCLH, Marin Code Enforcement made these findings and conclusions:

> "FINDINGS: Based on the background and facts in evidence, we have concluded that the following non-residential activities are unauthorized: (1) North Coast's business offices, (2) the Golden Gate Academy, except to the extent that it enrolls children of Seminarians; and (3) All Seasons Catering except to the extent it serves Seminarians. In addition, we have determined that renting the residential units to the general public is unauthorized as long the 1984 Master Plan is in effect because the Master Plan permitted their development specifically for the purpose of providing housing for the students, staff, and faculty of the Seminary.
>
> CONCLUSIONS: If it is your intention to pursue legalizing the unauthorized activities, please revise your current planning applications to include these uses for consideration. *Please note that baseline determinations for environmental review do not include the effects of unauthorized uses on a property*."

We draw your attention to the final sentence of the County's conclusion.

Note that the current onsite tenant, Olivet University, which is a private Christian institution of biblical higher education, broadly complies with the now expired[2] 1953 conditional use permit.

[2] **See Riley F. Hurd letter of January 25, 2021.**

10. POPULATION AND HOUSING

Currently, the NCLH site includes 211 student and faculty living units. The proposal includes 488 living units. The attached breakdown shows the type of housing units for each.

Unit Size	Existing	Proposed
Four Bedrooms	2	8
Three Bedrooms	19	197
Two Bedrooms	54	109
One Bedroom	54	24
Studios	82	0
Sub-Totals	211	338
CCRC	0	150
Totals	211	488

The NCLH proposal specifies 50 affordable units and then goes on to claim a density bonus of 96 units. However, as noted above, they will destroy anywhere from 112 (82 studios plus 30 one bedroom units) to 211 restricted (for the use of seminary students and faculty) units. NCLH proposes to destroy more affordable housing units than they propose to create. Therefore, they are not entitled to any density bonus. Their entitlement is limited to the maximum allowable units of 242 (general area zoning) or 210 (Strawberry Community Plan)[3].

Recently the State and County have embraced accessory dwelling units. How will ADU's fit into the NCLH proposal? If allowed, then the impacts (traffic, open space, greenhouse gases, noise, light pollution, etc.) should all be studied. ADU's may also be built by other Strawberry homeowners. The impact of the overall increase in density of Strawberry associated with ADU's should also be considered as part of this EIR.

[3] This assumes 100 buildable acres. However as noted above, developable acreage needs to be carefully calculated based on total acreage less underwater acreage, already developed acreage (e.g., academic campus and student and faculty housing, parking lots, roads) and land undevelopable because of slope, springs, etc.

NCLH plans for 100% of the built housing to be rental. We think it's worth studying how the difference in ownership patterns (rental vs ownership) effects community life (volunteerism, voting, etc).

11. PUBLIC SERVICES

The population on the NCLH site will explode with the addition of more than 2,000 additional residents, all of whom will need public services. Many of these services are funded by parcel taxes. Currently, NCLH only pays taxes on 9 parcels and their plan contemplates no additional parcels. If each residential unit were its own parcel, NCLH would pay approximately an additional $1 million per year in parcel tax. As proposed by NCLH, this shortfall in revenue will fall onto the shoulders of other parcel owners. This inequity needs to be carefully studied.

Furthermore, the impact of this development on the availability of adequate water pressure (1,000 GPM vs. 500 GPM) must be assured. And any delay in the response time of the Southern Marin Fire Protection District Fire Station #9 (Reed Blvd) must be measured in light of the added development and any costs thereof, assuring that there will be no delays from current.

The waste water infrastructure (sewer pipes, pump stations, treatment plants, etc.) should all be studied for adequacy and resilience in the face of sea level rise. Mitigation plans for all identified impacts should be surfaced. Please see the section titled “HYDROLOGY AND WATER QUALITY” for an expanded description of the aquatic impacts of this project on public services.

12. TRANSPORTATION/TRAFFIC

The proposed development will increase street traffic substantially. An increase in daily traffic by a factor of at least 4 (which the proposed development can result in) will cause significant safety concerns. It is considered mandatory that a professional traffic engineering group be hired to closely examine the impacts of the added development to the area.

- Safety concerns

  -Essentially, the Strawberry area has two lane roadways with very busy bike lanes and limited walkways and walkway crossings. Also, current street parking along with the pedestrian and bike traffic make vehicle passage often dangerous.

  -Portions of East Strawberry Drive are particularly dangerous with 10 feet height difference between lanes with no guardrails.

  - Speeding is especially hazardous on the lower (i.e., water side) of the divided section of East Strawberry Drive. The older houses were built in the late 1940s and early 1950s when East Strawberry ended near 313 East Strawberry Drive. Driveways and garages for these older houses were designed to be approached from the north. Turning into these driveways and garages approaching from the south requires much lower speeds, complete stops, and sharper turns. Backing out of these home's driveways is already scary with the current levels of traffic levels. Residents checking their roadside mailboxes and even the mailman are also at risk from fast traffic on this street. The situation will become even less safe with the increased traffic that comes from the proposed development.

  - Strawberry Point School, and to a lesser extent the Strawberry Recreation Center and playing fields and the blind downhill corner approaching from the south, provide natural and necessary traffic hazards. There are crosswalks and flashing signs but observance requires attentive drivers. These hazards should not be exacerbated by the addition of substantial traffic on East Strawberry Drive.

  - Increased traffic enforcement, radar signs, speed bumps, etc have all been requested for East Strawberry in the past, but no action has been taken.

  -Turning lane from Seminary Drive onto Gilbert (the primary point of access to the Seminary property) is blind to opposing traffic.

-Within the property being studied, it is understood that the roadways do not meet County standards of width nor of the degree of steepness allowable. This must be identified in the study.

- Roadway capability – Seminary Drive/Strawberry Drive & Intersections
  -There are two main entrances/exits from the Strawberry area – Frontage Road at Hwy 101 (incl both Northbound and Southbound traffic) and at Tiburon Boulevard.
  -The service at these intersections is classified as marginal at best today. A 4-fold increase of daily traffic due to the proposed development plan is an intolerable situation.
  -The intersections at Ricardo and Seminary Drive pose potentially dangerous safety concerns as does the intersection of Belvedere and E. Strawberry where higher speed traffic turns off Tiburon Blvd into potentially oncoming traffic from Belvedere.
  -Reed Blvd poses potentially dangerous safety concerns with increased traffic due to steepness and limited roadway.
  -Furthermore, the present entrance and exits off Seminary Drive to the property in question will create a congestion nightmare with the increase being proposed. There is parking on both sides of the roadway and, as previously mentioned, there is considerable bike traffic daily so as to interfere with the driving lanes.
  -NCLH purposes to close Chapel Dr. to through traffic. This change enjoys no support from the residents of Chapel Dr. The implications on traffic circulation need careful study.
  -The locations of all driveways require careful analysis. Driveways should connect to roadways in the interior of the campus and not the periphery (e.g., Chapel Dr.).
  - McDonald's drive-through traffic consistently spills out onto the Redwood Frontage Road during peak commute time, snarling traffic. Please factor this into the traffic studies.
  - The location of the two 7-Eleven driveways is highly dysfunctional and interrupts the safe and efficient flow of traffic. This should be studied and mitigated.

Traffic calming on Seminary Drive and other neighborhood streets should be studied and implemented as a mitigation measure. For example, the nearby sports car vendors' customers often test drive their cars at high speeds along Seminary Drive creating a life safety hazard that will be magnified with additional vehicle and pedestrian traffic from the proposed project.

The community prides itself on walking and biking when possible. School-age children are encouraged to walk to school (especially to our local elementary school). How will the increase in traffic associated with the proposed development impact these values? Especially given the lack of sidewalks and bike lanes in Strawberry? Also Seminary Drive has recently become very popular with cyclists, including tourists on rental bicycles from San Francisco. The impacts of the proposed development on all of these uses need to be studied and mitigated.

We believe an independent study on safety and mobility for Strawberry should be conducted as part of this EIR.

Furthermore, this is hardly an ideal location in regards to Vehicle Miles Traveled. Where will all of these new residents work? Where will the CCRC and students and faculty live? The proposal sets up a perfect storm of peak cross-commutes by failing to provide on-site housing and by overbuilding the market-rate units in an area not near any meaningful employment centers.

ADDENDUM – COMMUNITY ALTERNATIVE PROPOSAL

The Strawberry Community Plan is the controlling document for Strawberry and the seminary site. It can't be amended without demonstrating overriding community benefit. Since the NCLH plan provides no such benefit, we suggest that the EIR study an alternative plan that requires no amendment to the SCP (i.e., a plan that completely conforms to the SCP):

> A theological graduate school with 211 units for students and faculty housing.[4] Historically, the traffic for such a development has been measured at approximately 1,600 trips per day and has not caused any significant safety problems. Site density is 18.5%.
>
> OR
>
> 210 housing units (RMP 2.1) – primarily single family units. With this type of plan, daily trips are estimated at 2,000. Density is estimated at 30%.

Both of these alternatives would preserve passive open space and ridgelines. Neither provides for a CCRC, business offices, a fitness center nor for a childcare facility.

In addition to studying the above alternative, we request that other *variations* on the NCLH proposal be examined. In particular:

- Examine a variation where 100% of the students and faculty are provided with onsite housing.

- During 2019/2020 NCLH repeatedly expressed their intention to build something akin to The Rockefeller Foundation Bellagio Center in Italy. NCLH should be taken at their word and something on the scale of the Bellagio Center be studied as a variation for the proposed college.

[4] Some people may scoff at the possibility of the site ever becoming a seminary again after the Golden Gate Baptist sold to NCLH. However the campus is currently occupied by Olivet theological seminary, and they have made plain their desire to stay there as long as possible.

Taylor, Tammy

From: Len Silverfine <len@lensilverfine.com>
Sent: Thursday, April 22, 2021 5:18 PM
To: EnvPlanning; Reid, Rachel; Levenson, Michelle
Cc: Seminary Neighbors
Subject: Baptist Seminary Property Proposed Development

I live on Seminary Drive, which means that I routinely enter and exit the 101 at the Seminary exit. The short stretch of Redwood highway to the intersection with Seminary has become a major traffic problem. The gas stations (2), Car Wash, 7-Eleven, and McDonalds customers often spill out while waiting/exiting on to Redwood Hwy. blocking the north bound and even the middle lanes. Add to this are the bikers, who are in the northbound lane (no bike lane, no room for one) who use this route to go around Strawberry Point to Tiburon. This can lead to back-ups on the 101 exit, and great frustration as well as danger on Redwood Highway. Furthermore, Strawberry Dr. is a local street that has cars typically parked along both sides of the road with no bike lanes. It can get dicey between cars, bikes, runners and pedestrians all competing. Since this route is markedly superior to E. Strawberry Dr. it would likely bear the major load of traffic to and from the proposed new development, which by the way is also used by So. Marin Fire.

You already know all this. Anything but minor additions to the historic traffic flows to Seminary will result in the kind of bottlenecks that exist all over Marin (E. Blithedate, Tiburon Blvd., Sir Francis Drake, etc.,etc, etc. Marin's geography and terrain cannot safely accommodate heavier traffic loads under normal circumstances, not to mention emergencies!!!

Taylor, Tammy

From: Cathy Fox <brooksfox1@gmail.com>
Sent: Monday, May 10, 2021 5:10 PM
To: EnvPlanning
Subject: Strawberry/North Coast

1) The large stands of ancient trees are rapIdly being cutdown. One on Storer, another by the family dorm, one behind the Administration building. Little by little they are coming down, and hauled off the same day.
It is understandable why the Developers would want thesFire hazards remover

Sent from my iPad

Taylor, Tammy

From: Cathy Fox <brooksfox1@gmail.com>
Sent: Tuesday, May 11, 2021 11:08 AM
To: EnvPlanning
Subject: Sorry

I prematurely send an email regarding Strawberry/Seminary yesterday. Will do better today and compose another one later.

Sent from my iPad

Taylor, Tammy

From: David Chittenden <davidlc56@hotmail.com>
Sent: Monday, May 10, 2021 5:03 PM
To: EnvPlanning
Cc: BOS; MV City Council Council; Jody Morales
Subject: Strawberry Redevelopment

Greetings
We live in Sunrise Point. We have noticed a tremendous increase in traffic at the E Blithedale exit/entrance over
the past 15 years. The traffic increase used to be at rush hours-- now it is at all times during the day. This has led to
increased smog and pollution since it can now take 20 minutes to exit Mill Valley from Camino Alto to the freeway
How do the developers plan to help deal with FURTHER and MORE traffic flow problems? I think that we are at
PEAK flow problems right now. When it was a seminary, most students stayed on the campus. I doubt this will happen
with the "redeveloped" campus. Then the new housing-- lots of increased traffic during construction and then on going
traffic increases by the homeowners and their "staffs"
Also, we should not expect the traffic problem to just be at the E Blithedale exit, in my opinion it will build up on THE FREEWAY
and affect freeway traffic especially East bound
NEXT is the water issue- we already have water crises. Where is the "new" water going to come from? At a bare minimum
the developers should pay to find new resources-- A saline plant?, recycled "gray" water and certainly NO GRASS or
swimming pools
We also believe that the developers should provide copies of the plans to all Mill Valley residents so that they/we can look
at the project and comment about it.
Thank you,
David Chittenden

Taylor, Tammy

From: Rona Weintraub <roweintraub@earthlink.net>
Sent: Friday, May 14, 2021 4:42 PM
To: EnvPlanning
Subject: EIR forms

Hi Rachel.....

I saw you at Stephanie's zoom meeting on May 11 when you talked about the Seminary property EIR process.
I was the person who talked obout our drain storm problems at Strawberry Cove Condominiums due to water coming down from the Seminary property.

Is there a form I need to fill out explaining our problem and why we need to be included in the EIR?
What's the exact procedure?

Thanks so much for a very informative presentation.

Rona Weintraub
Vice President of the Strawberry Cove Condo HOA

Taylor, Tammy

From: chuck ballinger <bukchalngr@comcast.net>
Sent: Sunday, May 16, 2021 9:51 PM
To: EnvPlanning; camarin@public.govdelivery.com
Cc: John Bruce Corcoran; Kay Moore; Rick Harris
Subject: Seminary EIR

The 100 homes to be demolished by North Coast Holdings are “affordable” housing units by most logical standards They're affordable because of their smaller size, their age, and their actual rental rates. They should not be targets for demolition at a time when we need more affordable housing. With basic renovations, these homes will continue to sustain work–force housing.

But, since they’re not designated as “official" Marin County affordable housing units, they fall through the cracks. That’s the fine print. This doesn't diminish the fact that the developer is eliminating 100 units of affordable housing in Marin County.

As a contractor who has renovated well over 150 homes, I know that renovation and restoration is usually the better answer. Renovation produces less waste to land fill than demolition, and it requires far less time and material to complete. Renovation is common practice in most of the world, but here we tend to tear down anything old and rebuild it new. The problem is that new construction is expensive and developers require a profit margin which they only get by building market–rate housing. But if Marin County is serious about providing affordable housing, renovating older properties is the best way to go.

So, is Marin really serious about affordable housing?

To make matters worse, this developer expects a “density bonus” for demolishing over 100 units so they can build many more market–rate units - at least 80% of them will be expensive homes. While code requires a developer to replace demolished affordable units at a 1 to 1 rate, this developer is apparently immune because they’re only affordable for the renters and not “officially designated” by the County. That’s bad enough, but to grant a density bonus on top of that?

If the EIR is to proceed with any credibility, it should consider the sheer waste of material gone to landfill so this developer can build high–profit market rate housing, ignore the replacement mandate, and expect a density bonus. Planners should also ask why they’re proceeding with an EIR when the biggest entity (the school) is not even specified.

The absurdity of this EIR and the blatant disregard for what should be considered affordable housing boggles the mind.

As an adjacent neighbor to the Seminary property, please enter my comments for the record.

Chalres Ballinger
273 Ricardo Road,
Mill Valley

415-381-1989

Taylor, Tammy

From: David Chittenden <davidlc56@hotmail.com>
Sent: Tuesday, May 11, 2021 4:51 PM
To: EnvPlanning; BOS; MV City Council Council
Subject: Fw: Enso Village News | Construction to Begin Summer 2021. Schedule a Private Appointment to View Available Floor Plans

I just received this
They will have some low impact items that ALL
new Marin developments should have
David Chittenden

From: Enso Village <info-enso@enso.kendal.org>

Sent: Tuesday, May 11, 2021 10:06 AM

To: davidlc56@hotmail.com <davidlc56@hotmail.com>

Subject: Enso Village News | Construction to Begin Summer 2021. Schedule a Private Appointment to View Available Floor Plans

enso.kendal.org

Enso Village℠
A KENDAL AFFILIATE

Q2 2021

The Nature of Connection

Enso Village News

Construction Is Slated to Begin Summer 2021.
Only a Few Floor Plans Still Available.

Welcome to The Nature of Connection!

Live Now. Live Here.

The Nature of Connection is your place to learn about Enso Village—a Zen-inspired Life Plan Community currently being developed in Healdsburg, California. With a focus on mindful aging, the joys of nature, environmental stewardship, contemplative care, and healthy life choices, Enso Village offers a new paradigm in retirement living. Through a unique collaboration between San Francisco Zen Center and The Kendal Corporation, Enso Village will be an inclusive community welcoming to all.

With construction slated to begin in the summer of 2021 and the opening of Enso Village slated for 2023, we have only a few floor plans remaining. Reserve your future home now. Place a fully refundable deposit to lock in special, limited-time benefits:

- 80% Repayable Entrance Fee
- Second-Person Entrance Fee Waived
- 15% Discount on Assisted Living/Memory Care
- Residence Personalization during Development-Phase

You are invited to make an appointment to visit the Enso Village Preview Center, where you may view a large-scale model of the community and a kitchen vignette featuring contemporary design finishes.

To ensure your wellbeing and safety, the Preview Center is Guest Ready and secure. Our team is only scheduling one appointment at a time, and we are following all recommended health and safety guidelines.

Schedule your individual, in-person appointment:

ENSO VILLAGE PREVIEW CENTER
435 Allan Court
Healdsburg, CA 95448

707.756.5036
info-enso@enso.kendal.org

See Our Development Progress

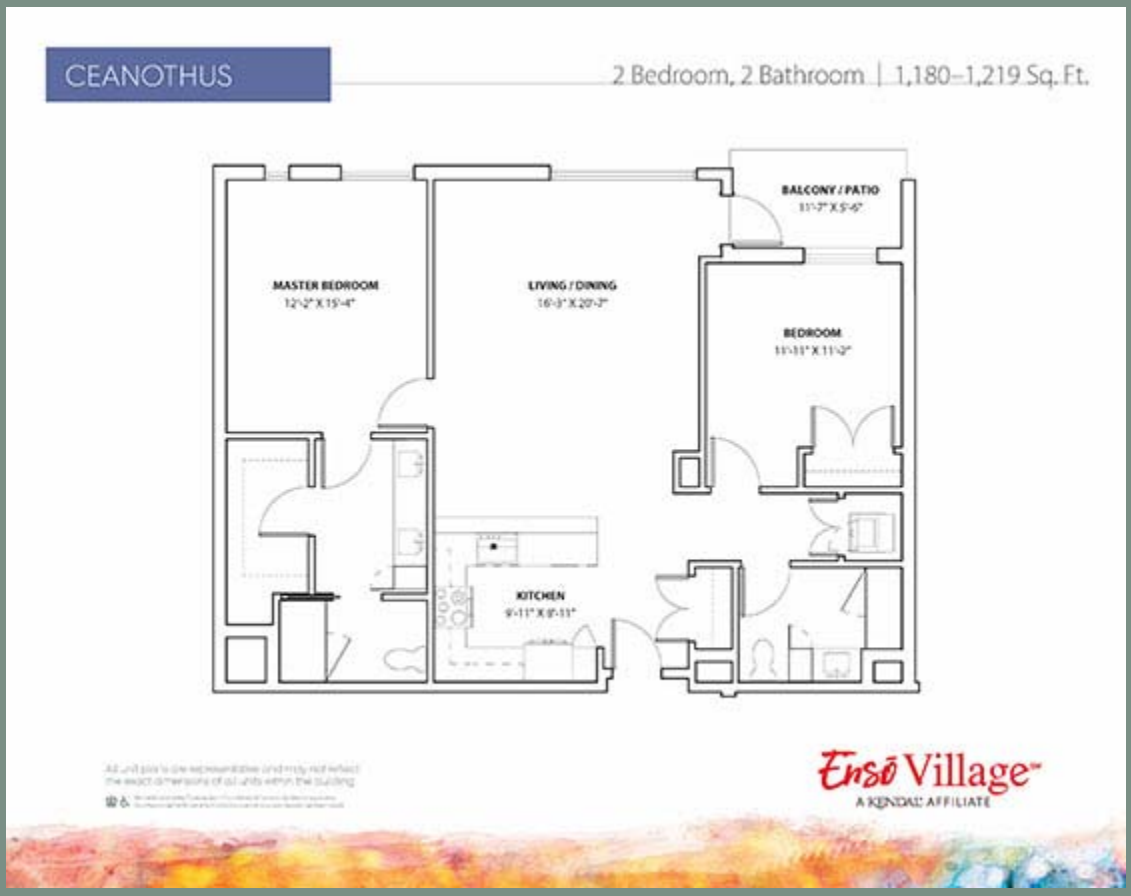
Construction Is Scheduled to Begin This Summer!

We're happy to share the latest headway in the Enso Village development process:

- The development team continues to work with the City of Healdsburg in their review of the Enso Village building permit. The review is progressing on schedule.
- The construction of the shared roadways, including all the utilities that will serve the future hotel and retail, as well as Enso Village, is underway.
- Financing documents are being finalized in preparation for the public offering of the tax-exempt bonds that will fund the construction. It is anticipated that the bonds will be certified by a third-party as "green bonds," a first for a startup senior living community. "Green bond" designation is based on a commitment to long-term sustainability. Some examples of what Enso Village will do are:
    - Divert 65-percent of construction waste.
    - Utilize composting to repurpose food waste.
    - Incorporate energy-efficient cooking, heating, and lighting.
    - Install onsite solar panels.
    - Use drought-tolerant native plantings to reduce water consumption.
    - Provide exterior lighting designed to reduce light pollution and to protect night skies and local, nocturnal fauna.
    - Include an urban farm as a source of local, organic produce.
- Construction at Enso Village is scheduled to begin this summer!

Featured Floor Plan

Introducing the Ceanothus:
Limited 2-Bedroom Inventory



All designed to offer light, space, comfort, privacy, and modern technology, an array of varying floor plans at Enso Village present options to fit different budgets and ways of life. This unique two-bedroom/two-bathroom plan features a central, open living/dining area flanked by spacious bedrooms.

With only a few residences remaining, this plan will not be available for long. Call today to find out how to make the Ceanothus your new home.

Call 707.756.5036

Hear What Our Future Residents are Saying ...

OPENING 2023

WHY WE PICKED

Enso Village™
A KENDAL AFFILIATE

"This is an adventure. It means giving up my home and community to leap into the unknown. I look forward to less responsibilities, meeting strangers and becoming friends, and digging into what is really important to me."

The Perfection of Giving

Volunteerism as a Practice

Volunteers from San Francisco Zen Center and Kendal Communities Share Their Experiences

In Buddhist teachings, the paramitas, or "perfections," are a set of virtues we strive to cultivate as part of the path to enlightenment. The first is dana, the perfection of giving, by which we give without expecting anything in return.

Jeffrey Schneider, San Francisco Zen Center, Outreach & Volunteer Coordinator

"There are many ways to be of service," says Jeffrey Schneider, an ordained Zen priest who has served as the outreach and volunteer coordinator at San Francisco Zen Center's (SFZC) City Center for the last decade. "Some people are able to give time, while others are able to give money. We all practice generosity in a way that is appropriate to our particular circumstances. Volunteering, or being of service to others—giving our time, energy, physical presence, work—is one way we can practice the perfection of giving."

City Center, also known as Beginner's Mind Temple, provides volunteer and outreach opportunities—both within and beyond the Temple—for volunteers of varying backgrounds and levels of understanding of Buddhist teachings. During normal times when in-person events are not on hold due to COVID-19*, volunteer opportunities at the Center itself include everything from the ringing of bells and leading of chants during services in the Zendo, to staffing the Center's library, bookstore, and kitchen. Some of the outreach opportunities beyond the Temple include leading offsite meditation groups throughout the community (currently taking place online), providing meals for homeless and formerly homeless people, and helping host holiday festivities for children and families in transitional housing. A program that has been able to continue without interruption throughout the pandemic is the Prison Correspondence Program. City Center's volunteer penpals, who must have an established practice and understanding of Buddhist teachings to volunteer, collectively answer hundreds of letters a year from incarcerated individuals from all over the country.

For Jeffrey, volunteering has always been central to life, even before he came to San Francisco Zen Center. In addition to the many volunteer efforts he coordinates and participates in as volunteer coordinator at City Center, he makes time to serve others during his personal time. For example, he volunteers at the San Francisco Food Bank on Tuesdays. And over the years, he has performed many memorial services for formerly homeless people who have passed away while living in permanent shelters. "Knowing that I'm out in the community supporting other people, helping to the extent that I can—that's very important to me," he says. "That's why this is my dream job, as well as an important expression of my religious practice."

While true generosity gives without expecting anything in return, volunteering in service of others often enriches the lives of those serving in addition to the lives of those being served. "A lot of people who volunteer are in search of more than just spirituality. They are in search of community," says Jeffrey. "It's not only about the practice of giving, but the practice of forming deep, strong connections with people who share the same values. It's about the Sangha—the community of people who practice together, and the sense of fulfillment that comes with that community. For example, for years, a group of six of us have come to Zen Center every Thursday to make lunches. Now, even though we can't do that, we still meet on Zoom each week, and several times this year, we've been able to meet in person in a local park while wearing masks and maintaining social distancing. We've become very good friends and still support each

other." Volunteer opportunities and outreach efforts have been the beginning of many enduring, enriching friendships.

There is also the joy of being able to give and the deepening of one's own practice that comes through volunteering. "For example, when I correspond with someone as a penpal in the Prison Correspondence Program," Jeffrey explains, "I sometimes have to dig deeply to find the intentions of my own practice in ways I might not be able to without that give and take."

Visit City Center's Outreach & Volunteer page for more information.

**City Center staff members are hopeful that regularly scheduled volunteer and outreach programming will be able to be resumed by May, 2021. Stay tuned.*

Anne Elder, Kendal at Oberlin, Oberlin Volunteer Coordinating Committee Chair

"It's interesting to see how quickly new residents become involved in volunteering here at Kendal," says Anne Elder, a resident at Kendal"Service is part of why people come to Kendal. They hear that as part of the mission." Anne was encouraged to be a part of the Committee from her earliest days at Kendal at Oberlin. "I worked my way through until I was holding the reins," she says.

The primary responsibilities of the Oberlin Volunteer Coordinating Committee are tracking and reporting annually on resident volunteer hours and activities, and keeping residents apprised of all volunteer opportunities—both on and off campus. On campus, residents volunteer sitting at the front desk when staff is on leave, entertaining prospective residents as part of the Marketing Committee, and—during the pandemic—delivering mail, packages, and food to fellow residents. "Our volunteers accumulated almost 45,000 hours in 2020—nearly all on campus and Zoom due to the pandemic," Anne says.

Many of the off campus volunteer opportunities take place within Oberlin City Schools. "There are so many amazing opportunities," Anne says. Each week, a group of residents goes into elementary schools to read to kindergarteners, while for many years another group set up listening posts within elementary schools and junior high schools, where residents met with students who needed a sympathetic ear.

Resident volunteers also participate in a number of programs at the nearby Oberlin College. Some audition for and play in concerts by the Oberlin Arts and Sciences Orchestra, an ensemble open to college students and members of the community. Others sing in the College's Musical Union. Other volunteers participated in an Oberlin College course exploring death and dying, in which first-year students were paired with Kendal residents who spent time talking and studying with them, shared an older person's perspective, and, in some cases, provided some of the benefits of a grandparent for students who may not have known one. In another program, Kendal resident volunteers mentor second-year music conservatory students from Asia, meeting with them virtually throughout the year to help them improve their English.

As it is in the Buddhist tradition, service is core to the Quaker philosophy and puts into practice several of Kendal's values, such as "To take responsibility for our role in maintaining the larger community in which we live and work;" and "To foster a culture of generosity, encouraging and developing full use of our time, talent, and resources." In some cases, service takes the form of being a "change agent," a person with the skill and desire to transform an organization, a community, or a society. "When people are first visiting here as prospective residents," says Anne, "they hear from current residents who share how busy they keep with volunteer activities. That's how the culture gets passed along."

While not a Quaker herself, but a member of a United Church of Christ congregation, Anne resonates strongly with the mission to serve and help others. “Research shows, you’ll live a longer and happier life through service. One enriches one’s own life by giving time to people other than one’s self,” Anne says. “Volunteer work out in the community beyond Kendal often brings us up against others’ needs in the world. While I find Kendal residents to be pretty aware of what’s happening in the world, we are still often reminded through volunteering that we are privileged here, and we have something that we should share.”

Tova Green, San Francisco Zen Center, Liaison for Zen Centers in the Suzuki Roshi Lineage

“One of the vows we take in Zen practice is to live and be lived for the benefit of all beings. It is a teaching that permeates everything we do,” says Tova Green, who is the liaison for San Francisco Zen Center’s network of 75 affiliated Zen groups in the Suzuki Roshi lineage. As a licensed clinical social worker by profession, and a Zen priest and teacher, for Tova, being of service to others is a way of life—a way “to make a difference in the world.”

Tova’s volunteer activities included leading a monthly meditation group at the San Francisco Public Library (currently on hold due to the pandemic). Participants came from all walks of life—library staff, library patrons (many of whom were homeless), and people working in offices nearby. “You never knew who would turn up,” she says, “and I miss doing that.”

She also trained and served as a volunteer with Zen Hospice Project (ZHP). For a year, she volunteered weekly at a large public hospital and then joined the ZHP staff as a volunteer coordinator. In more recent years, Tova volunteered for a local hospice where she meditated or chanted with Buddhist patients and their families or taught meditation when it was requested. Tova comments, “Being with people as they are dying is a great honor because it is a profound life transition.”

At San Francisco Zen Center, Tova co-leads two affinity groups. She cofounded the SFZC Queer Dharma Group eleven years ago, which welcomes those who identify as LGBTQIA, and “Unpacking Whiteness: Reflection and Action,” which explores white privilege and racism.

During the weeks leading up to the 2020 U.S. presidential election, Tova attended an online election retreat organized by members of Berkeley Zen Center. For several weeks afterward, she and other City Center residents met to write letters to voters and potential voters in swing states. “This was something we could do during the pandemic to connect with larger political themes,” she says.

Some of Tova’s volunteer experiences have given her a chance to be of service to people she wouldn’t otherwise get to know, including people who are homeless. “You can hardly go for a walk in San Francisco without encountering a person who is homeless, but it’s different to develop relationships with them,” she says. “That kind of intimacy is possible especially when a volunteer activity is repeated. You get to know the people you are serving. Volunteering is a way of expanding my awareness of the wider community and opening my eyes more fully to the pain of people’s situations. I feel it widens my vision and opens my heart.”

Tova feels deeply grateful for all she has received from Zen study and living in a Zen community. “Zen practice is not just for my own peace of mind,” says Tova. “It is a way to express my gratitude and give something back to my community and the wider world.” Yet, as she points out, according to Buddhist teaching, “There is truly no giver, receiver, or gift, as all three are interconnected.”

Betty Warner, Kendal at Longwood, President-elect of Kendal at Longwood Residents Association

"I prefer the term 'engagement' to 'volunteerism,'" says Betty Warner, a resident for the past seven years at Kendal at Longwood in Kennett Square, Pennsylvania, where she is president-elect of the Kendal at Longwood Residents Association. "'Volunteering' implies you are providing a service for someone, while 'engaging' implies you are sharing your passion." Home to some 400 residents, Kendal at Longwood has nearly 100 committees—all springing from someone's passion. "I like to say that our committees pop up like mushrooms after a rain," says Betty. "They come and they go with the passions of the people who found them."

Among the many efforts through which Betty has shared her passions, she formed and chaired the Intergenerational Committee, a group aiming to promote intergenerational activity among Longwood residents and the broader community. During one of the Committee's most successful programs, The Storytelling Exchange, residents from Longwood were partnered with students from Lincoln University, a Historically Black College and University located nearby. For seven weeks, the intergenerational pairs of friends shared in conversation as the students listened to the residents' stories, then repeated the stories back to the residents. "The experience was lifechanging," says Betty. "The insights that came from that exchange were stunning. For example, when we visited Lincoln's walled campus in the midst of what had once been a cornfield, we asked the students, 'How can you bear to live here in such isolation?' They answered, 'We feel safe here. We feel taken care of. And in the spring, it is beautiful.' In turn, when the students visited Kendal at Longwood, they asked us, 'Coming from large, spacious homes, how do you bear to live so close together in these small cottages?' We answered, 'We feel safe here. We feel taken care of. And in the spring, it is beautiful.'"

Betty was also among the founding members of the website team and is a member of the Zoom team, which came into being in response to the pandemic. "We set about converting a campus of 400 residents, where the average resident-age is in the 80s, into Zoom users. It was a challenge," she says, "but it was the only way for committee members to stay connected and continue meeting." Some volunteers facilitate Zoom meetings five days a week, allowing two-thirds of Longwood's committees to continue to meet throughout the pandemic. "We joke here that, when you move in, the contract contains an invisibly inked clause saying, 'I will no longer be retired,'" she laughs.

As Kendal at Longwood prepares to celebrate its 50th anniversary in 2023, Betty reflects on the Quaker values upon which it is built. "Stewardship, caring, and compassion are components of every one of our committees and structures," she says. Many volunteers engage with the Health Center residents, from pouring water, to pushing wheelchairs, to singing to the residents. Respect is another core value at Longwood. "One Quaker belief is that we all have the light of divinity within us," she explains, "and that leads to people having a mutual respect for one another." This reciprocity is exemplified by the fact that many of the community's 100 committees operate with no chairperson, but by consensus. "We all share a passion and solve challenges together," she says.

Betty feels that the opportunities for engagement, shared passions, and learning give her a reason to get up in the mornings. "Recently, a fellow Longwood resident wrote to me concerning our on-campus woodshop which is in dire need of rehabilitation before it can reopen," she says. "He wrote, 'You know, I need to get to the business of sharing what I love, and that is making things.' To all the people who are planning a move to Enso Village when it opens, I would say this: Think about what your passion is and think about how you might share that passion. Begin to consider what is going to get you up in the mornings with pleasure. What is it you can share?"

Enso Village℠
A KENDAL AFFILIATE

enso.kendal.org

Per Health and Safety Code section 1772.2, Kendal at Sonoma has filed an application for a Provisional Certificate of Authority and a permit to accept deposits has been issued.

Enso Village
P.O. Box 2008
Healdsburg CA 95448

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W3T0pbm43T2PmW6xNkHg13j25FW51nCSM5kczgGW50khXw5wXCrxW6lzs7g6TcC14N5sl_W_1yf0NW31Lq_H6Bx2j5VRMgbk8mDSDXn7X7Qsr

Taylor, Tammy

From: Parton, Maureen
Sent: Monday, May 17, 2021 11:02 AM
To: EnvPlanning
Cc: Reid, Rachel
Subject: FYI: Strawberry Redevelopment

Hi CDA/Rachel Reid and Ascent:

A comment for the North Coast application/scoping.

Best,

Maureen

Maureen Parton
Aide to Supervisor Stephanie Moulton-Peters
mparton@marincounty.org
(415)473-7593 direct line

From: BOS <BOS@marincounty.org>
Sent: Monday, May 17, 2021 8:59 AM
To: BOS - Aides <BOS-AidesNOT@marincounty.org>
Subject: FW: Strawberry Redevelopment

Aides,

Attached is a letter received on May 15, 2021, from Dave Chittenden, relating to Strawberry Redevelopment. Please forward as you deem appropriate.

Thanks,

Joyce Evans
DEPUTY CLERK

County of Marin
Board of Supervisors
3501 Civic Center Drive, Suite 329
San Rafael, CA 94903
415 473 3768 T
415 473 3645 F
CRS Dial 711
jevans@marincounty.org

From: David Chittenden <davidlc56@hotmail.com>
Sent: Saturday, May 15, 2021 1:01 PM
Cc: BOS <BOS@marincounty.org>; MV City Council Council <citycouncil@cityofmillvalley.org>; Jody Morales <marincspp@gmail.com>
Subject: Re: Strawberry Redevelopment

Some of you have thanked me or said that they agree
If you are concerned about Mill Valley and about traffic and water issues, I would encourage you to let the planners know
The 15 minutes that you spend writing a letter maybe translated into 15 minutes less every time you exit/enter Mill Valley
not just at the Tiburon exit but also at shoreline as folks change their traffic routines
Thx
David

From: David Chittenden
Sent: Monday, May 10, 2021 5:02 PM
To: envplanning@marincounty.org <envplanning@marincounty.org>
Cc: Board Supervisors <bos@marincounty.org>; MV City Council Council <citycouncil@cityofmillvalley.org>; Jody Morales <marincspp@gmail.com>
Subject: Strawberry Redevelopment

Greetings
We live in Sunrise Point. We have noticed a tremendous increase in traffic at the E Blithedale exit/entrance over
the past 15 years. The traffic increase used to be at rush hours-- now it is at all times during the day. This has led to
increased smog and pollution since it can now take 20 minutes to exit Mill Valley from Camino Alto to the freeway
How do the developers plan to help deal with FURTHER and MORE traffic flow problems? I think that we are at
PEAK flow problems right now. When it was a seminary, most students stayed on the campus. I doubt this will happen
with the "redeveloped" campus. Then the new housing-- lots of increased traffic during construction and then on going
traffic increases by the homeowners and their "staffs"
Also, we should not expect the traffic problem to just be at the E Blithedale exit, in my opinion it will build up on THE FREEWAY
and affect freeway traffic especially East bound

NEXT is the water issue- we already have water crises. Where is the "new" water going to come from? At a bare minimum
the developers should pay to find new resources-- A saline plant?, recycled "gray" water and certainly NO GRASS or
swimming pools
We also believe that the developers should provide copies of the plans to all Mill Valley residents so that they/we can look
at the project and comment about it.
Thank you,
David Chittenden

Taylor, Tammy

From: Josh Sale <jsale@tril.com>
Sent: Wednesday, May 19, 2021 8:23 AM
To: EnvPlanning
Cc: Lai, Thomas; Moulton-Peters, Stephanie; Riley F. Hurd
Subject: Conduct of May 18, 2021 NCLH Scoping Session

I wish to reiterate my complaint from last night in writing. In particular, I feel that the decision to hide the list of participants at last night's NCLH scoping session was inconsistent with the Brown Act and the Governor's executive order from March of 2020 which allowed public meetings to be conducted via teleconference. If you review the final paragraph of the executive order (below), you'll see the Governor urging you to adhere as close as reasonably possible to local law and to maximize transparency.

The Board of Supervisors and Planning Commission make the participant's pane available to all attendees. What's different about last night's scoping session? Why the secrecy? Did NCLH or any of its representatives have access to the list of participants? Why did the organizer's of the Zoom call take the overt step to disable the participant's pane?

Also was condition (ii) from the executive order met last night? Has the County been addressing condition (ii) since it begin conducting public meetings via Zoom?

Sadly, it feels like we're off to a bad start with the EIR process.

Sincerely,

Josh Sale

11. Notwithstanding any other provision of state or local law, including the Bagley-Keene Act or the Brown Act, a local legislative body or state body is authorized to hold public meetings via teleconferencing and to make public meetings accessible telephonically or otherwise electronically to all members of the public seeking to attend and to address the local legislative body or state body, during the period in which state or local public officials impose or recommend measures to promote social distancing, including but not limited to limitations on public events. All requirements in both the Bagley-Keene Act and the Brown Act expressly or impliedly requiring the physical presence of members, the clerk or other personnel of the body, or of the public as a condition of participation in or quorum for a public meeting are hereby waived.

In particular, any otherwise-applicable requirements that

(i) state and local bodies notice each teleconference location from which a member will be participating in a public meeting;
(ii) each teleconference location be accessible to the public;
(iii) members of the public may address the body at each teleconference conference location;
(iv) state and local bodies post agendas at all teleconference locations;
(v) at least one member of the state body be physically present at the location specified in the notice of the meeting; and
(vi) during teleconference meetings, a least a quorum of the members of the local body participate from locations within the boundaries of the territory over which the local body exercises jurisdiction

are hereby suspended, on the conditions that:

(i) each state or local body must give advance notice of each public meeting, according to the timeframe otherwise prescribed by the Bagley-Keene Act or the Brown Act, and using the means otherwise prescribed by the Bagley-Keene Act or the Brown Act, as applicable; and
(ii) consistent with the notice requirement in paragraph (i), each state or local body must notice at least one publicly accessible location from which members of the public shall have the right to observe and offer public comment at the public meeting, consistent with the public's rights of access and public comment otherwise provided for by the Bagley-Keene Act and the Brown Act, as applicable (including, but not limited to, the requirement that such rights of access and public comment be made available in a manner consistent with the Americans with Disabilities Act).

In addition to the mandatory conditions set forth above, all state and local bodies are urged to use sound discretion and to make reasonable efforts to adhere as closely as reasonably possible to the provisions of the Bagley-Keene Act and the Brown Act, and other applicable local laws regulating the conduct of public meetings, in order to maximize transparency and provide the public access to their meetings.

Taylor, Tammy

From: Lloyd Wiborg <wiborgs@pacbell.net>
Sent: Tuesday, May 18, 2021 8:07 PM
To: EnvPlanning
Subject: EIR Comment on North Coast Land's proposal for the Seminary

I listened to tonite's entire presentation, and was shocked that no one mentioned the Strawberry Recreation Board's position on the Seminary development plans. That Board is, for all practical purposes, the seat of government for the unincorporated Strawberry community, and has the responsibility to submit positions on local development projects to Marin County.

After several Board meetings where Strawberry residents had the opportunity to share their opinions about North Coast's development plans for the Seminary, which opinions were overwhelmingly negative, the Board voted unanimously to NOT approve North Coast's submitted plans, and urged County Planning to NOT begin the EIR, citing the facts that much was left out of the plans, and that the plans in no way complied with the Strawberry Community Plan.

I urge you to thoroughly review the Strawberry Recreation Board's submission to Marin County, which has been totally ignored.

This 50-year Strawberry resident/homeowner wonders why?

Lloyd Wiborg
43 & 43A Reed Blvd., 1972-1987
70 Harbor Cove Way since 1987

Taylor, Tammy

From: Patricia Albo <palbo415@msn.com>
Sent: Tuesday, May 18, 2021 3:30 PM
To: EnvPlanning
Cc: Patricia Albo; Josh Sale
Subject: EIR for Seminary Project

To: Environmental Planning (re:Seminary Project EIR)

From: Patricia Albo
Homeowner: 24 Heron Dr, Mill Valley 94941

I would like the following 3 items addressed in the Seminary Project EIR:

1. Review of traffic and impacts on Seminary Drive. It should be noted that Seminary Drive cannot be widened to allow more traffic as the roadway (from the Stop sign to the first Condo bldg on the right) is flooded on occasion during the winter by water from the Richardson Bay estuary. These floods impact all drivers, regardless of the direction they are traveling. Drivers heading toward the Seminary main entrance during one of these floods must drive their car over the center line so they can avoid the pooled water.

2. Regardless of the findings on traffic impacts I request the EIR include a statement referencing the above mentioned flooding as well as the estuary being a habitat for numerous animals, specifically over 30+ Egrets at one time and stating that Seminary Drive cannot be widened either now or in the future..

3. In addition, it should be obvious that Strawberry Drive cannot be widened and the EiR should also include this information.

Thank you.
Patricia L. Albo
415-383-0799

Taylor, Tammy

From: Penna@pennaomega.com
Sent: Tuesday, May 18, 2021 7:32 PM
To: EnvPlanning
Subject: Seminary Project - Zoom Meeting Comments

Penna Omega would like information about:
I would like to clarify my point, I think I said "Strawberry Master Plan" instead of the Strawberry Community Plan. This was in error.

The Strawberry Community Plan should NOT be rewritten without the input of the COMMUNITY.

We have had hundreds of residents who need to be heard.

Thank you,

Penna Omega

Taylor, Tammy

From: rickharris44@comcast.net
Sent: Tuesday, May 18, 2021 7:20 PM
To: EnvPlanning
Subject: Seminary Scoping Comments

Statement of Richard Harris to Marin County CDA Scoping Session – May 18, 2020

My name is Richard Haris. My wife and I have lived at 313 Richardson Drive in Strawberry for 34 years. I am also a former board member and president of the Marin Municipal Water District.

I want to address the specific environmental impact of the proposed development of the Golden Gate Baptist Theological Seminary on MMWD's ability to provide water for human consumption, sanitation, and fire protection.

Adequacy of Water Supply During a Normal Year
CWP Section 4.9-1: Land uses and development consistent with the *Draft 2005 CWP Update* would increase the demand for water. As a result, "*water supplies would be insufficient to serve some of the unincorporated and incorporated areas in normal rainfall years"*. Development of additional water resources would be required. Impact: Significant and Unavoidable

CWP Limits on New Development
CWP Section 3.11: Marin's 2007 Countywide Plan recognizes that new development generates a need for new and expanded public facilities related to water supply and "*limits growth based on the availability of services that cannot be distributed without limitations and conservation requirements".*

Factors Exacerbating Supply Shortage
If the current environment weren't sufficiently dire, two other factors will exacerbate an already inadequate water supply – climate change and development.

As mentioned in the 2007 CWP (Section 2.7) "*climate change will amplify existing environmental problems, such as erosion, storm-surge floods, and landslide risk, and changes to the water cycle will further stress domestic water supply"*. Indeed, recently released NOAA data shows that since 2000 Marin County has experienced:

- 14 yrs. of moderate drought
- 10 yrs. of severe drought
- 7 yrs. of extreme drought
- parts of 6 yrs. of exceptional drought

And, in Sacramento, housing legislation currently under consideration could easily have the effect of doubling Marin's population.

Marin Municipal Water District
In addition to the County, MMWD has also recognized the water shortage by declaring a water emergency on April 20th. A water emergency can only be declared when "*the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply to the extent that there would be insufficient water for human consumption, sanitation, and fire protection"*. The Building Industry Association of Northern California v. MMWD case found that MMWD may declare a moratorium on new water connections upon the declaration of a water emergency. Such a moratorium was implemented under a more enlightened board in 1976. It's unlikely the MMWD will declare a moratorium given the very tentative nature of their finances. However, they may be compelled to do so via a ballot initiative.

The development of the Seminary property will unquestionably adversely impact a water supply that is already recognized as inadequate by both the Countywide Plan and the MMWD Water Emergency.

Richard L. Harris, Jr.
Cell: 415.730.4072
Email: rickharris44@comcast.net

Taylor, Tammy

From: Riley Hurd <rhurd@rflawllp.com>
Sent: Tuesday, May 18, 2021 4:01 PM
To: Case, Brian
Cc: jsale@tril.com; Lai, Thomas; Reid, Rachel; Levenson, Michelle; Moulton-Peters, Stephanie; EnvPlanning; Washington, Brian
Subject: North Coast Land Holdings (P1490) -- CUP issue and scoping comment
Attachments: Ltr - CUP - 5.18.21 w exhibits.pdf

Brian,

Attached please find a letter and exhibits regarding the issue of the seminary CUP. We would implore you to carefully review and consider the evidence presented in the letter. There is simply no way the 1984 Master Plan for the Seminary was superseding a roadway bonding agreement. It turns out the 1953 Cup was amended through 1959, and that's what the now expired master plan replaced. This was common practice in Marin in the 80's.

This is a significant project, and I know the housing is important to the County. However, if the school use is not adequately addressed in the EIR, and a new CUP not obtained that actually addresses the proposed academic use, the environmental review and entitlements will be deficient, which will likely result in costly and time-consuming litigation. The Seminary Neighborhood Association supports housing at this property, but the project as a whole needs to be sized appropriately, and sufficiently studied.

Thank you.

Riley F. Hurd III, Esq.
RAGGHIANTI | FREITAS LLP
1101 5th Avenue, Suite 100
San Rafael, CA 94901
Tel: 415.453.9433 ext. 126
Fax: 415.453.8269
Email: rhurd@rflawllp.com
Website: http://www.rflawllp.com/

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Ragghianti|Freitas LLP

Attorneys at Law

1101 5th Avenue, Suite 100
San Rafael, CA 94901
telephone 415.453.9433
facsimile 415.453.8269
www.rflawllp.com

Riley F. Hurd III
rhurd@rflawllp.com

May 18, 2021

Via E-Mail Only

Brian Case
Deputy County Counsel
County of Marin
3501 Civic Center Drive, Room #275
San Rafael, CA 94903

Re: North Coast Land Holdings (P1490) -- New CUP required for educational use

**** FOR INCLUSION IN THE ADMINISTRATIVE RECORD ****

**** EIR SCOPING COMMENT ****

Dear Mr. Case:

This letter in response to your letter of March 2, 2021, regarding the above referenced matter. This letter also constitutes an EIR scoping comment, and should be included in the administrative record for this project.

On January 25, 2021, I wrote to you and noted that if North Coast Land Holdings seeks an educational use at the former seminary property, a new CUP for that use is required. My letter, attached as **Exhibit A**, very clearly laid out the evidence that the 1953 Use Permit allowing a self-contained seminary was superseded by the approval of the 1984 Master Plan, which has since expired. Your response letter, attached as **Exhibit B**, disregarded the evidence I provided, and instead reasserted that a roadway bond agreement was somehow the "CUP" that was superseded by the 1984 Master plan. As discussed below, this cannot be true. Accordingly:

- **If the proposed educational use is not analyzed in the project EIR, it will be a deficient CEQA document**

- **If a new CUP is not sought for any educational use proposed at the property, such a use will be unpermitted**

In your letter of March 2, 2021, you assert that a document entitled "Improvement Agreement Under Conditional Use Permit" is the "1959 Campus Plan Use Permit" that was superseded by the 1984 Master Plan. This document is objectively not a use permit. Even its title states that it is an "Improvement Agreement" being submitted "**under**" (i.e. pursuant to) a use permit. Attached as **Exhibit C** is a June 29, 1959, letter from then County Counsel, Leland Jordan, to the Golden Gate Baptist Theological Seminary, by which he transmitted the subject Improvement Agreement. This letter opens with the following sentence:

> In accordance with your request, I am submitting herewith an agreement to be executed by the County and the Seminary under your Use Permit which is in the form I would recommend to the Board of Supervisors.

It is immediately clear from this language that the agreement is being submitted as required by the school's use permit.

Then, there is the language of the Improvement Agreement itself. All throughout the Improvement Agreement there are specific references to the actual use permit that required the Improvement Agreement. Nearly all of the WHEREAS sections of the Improvement Agreement reference the Use Permit granted to GGBTS, and that the Improvement Agreement is being entered into as a condition of said use permit.

For example, the Improvement Agreement contains the following statements:

> WHEREAS, Seminary has heretofore applied to County for a Use Permit to allow the construction of a theological seminary, and other buildings incidental to such use, on

As you can see, the Improvement Agreement starts by acknowledging a use permit for the Seminary.

> WHEREAS, County has heretofore granted said Use Permit subject to the condition that Seminary construct a public road from the southeasterly terminus of Ricardo Road to Gate III of the theological seminary as said Gate III is

The Improvement Agreement then notes that the use permit had a condition of approval that the seminary construct a public road around the seminary.

WHEREAS, the terms of said Use Permit require that Seminary, prior to occupancy of any buildings constructed upon said property, enter into an agreement secured by an adequate performance bond agreeing to the construction of said roads; and

The Improvement Agreement then recites that the Use Permit required a performance agreement and bond for the construction of the roadway prior to occupancy of the new Seminary buildings. Very clearly, the Improvement Agreement is **not** the 1959 Campus Plan Use Permit, or any use permit for that matter.

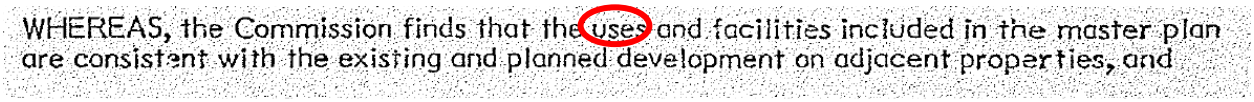
With this in mind, now consider the County's position and statements regarding the CUP for the subject property. The County asserts that the 1953 CUP for the property is the only governing entitlement, and that it remains in force. The County also states that the 1953 CUP has **just a single condition attached to it**. Specifically, that singular condition was: "that prior to any construction or improvement, the applicant shall secure the approval of the Marin County Planning Commission." (See **Exhibit D.**)

Originally, it was true that this was the singular added condition to the CUP. (Many other conditions were contained in the project description themselves and became "conditions" when the project was approved; i.e. "self-contained unit," buffer of open space, all students to be housed on site, etc.). However, the County appears to be unaware that the 1953 CUP was amended many times over a period of 6 years until 1959. Attached as **Exhibit E** are the various minutes of the hearings at which the CUP was amended. The record is clear that many conditions beyond the sole original condition were added to the CUP as part of approving the "development plan." For example, on July 29, 1957, a hearing was held regarding "**reconsideration of original use permit conditions**." At this hearing, a condition regarding the construction of one of the residences on the Seminary property was amended (i.e. the condition **already existed**, so clearly more conditions were added beyond the first one). The CUP, and its conditions, evolved as the Campus Plan was developed, and new and different conditions were added. On October 28, 1957, another use permit condition was amended regarding the dedication of West Seminary Drive. Even on April 3, 1958, the Planning Commission was holding a hearing for the GGBTS project labeled "**reconsideration of use permit conditions**."

Obviously, these amendments were not to the 1959 Improvement Agreement, as it didn't even exist yet. In actuality, the 1953 Use Permit was amended through 1959 as part of the original condition to secure a development plan. The final CUP, after all the amendments, was the 1959 Campus Plan Use Permit, which was addressed by the 1984 Master Plan as follows:

> **"With the approval of this Master Plan, the previously approved 1959 Campus Plan Use Permit shall become null and void and of no further effect or benefit."**

It makes no sense that the Master Plan was superseding a roadway improvement agreement. Unfortunately, the staff report for the BOS meeting where the Master Plan was approved has gone missing from the County files. However, there are multiple examples countywide of Master Plans in the 80's replacing Conditional Use Permits from the 50's and 60's. During this era, Master Plans were utilized as site-specific zoning, approving both **uses** and physical development. That's exactly what happened here. For example, the approval resolution for the Master Plan states:


WHEREAS, the Commission finds that the uses and facilities included in the master plan are consistent with the existing and planned development on adjacent properties, and

The RMP zoning designation, pursuant to Table 2-3 in Code Section 22.10.030, **only allows educational uses with a conditional use permit**. Accordingly, if NCLH seeks to establish a new academic use at the property, a new Use Permit is required.

Conclusion

We understand that this information is a significant deviation from the County's stated position on the entitlement status for the Seminary property. However, this is a project that needs to be done right. It is too significant for an error of this proportion to continue to be advanced.

If the applicant wants to run a school at the property, it must include a request for a Use Permit for a school, and clearly describe the operational characteristics of said school such that there can be a meaningful environmental review, as well as an informed consideration of the required CUP findings. The current failure to provide **any information whatsoever** about the new school use, which is central to the property, and most significant in its impact, leaves a gaping hole in the project description, and will result in a deficient EIR and insufficient entitlements for the proposed use.

Any entitlement or EIR without a school CUP will be null and void, and subject to legal challenge. Accordingly, it seems best for all involved that the school be described and analyzed, and the required CUP be applied for.

Thank you.

Very Truly Yours,

Riley F. Hurd III

CC: Seminary Neighborhood Association
Supervisor Moulton-Peters
Marin County Planning Commission
Brian Washington
Michelle Levenson
Rachel Reid

EXHIBIT A

Ragghianti|Freitas LLP

Attorneys at Law

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San Rafael, CA 94901
telephone 415.453.9433
facsimile 415.453.8269
www.rflawllp.com

Riley F. Hurd III
rhurd@rflawllp.com

January 25, 2021

Via E-Mail Only

Thomas Lai
Community Development Department
County of Marin
3501 Civic Center Drive, Room #308
San Rafael, CA 94903

Re: North Coast Land Holdings (P1490) -- New CUP required for educational use

Dear Mr. Lai:

Our office continues to represent the Seminary Neighborhood Association in connection with North Coast Land Holdings' proposal to redevelop the old Seminary site. This letter is regarding a critical missing component of the application currently on file with the County.

Specifically, if NCLH seeks an educational use at the property, a new CUP for that use is required. The 1953 Use Permit allowing a self-contained seminary to operate at the property was superseded by the approval of a 1984 Master Plan for the site. When the Master Plan expired, so did the right to operate an educational use. Accordingly, in order for the current application to be complete, it must also include a request for a Use Permit for a school, and clearly describe the operational characteristics of said school such that there can be meaningful environmental review, as well as an informed consideration of the required CUP findings.

Background

The Golden Gate Baptist Theological Seminary ("GGBTS") bought the Strawberry property in September of 1953. In October of 1953, the GGBTS obtained an initial CUP from the County that allowed for a very specific use: "**a Theological Seminary and dormitories and other building incidental to such use**."

USE PERMIT

Under the provisions of Section 20 of Ord. No. 264, the Zoning Ordinance of the County of Marin, State of California.

A USE PERMIT is hereby granted authorizing Edward D. Landels
(Name of person)
to permit the construction of a Theological Seminary and dormitories and xxx other buildings incidental to such use, subject to the attached con-
(Use of land, building or structure proposed to be conducted) dition.

The record for the CUP indicates that there were specific operational characteristics that were a part of the Seminary's application, and that a single initial condition of approval was also placed on the CUP.

On October 6, 1953, the Planning Director for the County wrote a staff report for the Board of Supervisors in advance of their consideration of the Seminary's Use Permit. This report set forth a set of six "general facts" regarding the application. In summary, the general facts about the application were as follows:

1. The property would be developed as a "self-contained unit."
2. A buffer of "recreational open land" would surround the entire property.
3. There would be approximately 1,000 students, and **all of the students would be housed on-site**. Married students would live in on-site apartments, and single students would live in on-site dorms.
4. The community supported the presence of a post-graduate institution.
5. The community liked that the school would pay its fair share to local service districts.
6. Further review of a development plan for the property would be needed to ensure an appropriate layout of buildings on the site.

The conclusion of the October 6, 1953, staff report noted that the Planning Commission voted to recommend that the Board of Supervisors approve the CUP **"as above set forth,"** on the condition that the Seminary come back to the Commission for approval of a development plan for the property.

The Board of Supervisors then approved the application, **inclusive of its details regarding housing, open space, and enrollment,** and did impose the condition that "prior to any construction or improvement, the applicant shall secure the approval of the Marin County Planning Commission."

After approval of the initial 1953 CUP, GGBTS spent years developing a campus plan and returning to the Planning Commission for what the minutes repeatedly describe as **"Reconsideration of Use Permit."** The record is clear that many conditions beyond the sole original condition were added to the CUP over the years. For example, on July 29, 1957, a hearing was held regarding "**reconsideration of original use permit conditions**." At this hearing, a condition regarding the construction of one of the residences on the Seminary property was amended (i.e. the condition **already existed**, so clearly more conditions were added beyond the first one). The CUP, and its conditions, evolved as the Campus Plan was developed, and new and different conditions were added.

On October 28, 1957, another use permit condition was amended regarding the dedication of West Seminary Drive. Even on April 3, 1958, the Planning Commission was holding a hearing for the GGBTS project labeled "**reconsideration of use permit conditions**." Clearly, the original condition to the CUP that the applicants return to the Planning Commission for approval of their development plan led to a much more robust and evolved set of conditions and an ultimate CUP allowing for the construction of the project.

Why does all of this matter?

Because, in the early 1980's, GGBTS applied for a Master Plan for the entire property in order to allow for more development. The narrative in this Master Plan indicates that, at the time, GGBTS felt it had a vested right in its existing CUP, and therefore a Master Plan was not necessary for further development. However, the Master Plan itself states that **GGBTS ultimately decided not to try and rely on any allegedly remaining vested rights, and instead applied for, and fully participated in, the Master Plan process.** The Master Plan was eventually approved by the County Board of Supervisors in March of 1984.

Condition 19 of the Master Plan stated the following:

> **"With the approval of this Master Plan, the previously approved 1959 Campus Plan Use Permit shall become null and void and of no further effect or benefit."**

The Master Plan is unequivocal that it became the governing entitlement document for the property, and that the CUP, as amended by the many hearings through 1959, was now null and void.

However, when asked about this specific language, we were informed by County staff that the term "1959 Campus Plan Use Permit" was not referring to the use permit for the property, but instead to an approval for a roadway. Only recently have we actually been provided with the document that the County claimed was nullified by the Master Plan, and it simply is not, and cannot be, the referenced "1959 Campus Plan Use Permit."

Instead, what the County provided was a document entitled "**Improvement Agreement** Under Conditional Use Permit." Just as it sounds, this document is an improvement agreement by which the GGBTS agrees to dedicate and bond a roadway, which was a condition of its amended CUP. All throughout the Improvement Agreement there are specific references to the actual use permit that required the improvement agreement. Nearly all of the WHEREAS sections of the Improvement Agreement reference the Use Permit granted to GGBTS, and that the Improvement Agreement is being entered into as a condition of said use permit. Despite further requests, the County has failed/refused to provide the actual ultimate CUP referenced time and again in years of minutes.

It is unclear how or why the County would ever assert that an Improvement Agreement was somehow the document deemed null and void by the Master Plan, when the Master Plan so clearly states it is replacing a 1959 Campus **Use Permit**. Unfortunately/mysteriously, the staff report for the BOS meeting where the Master Plan was approved has gone missing from the County files. There are multiple examples countywide of Master Plans in the 80's replacing Conditional Use Permits from the 50's and 60's. During this era, Master Plans were utilized as site-specific zoning, approving both **uses** and physical development. That's exactly what happened here. If the County is unaware of these examples, we are happy to provide specific references.

GGBTS ended up obtaining quite a windfall from the Master Plan, including a significant amount of market rate housing, which was supposedly going to finance future school infrastructure. Of course, we now know that the market rate housing was built and sold, but the needed campus improvements were never made.

Ultimately, on December 12, 2017, after many extensions, the Master Plan for the Seminary expired. When the Plan expired, the property reverted back to its traditional RMP zoning designation, which, pursuant to Table 2-3 in Code Section 22.10.030, **only allows educational uses with a conditional use permit**. Accordingly, if NCLH seeks to establish a new academic use at the property, a new Master Use Permit is required.

What if the 1953 Use Permit Still Applies?

It doesn't matter, **unless** NCLH is interested in running a self-contained seminary. While CUPs run with the land (unless nullified) -- "Subsequent owners of the land have no greater rights than those of the owner at the time the conditional use permit was issued." A use permit, "is both a grant of authority to use and a limitation on the authorized uses of the property." (*Sports Arenas Properties, Inc. v. City of San Diego* (1985) 40 Cal. 3d. 808, 815.) "Absence of conditions in the use permit does not mean that the permittee may make use of the property permitted neither by the use permit nor by the zoning ordinance without permit." (*Id.*) "A use permit "must be read **in the light of the application for it**, and when that is done, it is apparent that the terms of the permit are clear." (*Id.* at 815-16.)

Here, GGBTS applied for and was granted a CUP for a theological seminary and, pursuant to the cases cited above, the terms of the application as described by the Planning Director's report to the Board are tantamount to "conditions." Setting case law aside, it is clear that the terms of the application describe and control the use being approved. The applicant has stated *as nauseum* that they have a right to an enrollment level of 1,000 students. This number only comes from the project description, not from a particular condition. Specifically, the project description stated:

> "There would be approximately 1,000 students, and **all of the students would be housed on-site**. Married students would live in on-site apartments, and single students would live in on-site dorms."

So, any assertion of a right to 1,000 students cannot ignore the words immediately following that number, which clearly required all students to be housed on site. One cannot cherry pick only the project specifications they desire, while ignoring other specifics that may be limiting.

The difference between the community impacts of a seminary, versus the impacts of other types of schools, cannot be understated. It was these very differences that played a central part in the granting of the CUP in the first place (the self-contained nature of the Seminary carried the day).

Other types of school uses generate significantly more vehicle trips, noise, and other impacts, at a level far greater than the self-contained post-graduate institution contemplated in 1953. So, even if the voided CUP were somehow still valid, it would only allow for a theological seminary with on-campus housing, not any and every "school" type of use.

Conclusion

In order for the current application to be complete, it must include a request for a Use Permit for a school, and clearly describe the operational characteristics of said school such that there can be a meaningful environmental review, as well as an informed consideration of the required CUP findings. The current failure to provide **any information whatsoever** about the new school use, which is central to the property, and most significant in its impact, leaves a gaping hole in the application. It is this total lack of data that caused the Seminary Neighborhood Association to appeal the decision to start an EIR. Despite requests from the Board of Supervisors, and assurances from planning staff, there has yet to be any description of the new school use the applicant seeks to entitle. The County needs to hit pause until this information is provided.

Any entitlement or EIR without a school CUP will be null and void, and subject to legal challenge. Accordingly, it seems best for all involved that the school be described and analyzed.

Thank you.

Very Truly Yours,

Riley F. Hurd III

CC: Seminary Neighborhood Association
Supervisor Moulton-Peters
Marin County Planning Commission
Brian Washington
Michelle Levenson
Rachel Reid

EXHIBIT B

COUNTY OF MARIN

OFFICE OF THE
COUNTY COUNSEL

Brian E. Washington
COUNTY COUNSEL

Renee Giacomini Brewer
ASSISTANT COUNTY COUNSEL

Jenna J. Brady
CHIEF DEPUTY COUNTY COUNSEL

Patrick M. K. Richardson
Stephen R. Raab
Steven M. Perl
Brian C. Case
Kerry L. Gerchow
Tarisha K. Bal
Deidre K. Smith
Brandon W. Halter
Sarah B. Anker
Jacy C. Dardine
Kate K. Stanford

DEPUTIES

Colleen McGrath
ADMINISTRATIVE SERVICES
OFFICER

Marin County Civic Center
3501 Civic Center Drive
Suite 275
San Rafael, CA 94903
415 473 6117 T
415 473 3796 F
415 473 2226 TTY
www.marincounty.org/cl

March 2, 2021

Riley Hurd, esq.
Ragghianti Freitas LLP
1101 5th Avenue, Suite 100
San Rafael, CA 94901

Via email to rhurd@rflawllp.com

Mr. Hurd:

I am in receipt of the January 25, 2021 letter you wrote to the County's Community Development Agency on behalf of the Seminary Neighborhood Association ("Association"), entitled "Re: North Coast Land Holdings (P1490) – New CUP required for educational use." The Community Development Agency has referred the letter to our office for a response.

The County objects to the Association's suggestion that the 1953 use permit was amended in 1959 and that the County is "failing" or "refusing" to supply a copy of the purported 1959 amendment. As the County has already informed the Association, when the Master Plan referred to a "1959 Campus Plan Use Permit" it actually wasn't referring to any sort of 1959 amendment to the 1953 use permit for the *property*. Rather, in 1959, the County issued an approval for a *roadway* entitled "Improvement Agreement Under Conditional Use Permit." I have attached a copy of that 1959 Agreement to this letter. Staff believes that this is what the Master Plan called the "1959 Campus Plan Use Permit." If the County had any documents that suggested anything else, our staff would certainly provide them to you, as required by the Public Records Act.

Since we do not agree that there is newly discovered information that affects the County's previous analysis, we will not address other issues that newly discovered information might require the County to consider, such as how the County's previous representations to the property owner on the 1953 use permit's status might impact your argument, or how your client's position in the 2017 proceedings might affect their ability to raise the issues in your letter now or in subsequent proceedings.

Sincerely,

Brian Case
Deputy County Counsel
415-473-6117

Attachments: 1959 Improvement Agreement Under Conditional Use Permit

IMPROVEMENT AGREEMENT UNDER CONDITIONAL USE PERMIT

THIS AGREEMENT, made and entered into this 1st day of July, 1959, by and between the GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY, a corporation, hereinafter referred to as "Seminary" and the COUNTY OF MARIN, a political subdivision of the State of California, hereinafter referred to as "County";

WITNESSETH:

WHEREAS, Seminary has heretofore applied to County for a Use Permit to allow the construction of a theological seminary, and other buildings incidental to such use, on property containing approximately 126 acres lying adjacent to and south of Strawberry Manor Subdivision 4 where Richardson Drive intersects with Reed Boulevard, Marin County, California; and

WHEREAS, County has heretofore granted said Use Permit subject to the condition that Seminary construct a public road from Gate III to Gate II as shown on the site plan approved pursuant to said Use Permit; and

WHEREAS, the terms of said Use Permit require that Seminary, prior to occupancy of any buildings constructed upon said property, enter into an agreement secured by an adequate performance bond agreeing to the construction of said road; and

WHEREAS, Seminary has constructed buildings on said property pursuant to said Use Permit and is now ready to occupy the same and therefore desires to execute this agreement for the construction of said road as required by the Use Permit; and

WHEREAS, Seminary has caused to be prepared plans and specifications forthe construction of said public road from Gate III to Gate II,

RECEIVED
JUL 6 1959
MARIN COUNTY
PLANNING COMMISSION

NOW, THEREFORE, IT IS HEREBY AGREED by and between the parties hereto as follows:

1. Seminary agrees that on or before July 1, 1961, it will construct a public road in accordance with the standards hereinafter set forth from Gate III to Gate II as said gates are shown on the site plan submitted and approved in accordance with said Use Permit.

The public road herein referred to between Gate III and Gate II as shown on said site plan shall be constructed in accordance with plans and specifications attached hereto, marked Exhibit "A" and incorporated in this agreement by reference.

2. On or before July 1, 1961, Seminary shall convey to County clear and marketable title to a strip of land fifty (50') feet in width between Gate III and Gate II, as shown on said site plan with a centerline as shown on the plans and specifications attached hereto and marked Exhibit "A".

3. Seminary, immediately upon the execution of this agreement, shall deliver to County a satisfactory performance security in the principal sum of $97,500.00 to secure the faithful performance of this contract.

IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and year first hereinabove mentioned.

GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY

By _____
PRESIDENT OF THE SEMINARY

COUNTY OF MARIN

By _____
CHAIRMAN OF THE BOARD OF SUPERVISORS

ATTEST: _____

RECEIVED
JUL 6 1959
MARIN COUNTY
PLANNING COMMISSION

EXHIBIT C

PLANNING

K. WARREN McGUIRE
ASSISTANT COUNTY COUNSEL

LELAND H. JORDAN
COUNTY COUNSEL
OF
MARIN COUNTY
1008 A STREET
SAN RAFAEL, CALIFORNIA
GLenwood 3-2160

ROBERT A. SMALLMAN
DEPUTY COUNTY COUNSEL

RECEIVED
JUN 30 1959
MARIN COUNTY
PLANNING COMMISSION

June 29, 1959

Golden Gate Baptist
Theological Seminary
c/o Paul E. Mason
P. O. Box 464
Mill Valley, California

COPY

Gentlemen:

In accordance with your request, I am submitting herewith an agreement to be executed by the County and the Seminary under your Use Permit which is in the form I would recommend to the Board of Supervisors.

There are a number of points which you will note remain unsettled and should be agreed upon by the Seminary and the Board of Supervisors before the agreement can be executed:

1) The minutes of the Board of Supervisors' meeting of July 15, 1958 refer to a period of two years for construction of the road. The minutes are not clear whether the two-year period is to be measured from July 15, 1958, the date of the Board's action, or from the date occupancy commences. Your original proposed agreement provides that the construction will be completed from September 1, 1961, the original proposed date of occupancy. I assume, therefore, that it may have been the understanding of the parties that the two-year period was to measure from date of occupancy. If this is true, the appropriate completion date should be inserted in the various places therefor in the agreement.

2) You have represented that pursuant to agreement with Marin Land Company you will be able to enter upon the property between Ricardo Road and Gate III in the near future. The date established for such entry pursuant to that agreement should be inserted in the agreement in the appropriate places.

3) As far as I have been able to determine, no final understanding was reached between the Seminary and the County as to width of right-of-way and pavement for the road between Ricardo and Gate III. This should be determined and inserted in the agreement.

4) I do not know whether a centerline description has been prepared for the road from Ricardo to Gate III. If it has, it may be attached to the agreement as Exhibit B'. If not, the wording of the agreement would have to be slightly changed by referring to the alignment of this portion of the road as shown on the site plan.

5) It will be necessary to work out with the Director of Public Works and the Board of Supervisors minimum standards for the design and construction of the road from Ricardo to Gate III. These must then be inserted in the agreement. At this time these standards will, of course, (with the exception of whatever width of paving is agreed upon) be tentative and may have to be altered when the road is engineered in the field.

6) The exact amount of the bond to be posted must be determined. Among the items which the Board will probably want to consider in determining the principal sum of the bond will be an estimated cost of design of the road from Ricardo to Gate III, the estimated cost of construction of both roads (from Ricardo to Gate III and from Gate III to Gate II) and the estimated cost of acquisition of the land if conveyance is not made to the County.

Inasmuch as the agreement can at this time be tied down to definite plans and specifications only for the road from Gate III to Gate II, I have attempted to tie down as specifically as possible the remaining road. It will, of course, be your responsibility to convince the Board of Supervisors that the agreement in the form proposed should be executed inasmuch as you are not able at present to prepare plans and specifications for the road from Ricardo to Gate III.

Very truly yours,

CLAUD F. JORDAN
County Counsel

LMJ:jk
Enc.

cc: Board of Supervisors
Administrator
Director of Public Works
Planning Director

EXHIBIT D

OFFICE OF THE COUNTY CLERK

MARIN COUNTY BOARD OF SUPERVISORS

SAN RAFAEL, CALIFORNIA

DATE OCTOBER 7, 1953

TO: PLANNING COMMISSION

EXCERPT FROM MINUTES, MEETING HELD OCTOBER 6TH , 1953

RE: APPLICATION FOR USE PERMIT - EDWARD D. LANDEL

The Planning Director addressed the Board in favor of granting a Use Permit to pe mit the construction of a Theological Seminary and dormitories on approximately 130 acres of real property, lying adjacent to and south of Strawberry Manor Subdivision Four. Dr. Graves, President of the Seminary now located in Berkeley, addresed the Board, and on motion of Supervisor Schultz, seconded by Supervisor Kehoe, the Board concurred in the recommendation of the Planning Commission to grant a Use Permit to Edward D. Landel, subject to the condition that prior to any construction or improvement, the applicant shall secure the approval of the Marin County Planning Commission.

AYES: ALL

NOES: NONE

ABSENT: NONE

ATTEST: GEO. S. JONES
CLERK

RECEIVED
MARIN COUNTY
PLANNING COMMISSION
DATE OCT 8 1953

EXHIBIT E

USE PERMIT

Under the provisions of Section 20 of Ord. No. 264, the Zoning Ordinance of the County of Marin, State of California.

A USE PERMIT is hereby granted authorizing Edward D. Landels (Name of person)

to permit the construction of a Theological Seminary and dormitories and other buildings incidental to such use, subject to the attached con- (Use of land, building or structure proposed to be conducted) dition.

At _____ (Street address or location) in Strawberry Point (Name of locality or community)

between East Strawberry Drive (Street or Highway) and West Strawberry Drive (Street or Highway)

Map No. 13300 by J. C. Oglesby, Registered Civil Engineer, known as

on property legally described as: Lot ___ Block ___ Tract ___

"Plat of Portion Strawberry Point, Marin County, California" on lands of S. R. Neider, lying south of Ricardo Road

(Here indicate any other legal description other than metes & bounds

situated in a R-1, One-Family Residence District.

Area of site 130 acres ± (Square ft. or acres) Dimensions of site ____ ft. by ____ ft.

Distance from front of structure to street line _____ ft.

Property owned by S.R.Neider, 1075 California Street, San Francisco, Calif. (Name and address)

If there are special conditions under which this Use Permit is granted, a statement of such conditions is attached hereto and the permit is conditional thereon.

The use permitted hereby shall be conducted and shall conform in all particulars to the provisions of all applicable laws and ordinances. Failure to comply with all the aforementioned provisions and conditions will be cause for the cancellation of this use permit by the County Planning Commission.

APPROVED AND CONFIRMED BY BOARD OF SUPERVISORS, COUNTY OF MARIN, STATE OF CALIFORNIA, ON THE 1st DAY OF Dec 19 55

Geo. S. Jones, County Clerk

MARIN COUNTY PLANNING COMMISSION

By Mary R. Summers
Mary R. Summers
Planning Director

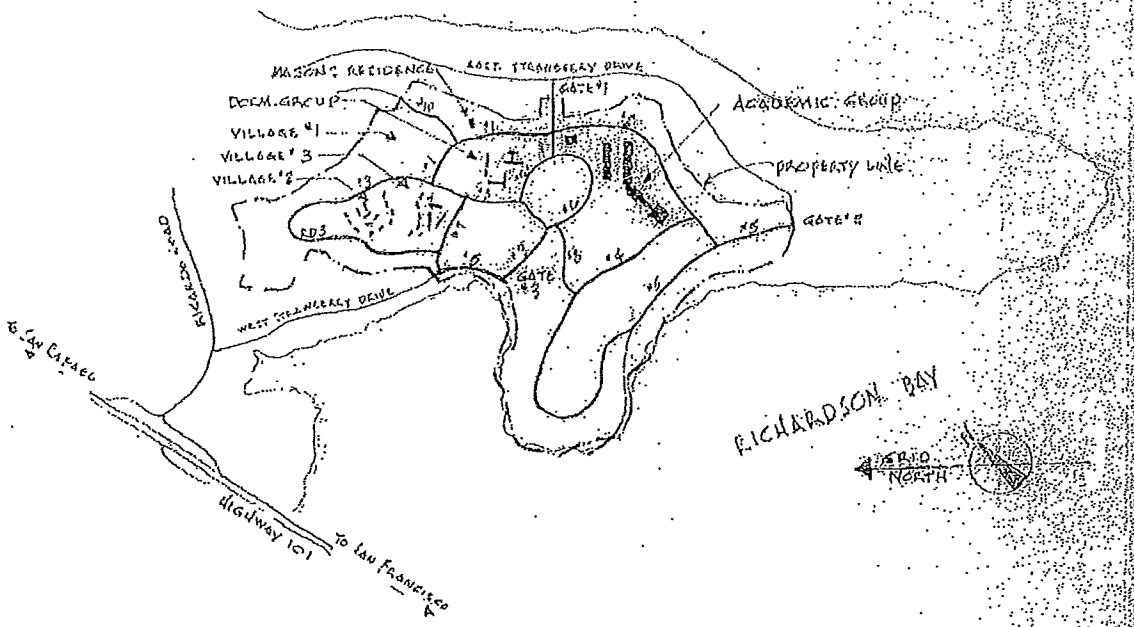
Date October 13, 1953

RECEIVED
PLANNING DEPARTMENT
COUNTY OF MARIN
JAN 12 12 10 PM '73

GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY

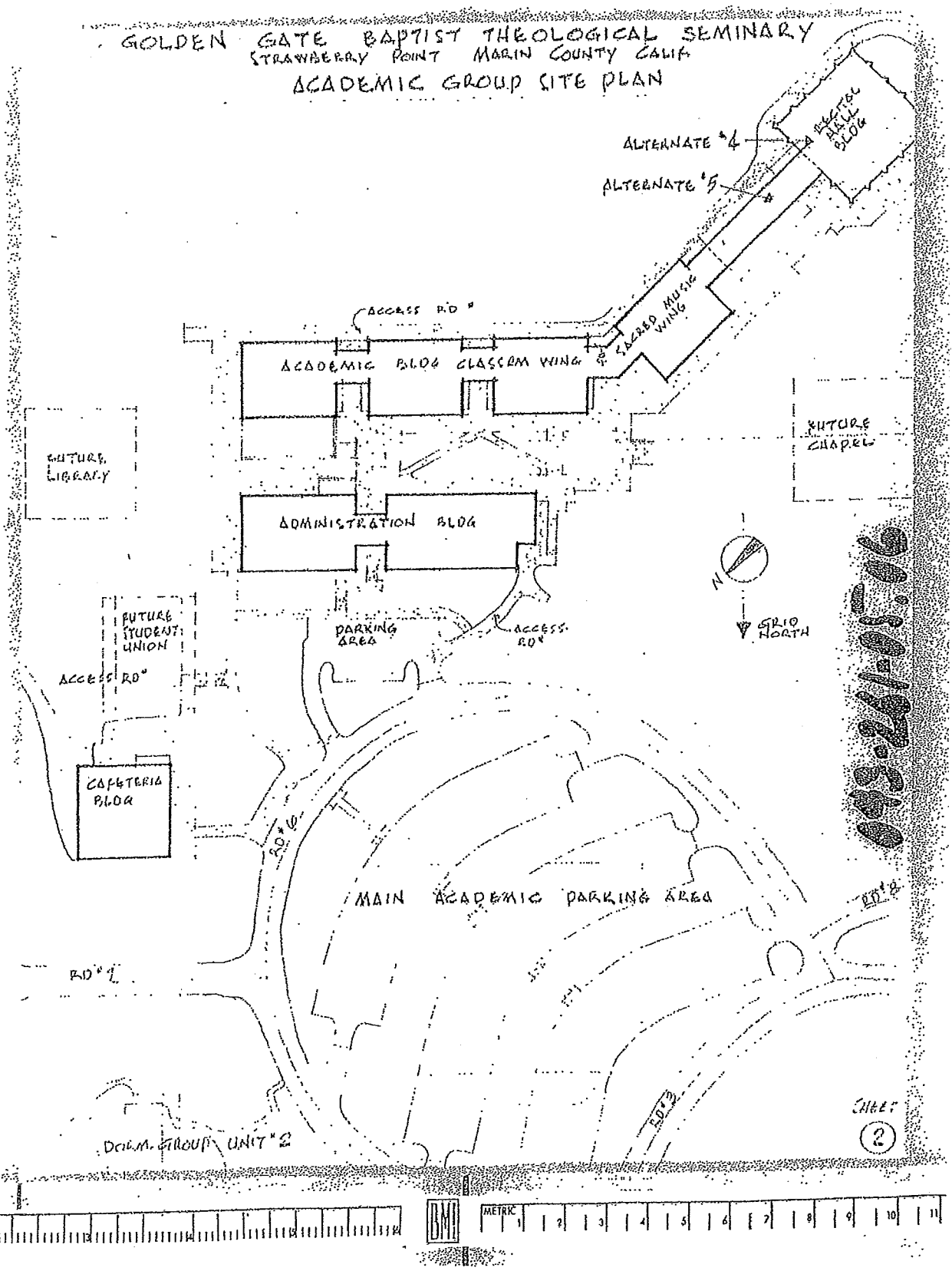
STRAWBERRY POINT MARIN COUNTY CALIF.

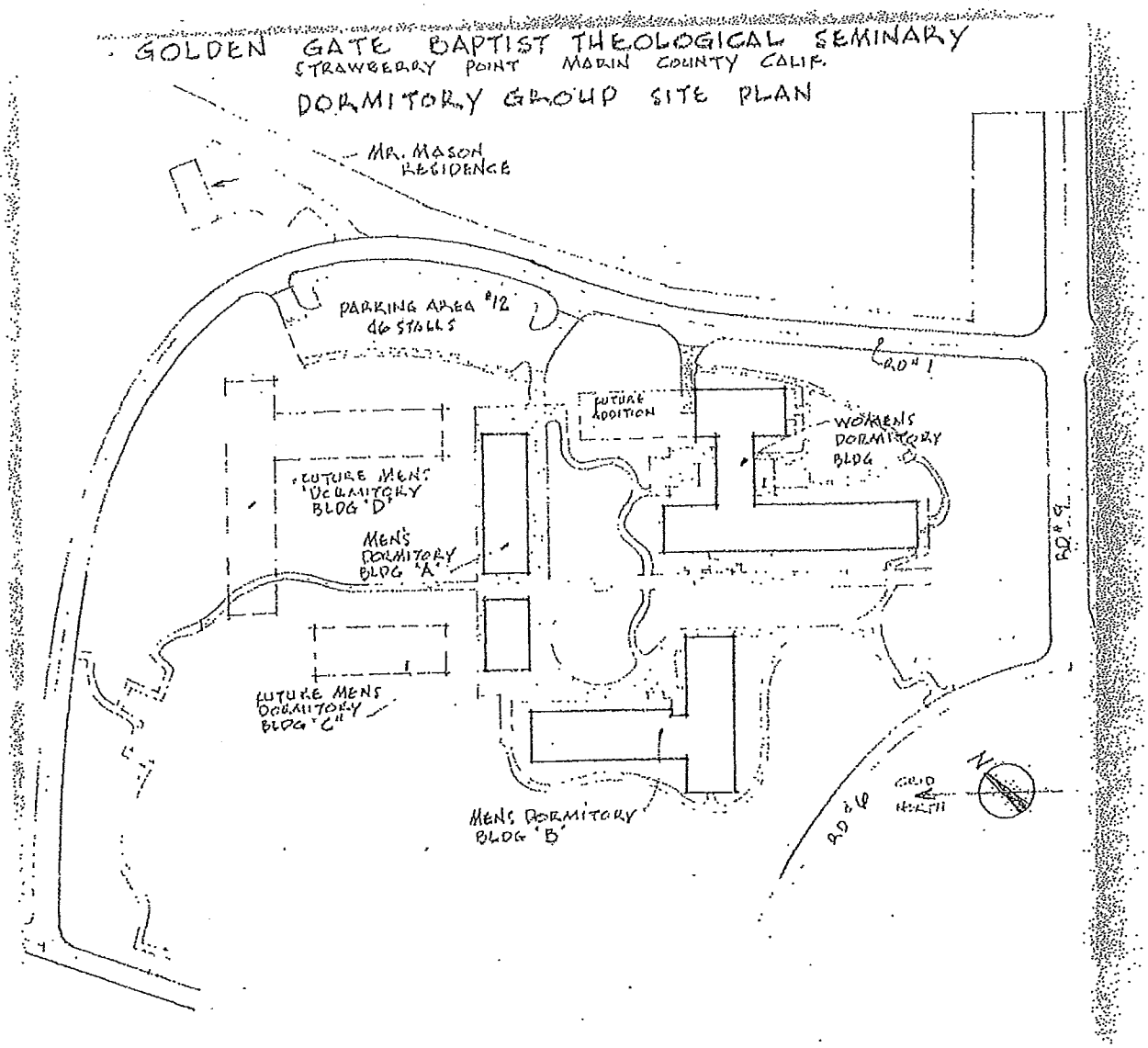
AREA LOCATION MAP



043-201-05,06

SHEET 1


GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
STRAWBERRY POINT MARIN COUNTY CALIF.
ACADEMIC GROUP SITE PLAN
ALTERNATE #4
ALTERNATE #5
ACCESS RD #
ACADEMIC BLDG CLASSRM WING
SACRED MUSIC WING
FUTURE LIBRARY
ADMINISTRATION BLDG
FUTURE CHAPEL
FUTURE STUDENT UNION
ACCESS RD #
PARKING AREA
ACCESS RD #
CAFETERIA BLDG
RD #1
RD #2
RD #3
RD #4
MAIN ACADEMIC PARKING AREA
DORM. GROUP UNIT #2
N
GRID NORTH
SHEET
2
METRIC



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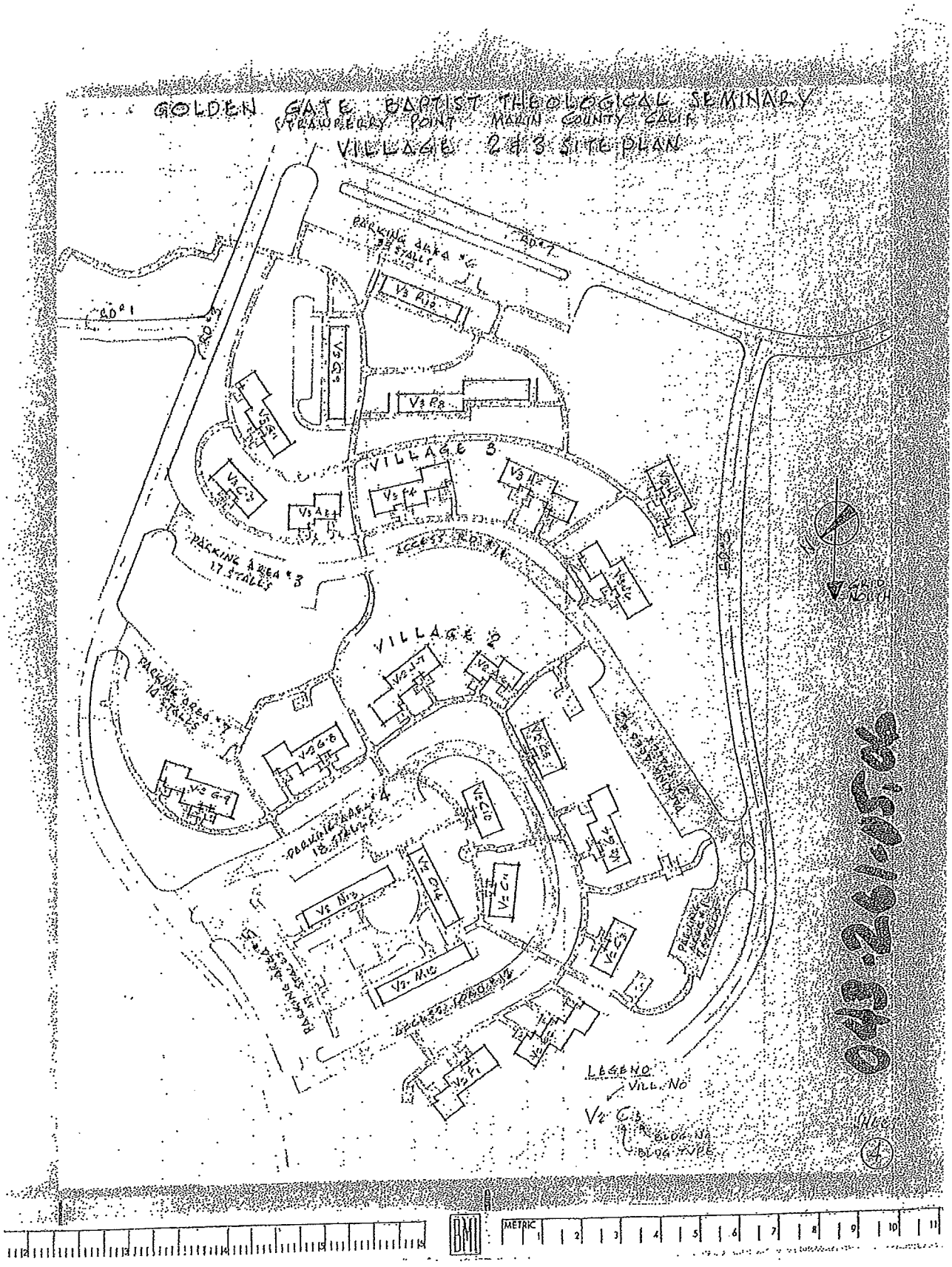
SHEET 3


GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
STRAWBERRY POINT MARIN COUNTY CALIF.
VILLAGE 2 & 3 SITE PLAN
VILLAGE 3
VILLAGE 2
ACCESS RD. #1
ACCESS RD. #2
PARKING AREA #1 35 STALLS
PARKING AREA #2 17 STALLS
PARKING AREA #3 10 STALLS
PARKING AREA #4 18 STALLS
PARKING AREA #5 15 STALLS
PARKING AREA #6 15 STALLS
LEGEND
VILL. NO
BLDG. NO
BLDG. TYPE
METRIC

October 6, 1953

Board of Supervisors
Court House
San Rafael, California

Honorable Board of Supervisors:

It is understood that you have agreed to consider the application of Edward A. Landel for a Use Permit to permit the construction of a Theological Seminary and dormitories and other buildings incidental to such use on certain real property generally described as approximately 130 acres more or less, lying adjacent to and south of Strawberry Manor Subdivision Four, where Ricardson Drive intersects with Reed Boulevard, Marin County, California.

The Commission heard this application at their meeting last evening. They received two (2) communications in writing thereon, one to the effect that they were not in favor of the granting of this application until some plan is submitted showing some access roads, the other opposing thereto.

At the meeting there was considerable discussion which brought out the following general facts:

1. The 130 acres will be developed in general, as shown on the plan for land use, in such a manner so as to make a self-contained unit, with major residential streets of the Strawberry Point neighborhood going by the development rather than through it.

2. A buffer of recreational open land of varying width will surround the entire holding, and adequate lands will be available for recreation of the studentbody and the parking of automobiles.

3. The studentbody will consists of around 1,000 students, about 60% of these students will be married and the seminary will provide apartments on their land for these students, and a pre-school nursery for the children of these families. Dormitories will be provided for the unmarried students.

4. It was brought out by those in favor that a college community, particularly of a post-graduate nature,

was an asset to a neighborhood and that its general effect was to increase surrounding property values.

5. It was also brought out that the seminary will of necessity have to contract with local districts in order to secure service and that in so doing, they would be paying their way for their fair share of the expenses of the local service districts.

6. It was felt that to ensure a well coordinated plan, the County should review a development plan which would show the location of buildings proposed for construction and uses of land.

Upon a motion by Commissioner Marsh, seconded by Commissioner Upton, the Commission unanimously resolved to recommend to your Board, the approval and confirmation of its decision to grant a Use Permit to Edward D. Landel as above set forth, subject to the condition that prior to any construction or improvement, the applicant shall secure the approval of the Marin County Planning Commission of a development plan as provided under Section 11.23, paragraph (f), Ordinance No. 264, as amended.

Respectfully submitted,

MARY R. SUMMERS
PLANNING DIRECTOR

MRS:jm

OFFICE OF THE COUNTY CLERK

MARIN COUNTY BOARD OF SUPERVISORS

SAN RAFAEL, CALIFORNIA

DATE OCTOBER 7, 1953

TO: PLANNING COMMISSION

EXCERPT FROM MINUTES, MEETING HELD OCTOBER 6TH , 1953

RE: APPLICATION FOR USE PERMIT - EDWARD D. LANDEL

The Planning Director addressed the Board in favor of granting a Use Permit to pe mit the construction of a Theological Seminary and dormitories on approximately 130 acres of real property, lying adjacent to and south of Strawberry Manor Subdivision Four. Dr. Graves, President of the Seminary now located in Berkeley, addresed the Board, and on motion of Supervisor Schultz, seconded by Supervisor Kehoe, the Board concurred in the recommendation of the Planning Commission to grant a Use Permit to Edward D. Landel, subject to the condition that prior to any construction or improvement, the applicant shall secure the approval of the Marin County Planning Commission.

AYES: ALL

NOES: NONE

ABSENT: NONE

ATTEST: GEO. S. JONES
CLERK

RECEIVED
MARIN COUNTY
PLANNING COMMISSION
DATE OCT 8 1953

Compilation of Minutes and Staff Report
Re: Golden Gate Baptist Seminary Use Permit - Strawberry

STAFF REPORT - October 5, 1953

APPLICATION FOR USE PERMIT - Edward D. Landels

For the construction of a Theological Seminary and dormitories and other buildings incidental to such use on property containing approximately 130 acres lying adjacent to and south of Strawberry Manor Subdivision Four, where Richardson Drive intersects with Reed Boulevard, Marin County.

The staff can see no objection to the granting of this Use Permit. This use of land should fit in very well with the residential area and be an asset both to Strawberry and to the County. Preliminary plans indicate that they will be a self contained unit and any grant of adjustment should contain a requirement that a complete development plan be submitted prior to the beginning of any construction on the same.

This proposed use of land is shown on the amended master plan of the Strawberry Neighborhood, and the applicant states that all improvements will be made pursuant to a development plan to be submitted to the County for approval as is permitted under the zoning ordinance if a master plan has been approved.

MINUTES - October 5, 1953

The Commission considered the application of Edward D. Landels for a Use Permit for the construction of a Theological Seminary and dormitories and other buildings incidental to such use on property containing approximately 130 acres lying adjacent to and south of Strawberry Manor Subdivision Four, where Richardson Drive intersects with Reed Boulevard.

Mrs. Summers read two communications objecting to the Use Permit.

Mr. Hammond, representing the property owners, addressed the Planning Commission and stated that Mr. Warnecke will be the architect. Mr. Hammond then introduced Mr. Livingston who is the Land Planner working in Mr. Warnecke's office.

Mr. Livingston stated that Dr. Harold Graves, President of the Golden Gate Baptist Theological Seminary, is present tonight. Mr. Livingston then submitted a revised land use and traffic plan for the contemplated Seminary. He stated that this was separate from the application by Mr. Neider. Mr. Livingston further stated that the impact of a development of this kind is known to the people of Marin with the present San Francisco Theological Seminary in San Anselmo. He further stated that approximately $10,000,000 will be spent to improve this property. He pointed out that 130 acres will be developed in general, as shown by the plan for land use, in such a manner so as to make a self-contained unit, with major residential streets of the Strawberry Point neighborhood going by the development rather than through it.

He stated that a buffer of recreational open land of varying width will surround the entire holding, and adequate lands will be available for recreation of the student body and the parking of automobiles.

Mr. Livingston also stated that the student body will consist of around 1,000 students, 60% of these students will be married and the Seminary will provide apartments on their land for these students, and a pre-school nursery for the children of these families. Dormitories will be provided for the unmarried students.

Mr. Hillman, a nearby property owner, questioned the method by which the Seminary would obtain public services since they are not taxable.

Mr. Hammond stated that they must enter into contracts with the local service district.

Dr. Graves stated that they had already contacted the sewer district and water district in this respect. Dr. Graves further stated that the largest building will be an 8 or 12 unit apartment and that no buildings including dormitories will be over two stories.

He pointed out that 90% of the students will be college graduates and that the building will be done on the knolls first with actual construction in two or three years, and students in four years.

Mr. Kaufman, a property owner, stated that he had talked with a number of people in the area and that none were against the use permit. He stated that nothing could be more beneficial. He said that it would be attractive, and everyone knows the benefits of a college town and this would actually be post graduate school.

Mr. Johnson expressed his desire to have the school established and stated that it would raise the surrounding property values.

Commissioner Marsh, therefore, moved, seconded by Commissioner Upton and carried by a unanimous roll call vote, that the Commission recommend to the Board of Supervisors the approval and confirmation of its decision to grant a Use Permit to Edward D. Landels as above set forth, subject to the condition that prior to any construction or improvement, the applicant shall secure the approval of the Marin County Planning Commission of a development plan as provided under Section 11.23, paragraph (f), Ordinance No. 264, as amended.

Mrs. Summers stated that the applicant would like this matter to go before the Board of Supervisors tomorrow. The Chairman announced that this matter would be before the Board of Supervisors on October 6, 1953, at 11:00 A.M., in the Supervisors' Chambers, Court House, San Rafael.

STAFF REPORT - May 24, 1954

RECONSIDERATION - Baptist Seminary Road System

The planning consultants for the Baptist Seminary, planned for Strawberry, have asked the staff to review their preliminary plans as they relate to circulation within and around the Seminary.

In reviewing the same, we determined that the planners had designed a major residential street which was to cross from the East to the West across the point of Strawberry and which was shown on the Streets and Highways Plan for the Strawberry Point Neighborhood in such a manner as to discourage its use as a major street.

We advised the planners that they should review this circulation system, since it was in conflict with the Streets and Highways Plan, with the Commission before their master plan was so fixed as to make it difficult to comply with the Streets and Highways Plan for Strawberry Point should the Commission, in the future, require the same when the plans are finally submitted for approval.

The staff recommends compliance with the adopted Streets and Highways Plan, both in the alignment of this major street and in requiring its improvement with a minimum surfacing of 40 feet.

MINUTES - May 24, 1954 - BAPTIST SEMINARY ROAD SYSTEM RECONSIDERATION APPROVED

Mrs. Summers stated that the planning consultants for the Baptist Seminary, planned for Strawberry, have asked the staff to review their preliminary plans as they relate to circulation within and around the Seminary.

She further stated that in reviewing the same, the staff determined

that the planners had designed a major residential street which was to cross from the East to the West across the point of Strawberry and which was shown on the Streets and Highways Plan for the Strawberry Point Neighborhood in such a manner as to discourage its use as a major street.

She went on to say that the planners were advised that they should review this circulation system, since it was in conflict with the Streets and Highways Plan, with the Commission before their master plan was so fixed as to make it difficult to comply with the Streets and Highways Plan of Strawberry Point should the Commission, in the future, require the same when the plans are finally submitted for approval.

Mr. Lawrence Livingston, planning consultant from the firm of John Carl Warnecke Architects, introduced himself to the Commission and posted two maps of the Strawberry Point area and presented a large model of the same area on which the proposed road system for the Baptist Seminary Campus and the remaining residential area of Strawberry Point was outlined.

He pointed out the three principal entrances to the campus and stated that the principal reason for their request for a change in road alignment was to allow through circulation through the campus from west to east, but to discourage the use of this route for fast, through-traffic in order to preserve the quiet, residential-like area, and to make the campus safer for the children of the students who would live there.

He pointed out further that the differences between the accepted master plan and this proposal are two:

1. That the alignment of the principal road around Strawberry Point should for reasons of economy as well as preservation of scenic route, and in order not to split up a small portion of the campus, go around a small peninsula which projects into the water instead of following the original route, which would take it over a camel-back highway of a steep grade.

2. That the road connecting the east and west entrances of the Seminary are still proposed to connect all the way through, but by a much more circuitous route, which would discourage traffic through the campus.

He stated that staff had measured the distance and driving time on both proposed routes from the east gate to the west gate of the campus, that the difference in distance was approximately one mile and that the difference in driving time would be approximately three minutes.

In answer to a question by Commissioner Upton as to other means of discouraging traffic, Mr. Livingston stated that the right of way could be made narrower in addition to being circuitous, stop signs could be placed on the street, and a gate or gates could be installed at the campus entrances.

Mrs. Summers stated that the staff's understanding had previously been that the road across the campus connecting the east and west sides thereof was desirable for the convenience of the residents of the east side of the Strawberry peninsula.

Mr. Hammond said that from a residential standpoint, he could see no objection to a round-about route, and that it would be bad planning to cut through such a campus. He added, that there are not enough residential lots on the east side of Strawberry to make a difference, and said that the requested change in the master plan was in order. In addition, he stated, there should be no need for parking on the main road around the peninsula.

Commissioner Rasmussen stated that he believed that it would be better to keep the 60-foot right of way (40-foot paving) in the master plan rather than start to cut down the standards at this time, before it is known what future conditions on Strawberry peninsula will require.

Mr. Livingston stated that he believed parking should be kept on the water side in order to make the most out of the scenic view and also to provide for emergencies.

It was Mr. Hammond's opinion that an unpaved shoulder might provide such facilities.

Commissioner Rasmussen asked how many homes would be located on the lower part of Strawberry Point to which Mr. Hammond's reply was about 50 homes.

Commissioner Rasmussen stated his opinion that if density is to be great, the road should be paved to give adequate service to these homes.

Mr. Hammond said that the main road would be used for access as well as for a scenic drive.

Mr. Livingston stated that no lots will front on the main road, and that all residences will have access by way of 40-foot roads to the 40 or 50 houses in the village, and that no width less than 60 feet was proposed for the principal road.

Commissioner Rasmussen asked the staff to restate its opinion.

Mrs. Summers remarked that she thought the people would take the shortest route from their homes to work, and that two or three minutes may be very important when one is late to work. People who will live in the area will find the shortest route and probably 50% of them will take the road across the Seminary campus. For this reason, the staff has been recommending good alignment across the campus against a circuitous one.

Mr. Livingston asked the Commission what they thought of the advisability of providing no road at all across the campus, or the feasibility of closed gates to keep out all but emergency traffic, since this is private property.

Commissioner Rasmussen admitted that the areas on the east side of the peninsula do not have much land to build on, and that the areas to the south would take the main road anyway.

Mrs. Summers stated that the Commission still has the right to insist on unobstructed circulation through the Seminary campus, as a part of the use permit grant.

Mr. Livingston said that the master plan requires only minor adjustments, and that the roads are adequate for the density which will exist; and with the main road going south and north, would have very good access to the surrounding acres.

Chairman Von Rotz stated that the road across the campus should be open to the traffic or shouldn't be there at all.

Commissioner Rasmussen said that he liked the idea of not having any through traffic across the campus, but that he still thought a County-standard road (60-foot right of way- 40-foot paving width) should be maintained to allow whatever incidental circulation is necessary.

Mrs. Summers stated that the only thing to be decided at this meeting is the road alignment, and not the right of way and paving widths.

Stating that he thought that the Commission was in agreement that this proposed change was acceptable, Commissioner Rasmussen moved, seconded by Commissioner Upton and unanimously carried by a roll call vote that the Commission approve the alignment as shown on the site plan with respect to alignment of East and West Strawberry Drives, and that the circulation between Gate 1 and Gate 3 be approved as shown on the map, copies of which are to be filed with the staff for inclusion in the Streets and Highways Plan and the Strawberry Master Plan.

STAFF REPORT - June 20, 1955

APPROVAL OF IMPROVEMENT PLANS FOR GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY

Plans have been reviewed only superficially, enough to make certain that they were adequate for presentation to the Commission.

They will be further reviewed over the week-end for recommendations of the Staff.

MINUTES - June 20, 1955

APPROVAL OF IMPROVEMENT PLANS FOR GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY

The Commission considered the improvement plans for the Golden Gate Baptist Theological Seminary.

Mr. Rossi, representing the firm of J.C. Warnecke architect, was present.

Mr. Darnell presented the site plan, which included complete grading plans for the Seminary. He pointed out that the major grading was taking about 20 feet off of the areas for the administration portion of the Seminary and placing this in the parking area, and a sculpturing of the area in order to provide a workable topographical relationship between the buildings and their pedestrian and parking areas.

Mrs. Summers pointed out that the reason the complete plans were before the Commission at this time, was that when the use permit was granted it was required that complete plans be submitted for review in order to make sure that the Seminary fitted in with the overall plan for Strawberry.

Mrs. Summers pointed out that the part in which the general public is most interested is not the Seminary itself and the circulation within it, but that the community circulation is provided for, and she asked when West Strawberry Drive was to be constructed.

Mr. Rossi stated that they would like to postpone it just as long as possible, that it was really up to theCommission and the Director of Public Works when it was to be put in. He further stated that the grading would be done this fall and spring, and that they would be moving into the building in 1958, and one year from now actual construction would begin.

There was considerable discussion as to the County's interest in securing for the Strawberry neighborhood a circulation around and through the Seminary. Specifically that West Strawberry Drive and its connection to East Strawberry Drive, as shown on the site plan, be improved by theSeminary prior to the opening of the university and the connection between Gate 1 and Gate 3 should all be maintained as a roadway up to County standards.

Commissioner Upton moved, seconded by Commissioner Rasmussen that the Commission approve the grading and site plans as submitted subject to the condition that no building permits be issued unless a bond has been posted to assure the construction of West Strawberry Drive and its connection to East Strawberry Drive.

The motion was passed by a unanimous roll call vote.

STAFF REPORT - February 4, 1957

USE PERMIT RECONSIDERATION - Golden Gate Baptist Seminary

In order to permit the construction of buildings without the necessity of constructing West Strawberry Drive around the western periphery of their campus.

It has been generally understood that it is not necessary that West Strawberry Drive from the entry road to the Golden Gate Baptist Seminary to the entry of Harbor Point Unit No. 2 be constructed immediately or even at the time construction starts on the Seminary Buildings, but that a bond be posted to insure its eventual construction. The eventual construction of this drive becomes increasingly important with the increased number of lots in Harbor Point Unit #2, the proposed multiple housing in Harbor Point Unit #1 and the reduced right of way for East Strawberry Drive through Harbor Point #1.

The review of plans of the Golden Gate Baptist Seminary has been on an equal basis to other land developments in that each should share in the construction of facilities of a neighborhood traffic nature as well as exclusively for the use of the parcel being developed. The use permit for the Seminary could not have been granted if it was not concluded that it fitted or would fit into the neighborhood development program.

On June 20, 1956, the Planning Commission approved the grading plans for the Golden Gate Baptist Seminary with the condition that a bond be posted for the construction of West Strawberry Drive before any building permits are issued. It is important that the plan for a continuous road be maintained and the staff recommends that the Commission reaffirm its decision of June 20th to require the posting of a bond for the eventual construction of West Strawberry Drive before any building permits are issued.

MINUTES - February 4, 1957

RECONSIDERATION OF USE PERMIT - Golden Gate Baptist Seminary

The Commission reconsidered the use permit for the Golden Gate Baptist Seminary in order to permit the construction of buildings without the necessity of constructing West Strawberry Drive around the western periphery of their campus.

A communication was read from John F. Glasner as being against any change in the plan for West Strawberry Drive.

Mrs. Summers posted the Strawberry Point Master Plan, explained it and gave the Staff Report as found on pages 4 & 5 of Staff Report of February 4, 1957.

Dr. Graves, president of the Seminary, stated that the reason for the request for this change being so late was that the previous action had taken place in June 1955, and going back further, Mr. Livingston had stated that traffic would be such that the street would be necessary on both sides of the property and that they had agreed that a road should be on that side of the property. He said that the grading plans had been presented in 1955 and approved and that grading has been carried out and completed. He further stated that he received a transmittal slip from the Planning Commission's office stating that they should be interested in the letter from the Department of Public Works. He then quoted from this letter which in brief stated that "no building permits would be issued for any building until improvement plans for West Strawberry Drive were submitted and approved and a sufficient bond had been filed to assure the construction of the street."

Dr. Graves stated the representative who handled the original matter failed to notify the architect's office or him regarding the contingency on this street. He pointed out on a building location plan the buildings and the road in question and stated that the road had little or no relationship to the buildings and he could see no reason for refusing the building permits for the buildings. He further explained that West Strawberry Drive would not be needed until far in the future, and he did not feel that they should have to put in this road before building permits would be issued.

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He continued that they planned to have all of the building under contract by the end of the year, and to be ready for occupancy by 1959.

Commissioner Azevedo asked if the Harbor Point Development was dependent on this road for access.

Mrs. Summers pointed out that it was not.

Mr. Rossi stated that it would be at least two years until the end of the Point is developed. He stated that he brought back notes on the meetings on these matters and that there was never any mention of a bond.

Mrs. Summers stated that Mr. Rossi should remember the "hot" argument between herself, Mr. Rowland Darnell and Mr. Rossi as to whether or not the road should go in.

Chairman Rasmussen asked if it was customary to give a set of the stipulations or conditions on a use permit when it was granted to the applicant.

He was answered in the affirmative.

Chairman Rasmussen then stated that apparently Dr. Graves and Mr. Rossi were completely unaware of the conditions in this case, and it should be a practice in all cases where applications were granted conditionally.

Commissioner Upton stated that the Minutes were public and it might be well to send copies of same to the applicants.

Commissioner Schultz stated that he felt that all the conditions should be put on different copies and sent to the applicant.

Commissioner Azevedo stated that it might be wise to handle the stipulations on a copy to the applicant even though it is a matter of approval of plans and not a use permit. She then asked Dr. Graves if his objection was to the putting in of the road or to the road itself.

Dr. Graves stated both, and that it is a very serious matter in dollars and cents.

Chairman Rasmussen stated that he felt the road was definitely the responsibility of the Church organization, since they will eventually be using the road for their own development.

Commissioner Schultz brought out that in a subdivision the subdivider was not required to put in road improvements beyond the need of that particular subdivision.

Commissioner Azevedo asked if the road was not built for 10 or 15 years would Mr. Neider be able to have access to his development on the Point without detriment to the community.

Mrs. Summers pointed out the route on East Strawberry Drive, that would be taken in order to get out to the highway from the Point.

Commissioner Azevedo, after assurance by Dr. Graves that two weeks delay would cause no difficulty, stated that she did not feel that she was ready to vote on this matter as yet, and would like to have it continued for time for more specific study, and therefore, moved that this matter be continued until the meeting of February 18, 1957, at 10:00 A.M.

The motion was seconded by Commissioner Schultz and passed by a unanimous roll call vote.

STAFF REPORT - February 18, 1957

USE PERMIT RECONSIDERATION - Golden Gate Baptist Seminary
Continued

The Staff has presented a report at the previous meeting as contained in the Staff Report of February 4, 1957.

The Commission continued this matter at the request of Commissioner Azevedo who wished time for further thought and specific study on the problems involved.

MINUTES - February 18, 1957

USE PERMIT RECONSIDERATION - Golden Gate Baptist Seminary
Continued

The Commission again considered the use permit for the Golden Gate Baptist Seminary in order to permit the construction of buildings without the necessity of constructing West Strawberry Drive around the western periphery of their campus.

For report and recommendations as given by Mrs. Summers, see Staff Report of February 18, 1957, at page 4.

Mrs. Summers posted the location plan of the Seminary and explained same.

Commissioner Azevedo stated that when looking over these plans it had occurred to her that the Seminary has made a choice to run the public traffic around instead of through the Seminary, and in so doing has eliminated the immediate need and means of constructing the road. Even so, the Seminary still has an obligation to the public to provide for a circulation road.

She further wondered if, considering the cost, the Seminary has considered a shorter route.

Dr. Graves stated that a shorter route would be impossible because of the slope, which would be too steep.

Commissioner Schultz pointed out that the round-about road is useless to the Seminary and asked if that road could be relocated so that it could avoid the bluff.

Commissioner Upton asked about the ownership of the tidelands adjoining the bluff.

Commissioner Azevedo pointed out that if the Commission considered this road as not being entirely the responsibility of the Seminary, it would in effect establish a new policy, and she wanted to know just what implications this would have in the future, how often it would arise, etc.

Dr. Graves stated that the Seminary is willing to dedicate all the land necessary for this road to the County right now. He felt that the condition which required the Seminary to improve the road was at variance with policy, because the road is of no use to the Seminary.

Commissioner Schultz asked, if it would be a reasonable condition if the Commission requires dedication of the road and that the Seminary join in the construction of the road at such time as the adjoining lands (The Coleman Estate) are developed.

Dr. Graves stated that when it becomes necessary for this road to be improved the Seminary would be willing to pay its share.

Commissioner Schultz stated that he felt that the road from the entrance to the point would not be benefiting the Seminary, except two villages, but would be benefiting the Coleman Estate property and it would be unfair to require the Seminary to improve a road which would only be of benefit to the neighborhood.

Mrs. Summers suggested continuing the use permit, and let the engineers figure out an assessment district, such as, say 60% being Seminary, 40% others, etc.

Commissioner Schultz stated that it would be hard to estimate the value to the different parties concerned, and that the general public would also be an interested party.

Commissioner Azevedo asked what engineers would be determining the fair shares.

Mrs. Summers answered that it would be the Department of Public Works. She continued that since the Seminary did not feel that it was their whole responsibility, then it must be determined who would share the responsibility.

Commissioner Schultz said that if the Seminary is willing to dedicate the land for the route, and enter into an agreement to share the development of the road at some future date, then the use permit should be in order.

Mrs. Summers stated that the only way she knew that this could be assured would be by either construction or bond.

Commissioner Schultz asked if the interior roads would be open to the public.

Dr. Graves answered yes, although they are not built to county standards.

Commissioner Schultz then moved that the approval of the improvement or development plans on June 20, 1955, as required by the Use Permit as issued, be amended to add thereto the following: "except that the right of way for the road around the point from Gate 3 to Gate 2, as shown on the approved site plan, be dedicated as soon as it can be described, and that at such time as adjoining property owners are ready to proceed with the development of the road the Seminary shall share the cost of road construction according to the benefits to be derived therefrom."

The motion was seconded by Commissioner Scott.

Commissioner Azevedo stated that she felt the use permit should be amended to permit the sharing of the final cost of the road, but that she was not ready to drop the idea of the bond, since that is a sure way to guarantee construction.

Dr. Graves asked wouldn't the assets of a five million dollar development and the integrity of the institution be enough.

Commissioner Schultz stated that a condition of a Use Permit is either valid and enforceable or else the Commission is not in a position to require it.

Commissioner Upton felt that the Seminary had the responsibility of building that road, but he did agree with Commissioner Schultz that the responsibility is not entirely that of the Seminary, nor due at this partiuclar time, and he did not feel that the building program should be held up.

The motion was passed by the following roll call vote, to-wit:

AYES: Commissioners; Upton, Scott, Schultz, Ludy, Rasmussen
NOES: Commissioners; Azevedo
ABSENT: Commissioners; None

STAFF REPORT - July 29, 1957

NONE

MINUTES - July 29, 1957.

APPLICATION FOR ARCHITECTURAL SUPERVISION - Golden Gate Baptist Theological Seminary 10.453

Mr. Darnell explained that this matter was erroneously listed on the agenda as a matter for architectural supervision; when, it should have been listed as the reconsideration of the original use permit conditions.

Mr. Darnell gave a report to the Commission and reviewed the original permit conditions, pointing out that these conditions had been amended at a later date to permit West Strawberry Drive between Gates 2 & 3 to be dropped from the original condition requiring dedication and improvement as a major residential street. He said that in the past week a building permit application has come in for a residence at a location on which previously a garage had been approved; and staff refused to sign the building permit because the building construction was not in accordance with plans as submitted and approved.

Bryan McCarthy appeared on behalf of Sam Neider and Harbor Estates, asking the Commission for a reconsideration of their action to drop the requirement for bonding the road between Gates 2 & 3. He reviewed the Streets and Highways Plan, which required circulation around the Strawberry Peninsula and through the property now held by the Golden Gate Baptist Theological Seminary.

Mr. McCarthy pointed out the fact that there would be 100 homes plus some multiple, and the fact that East Strawberry is quite well built-up; therefore, he said the Marin Land Company, whose interest he felt was identical with the County of Marin, has an interest between Ricardo Road and Gate 3. It is important, also, because this road is going to lead in and be one of the main access roads to Harbor Point. He said it is likely that the Board should stick with the 86-foot street as shown on the Master Plan, in his opinion; but it would be silly to require this up to Gate 3 and no access beyond it, and that, in this opinion, is where the matter stands right now.

Mr. McCarthy reviewed the necessity for circulation around Strawberry Peninsula. However, he said, in 1955 when the first real plans of the Seminary were brought before the Planning Commission, the Seminary requested an exception from the Master Plan, and asked that rather than a road straight through their grounds, which would have an adverse effect on their administration, that the road go around the edge of the Seminary property, ultimately connecting with the circulation system originally proposed. At that time, he said, the Commission accepted that proposal, as it did in fact keep the circulation although it did increase its length.

Mr. McCarthy continued, that at one point in the consideration this road around the point became a road at water level; and that is probably all right. But the hitch is that some of the tide lots across which this road will cross are owned by other parties. He stated that an off-hand opinion is that the road can be placed where it was originally, where the Seminary had it in 1955, a distance up from the water level, which would mean that the road could be contained entirely within Seminary lands. He felt that the Seminary should face this road problem now, and not in the future. He felt that if the Commission lets go of some of the rights they have to enforce their requirements they will never have them. He then asked the Commission to reconsider the road at this time with possible referral to the Planning staff to make a report on the road and its possible future and the possibility that the road be constructed on Seminary lands, as being their problem.

Commissioner Schultz pointed out at the February meeting there was a substantial showing by the Seminary that this was a through road for the benefit of parties in addition to the Seminary.

Mr. McCarthy stated that although this matter started in 1954, it was not until the February meeting in 1957 that the Seminary indicated they were not interested in putting in this road.

Dr. Graves reiterated the reason they had waited until June 1956 meeting was that they did not have knowledge of the action. He further stated that there was no drawing made by the architect which shows such a road on the Seminary plan. He said that there is a plan which was brought out some several years ago which did show some greenery outside that road.

Dr. Graves pointed out that Lots 313 and 314 belong to the Coleman Estate, and bordered the Seminary lands around to the point where Lots 315 & 316 begin which are owned by the Seminary. He said that they are in agreement to make a study to see if the road can be brought inland. The existing road proposed for Seminary use will not meet the County standards, however.

Chairman Upton felt that there were two considerations which should be made; one involving an engineering study to determine a feasibility of the road in question and the other the problem of whether or not the point should be maintained as it is to preserve its natural beauty. He felt that perhaps, even though it would require extra work by the Department of Public Works they should be asked to make a feasibility study of the road being brought inland.

Mr. McCarthy mentioned a site plan dated 1955, that he remembered as having a road around the interior.

Dr. Graves stated in the February meeting that he thought that the Commission was aware of theSeminary's good faith in indicating that they felt that the road was desirable and would be willing to sit with any group to determine the location and the possible development of such a road.

Mr. McCarthy stated that they are not opposing the granting of the application for the residential property now being considered, but felt that the major construction should not be commenced until such time as the road is worked out.

Commissioner Azevedo related her impression of the Commission's action. Two questions she posed: Is there a deadline on the solving of this problem; and if there is, should the question of the deadline be reopened. She then asked if it would be in order to ask that the staff work with the Seminary and Marin Land Company to study the possibility of another route.

Mrs. Summers suggested that the Department of Public Works be included as being the engineering section of the County government.

Dr. Graves stated that the Seminary has never disagreed with the fact that a road should go through, although they have denied that it was their total responsibility.

Chairman Upton reiterated in answer to Mrs. Summers' question that the staff is being directed to instigate a study with the Marin Land Company, The Seminary, and the Department of Public Works to determine where the road should go.

Commissioner Azevedo then moved that the staff be directed to get the principals together and to recommend where the road should go-- the various alternatives --, and one of the considerations should be the ownerships involved.

Commissioner Schultz felt that the County should not do the engineering, but make a minimum study as indicated by the foregoing discussion. He then seconded the motion, which was passed by a unanimous roll call vote.

Mr. Dobbs stated he felt that the dedication of this road around the point, as set forth in the previous action, must also be accomplished prior to the granting of permits.

It was pointed out that if they had a contrary thought it should be specifically spelled out at this time.

Mrs. Brown stated that many of the roads are completed and have gravel over them.

Chairman Upton felt that if the feasibility study showed the road on the lands of the Seminary it would be the responsibility of the Seminary.

Commissioner Schultz took issue and he felt that regardless of where the road goes, it is a through road and the costs should be more in proportion to the use of the road.

Mr. Hayes related the situation to the case where verbal agreements were made with the Terra Linda Corporation, and the resulting sales and changes of property places the requirements on people who were not in the original action.

Commissioner Schultz moved that the original Use Permit condition be amended, that the residence shown on the plans and discussed at this meeting be permitted, and that construction of said residence be permitted prior to the bond being placed on the construction of West Strawberry Drive and the construction of the road around the point.

Commissioner Azevedo seconded the motion.

Commissioner Scott brought out the point that it was his impression that they were not going to hold up the construction of the Seminary for the ironing out of the proper location of the road around the point.

Commissioner Scott said that he didn't agree with Mr. Dobbs' interpretation.

Commissioner Schultz stated that they have neither agreed nor disagreed.

The motion was passed by a unanimous roll call vote.

STAFF REPORT - October 14, 1957

RECONSIDERATION - Golden Gate Baptist Seminary

Reconsideration of Use Permit Conditions.

At the request of one of the interested parties to this problem of Strawberry Drive with relation to theSeminary, Dr. Graves has consented to the continuation of this hearing until Monday, October 28, 1957, your next meeting.

Dr. Graves has prepared an engineering plan for West Strawberry Drive, which plan has been reviewed and verbally approved by the Director of Public Works. The staff will proceed to cooperate with all the interested parties in the next two weeks in order to present a recommendation to you which is satisfactory to all.

MINUTES - October 14, 1957

Matter continued until the meeting of October 28, 1957

STAFF REPORT - October 28, 1957

RECONSIDERATION OF USE PERMIT - Golden Gate Baptist Seminary
Continued

The question under reconsideration is the location for West Strawberry Drive at the water's edge and the fact that the Seminary does not own all of the right of way along the water's edge and therefore, cannot at this time dedicate same as is required by the Use Permit.

The Seminary has prepared an engineering plan for West Strawberry Drive which has been approved, insofar as alignment is concerned, by the Department of Public Works.

From conferences by Mrs. Summers with the Seminary, attorney for Sam Neider and the Strawberry Recreation District, it has been determined that the three parties are working toward, and have general agreement as to appropriate ways and means to secure, by eminent domain or otherwise, the required 'missing-link' to West Strawberry Drive.

It is recommended that the Use Permit condition requiring dedication of an approved right of way for West Strawberry Drive be amended, in order to provide that the Seminary must dedicate all of West Strawberry Drive, which they own, as shown on the approved plan, except for a reserve strip which would prohibit access to the 'missing-link' such reserve strip to be dedicated when the 'missing-link' is dedicated to the County, and should it be impossible to secrue the 'missing-link' for dedication to the County, then the Use Permit should be submitted for reconsideration in order to provide for alternate routing for West Strawberry Drive through the Seminary properties.

MINUTES - October 28, 1957

RECONSIDERATION OF DEVELOPMENT PLAN - Golden Gate Baptist Seminary
Continued CONTKNUED

The Commission again considered the development plan of the Baptist Seminary.

For report and recommendations as given by Mrs. Summers, see Staff Report of October 28, 1957, pages 14 & 15.

Mrs. Summers explained that the original use permit was granted subject to the condition that the applicant secure the approval of the Planning Commission of a development plan which would be similar to a development plan as provided for under the Planned Community District, prior to any construction or improvement.

Subsequently the Seminary had approved a grading and site plan "subject to the condition that no building permit be issued unless a bond has been posted to assure the construction of W. Strawberry Drive and its connection to E. Strawberry Drive;"

Subsequently this condition was amended to add the following thereto: "except that the right of way for the road around the point from Gate 3 to Gate 2, as shown on the approved site plan, be dedicated as soon as it can be described, and that at such time as adjoining property owners are ready to proceed with the development of the road the Seminary shall share the cost of road construction according to the benefits to be derived therefrom."

Mrs. Summers explained that the Seminary had submitted a new plan showing a new alignment for W. Strawberry Drive which lay along the shoreline. These plans had been reviewed by the Director of Public Works who submitted a letter of recommendation thereon. Said letter was then read.

Dr. Harold Graves, President of the Seminary, stated that they were prepared to state they would dedicate to the County all of W. Strawberry Drive, as now planned, which they now own, and that the Seminary was now attempting to acquire additional tide lands which would make it possible for them to dedicate all of W. Strawberry Drive.

Bryan McCarthy, Attorney representing Sam Neider, brought out his opinion that the Seminary was still held, by the Commission's previous action, to posting a bond for whatever was considered the Seminary's share of W. Strawberry Drive construction.

Dr. Graves felt that the amendment to the original condition of approval of the grading the site plans relieved the Seminary of this requirement as did Commissioners Schultz and Scott.

Mr. McCarthy also suggested that until the dedication of the entire Drive was provided for the Commission to keep some control over the building program, only permitting the Seminary to do a portion of their construction at this time.

Dr. Graves pointed out that they were right now ready to build.

Commissioner Azevedo asked if this matter was continued until November 18, 1957 would it hold up the bids.

Chairman Upton suggested that we find out from Leland Jordan whether the bond is still required.

Mr. McCarthy said that if they were to argue on the basis of whether the bond was dropped or not it would call for much more extensive arguments.

Dr. Graves said that he could not possibly be here on November 18th. He cited his own confusion as to who was responsible in terms of the bond. He pointed out that the academic portion of the overall plan was to be bid on the 27th.

Commissioner Schultz moved that this matter be continued until December 2, 1957, so that an interpretation can be secured from the County Counsel as to the best procedure to follow to assure dedication of W. Strawberry Drive and as to whether or not under existing actions of the Commission a bond was required of the Seminary for their share of the construction of W. Strawberry Drive, but that the Commission at this time approve of the issuance of building permits for buildings within the area bounded by Roads #6, #8, #4, #2 and #9 as shown on Sheet 1 of 4, "Site Plan for Addition to W. Strawberry Drive," Golden Gate Baptist Theological Seminary as prepared by John Carl Warnecke A.I.A. being Job No. 52-18 G 4.

The motion was seconded by Commissioner Scott and unanimously carried.

Chairman Upton instructed Mrs. Summers to comply with the request of Mr. McCarthy that complete sets of previous Planning Commission minutes be prepared for each Planning Commission member.

RECONSIDERATION OF DEVELOPMENT PLAN - Golden Gate Baptist Seminary
Continued CONTINUED

There were no new communications on this matter. DEC 2 1957

For report and recommendations as given by Mrs. Summers, see Staff Report of December 2, 1957 at pages 5 & 6.

Mrs. Summers read the letter with questions to Mr. Jordan, and stated he had telephoned this morning stating that a bond in his opinion would be required and, the road should be dedicated now and that he would confirm his telephone call by letter.

Mrs. Summers explained she had sent Mr. Jordan an excerpt of the Commission's actual motions. Mr. Jordan felt that he should advise that if the County wishes to assure the setting aside of this area for road use they should, at this time, accept the dedication; that this is the only sure way, otherwise they would have to record an instrument which would call for action in the future. That by accepting the dedication the County is not obligating itself to construct a road upon a dedicated route.

Dr. Graves asked how could they bond for something on a share basis when the exact shares are not known and stated that they are just as willing to dedicate it as they are to promise to dedicate it. He stated further there is no question on the part of the Seminary that they are willing to dedicate.

Chairman Upton felt that the Department of Public Works should determine the share for bonding and submit it to the Board of Supervisors.

Dr. Graves stated that would be very fine, however, bonding it would admit responsibility for the whole road and they are not willing to do that.

Commissioner Azevedo felt that they would not hold the Seminary responsible for the entire road. She then raised the question as to methods of determining the amount of the bond.

Commissioner Schultz said he gathered that the bond would be required when other parties involved were ready to develop.

Dr. Graves expressed the fear that we would be holding them up until a bond was secured from the other parties, who might be responsible for part of the road.

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Commissioner Schultz felt we could not hold the building permits up for the Seminary until guarantee was secured for Mr. Neider that his portion of the road would be built.

Chairman Upton felt that the Commission would have to make some decision to assure that the road would go in.

Commissioner Azevedo asked if we have a method of getting a bond from Mr. Neider.

Commissioner Schultz stated that we have no means whatsoever. The only means for assuring the building of a road in an equitable manner is an improvement or assessment district. He pointed out that the Coleman Estate would also be a party, and that the Strawberry Recreation District might be a successor in interest and would also have to contribute their share, since they would be a beneficiary.

Dr. Graves stated that they have expressed their willingness, their desire to cooperate all along to get everything ironed out, that they are now ready to start to build. He feels that time is of the essence, and they request that approval not be delayed.

Commissioner Azevedo asked if they have explored all other methods of enforcing agreements other than with bonds.

Commissioner Azevedo felt that since other parties are involved it is certainly not her intention to try to make the Seminary wholly responsible for any other parties' interest. She said that was one of the things that has created this problem, the original premise was that the Seminary was responsible for the whole thing, and the road was entirely on Seminary land.

Dr. Graves, in answer to a question by Commissioner Schultz, stated that they would need a building permit within six weeks.

Commissioner Azevedo felt she would like to explore further the question of establishing that this sort of thing can be conditioned to the use permit with a time limit fixed. She felt that she would like to see a time limit fixed, within which time the Seminary would be required to provide its share of the road, and also to explore any other possibilities.

Commissioner Schultz felt it would be wise to look into the possibilities of an assessment district, which might be established at such time as the other parties involved become interested in the development of their property.

Commissioner Azevedo moved that this matter be continued, for the purpose of exploring whether there might be any alternatives to the bond, that would still be a guarantee that the Seminary's portion of the main road would be constructed, until the meeting of December 16, 1957.

Dr. Graves stated that they hope to sign the contract for their housing on January 14th. He pointed out his statement at the last meeting, and still states that they are perfectly willing to any other alignment which might call for the road going over land which they own. He reported that the Strawberry Recreation District might be very close to filing condemnation on the Coleman Estate even by the next meeting, and if that insues then the District will be the landowner involved, but all interests agreed the District would not be responsible for improving the road.

Commissioner Schultz seconded the motion.

Commissioner Scott stated he felt, according to the understanding at this meeting, that if there is no other solution found, that there must be a bond, and he was not ready to concede to that point.

The motion was carried by a unanimous roll call vote. DEC 2 1957

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It was also pointed out that if there is a question as to what share the Seminary is being held responsible for, that any new motion or new action can clarify that.

Dr. Graves pointed out that by private contract Mr. Neider has the entire responsibility of building the road from ~~West Strawberry~~ Rancho Drive ~~Drive~~ to their gate, to be finished about the expected date of occupancy, which is October 1, 1959.

Commissioner Schultz posed a question, that if the construction of the road is a condition of the use permit, and if the road is not constructed can the use permit then be revoked.

The Chairman asked that an answer to that question be secured from the County Counsel.

CORRECTION AND APPROVAL OF MINUTES of December 2, 1957 and Special meeting of September 19, 1957.

Commissioner Azevedo pointed out that on the item "Reconsideration of Development Plan for the Golden Gate Baptist Theological Seminary" page 8 the minutes should show Dr. Graves' statement relating to "...Richardo Drive to their gate..." and not "... West Strawberry Drive to their gate..."

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Commissioner Schultz stated that no vote is recorded on "Application for architectural Supervision - Main Street Properties."

Mr. Dobbs then recommended that the minutes be changed to add, at the end of the Main Street Properties item, on page 30, the following: "Commissioner Cuzner, who seconded the motion, accepted the revision. The motion was then passed by a unanimous roll call vote."

Commissioner Schultz then moved, Commissioner Azevedo seconded and it was unanimously carried that the minutes of December 2, 1957 be approved as above corrected and that the minutes of the special meeting of September 19, 1957 be approved as submitted.

RECONSIDERATION OF DEVELOPMENT PLAN - Golden Gate Baptist Theological Seminary

Continued CONTINUED

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Mrs. Summers reported the County Counsels' opinion that if a consultation of a use permit were not complied with the use permit could be revoked. His impression of what a Court would do, on the basis of whether they would close down the Seminary for non-compliance, was that the Court would probably give the County an injunction against the Seminary, but would not close down the use.

Mrs. Summers also reported on the Commission's request that she confer with Messrs. Brigham and Jordan on ways of assuring road dedication and construction, and if a basis of sharing cost could be arrived at now.

She further stated: " Mr. Landels, attorney for Dr. Graves of the Seminary, proposed an improvement agreement, a copy of which was sent with your staff report. This was reviewed by Mr. Brigham, and Mr. Jordan. I would say this, that their review of this agreement was on the basis, that the Commission in previous actions had already determined (1) that you would not require the Seminary to put a road in at their full expense (2) that you would permit a fair share at a future date. Basically that you wished to have the road dedicated, but that you didn't mind whether or not it was built immediately, but should be in time to serve the area, when a fair share could be established.

" It was on that basis that everyone reviewed this agreement. They did not review it on the basis: Would this require the Seminary to put a road in, as had originally been our proposal to the Commission.

"We have a letter from Mr. Jordan, on this."

Mrs. Summers then read a letter from Leland Jordan, dated December 12, 1957.

Mrs. Summers stated: "Mr. Jordan asked that I clarify, to the Commission this last sentence which reads; ' I believe that the agreement represents the greatest degree of protection which the County can obtain in connection with the construction of this roadway under present circumstances.' It was stated on the basis of presuming that the Commission had already made these decisions for the alternate route, a fair share and construction at a later date. Not that he was recommending this action.

"Have you had sufficient opportunity to study this agreement, or would you prefer that it be read aloud to think it through at this time?"

Chairman Upton felt that it might be a good plan to read the agreement aloud. This was done.

Attorney Landels reported he had met with Mr. Jordan, Mr. Brigham and Mrs. Summers part of one morning, and that they put into the agreement everything requested by them.

Mr. McCarthy, appearing on behalf of Mr. Neider stated that this matter was vital to the people he represents, that two new subdivisions and approximately 100 lots would be tied in to this road, and that it also ties in with residences on East Strawberry Drive. He said that it was very important to the County of Marin.

He referred to the minutes of the recent meeting where the actions on this matter, beginning in 1953 were summarized. He stated that he was not aware of the meetings which led up to these meetings between Messrs. Brigham and Jordan and Mrs. Summers. He said he felt that this agreement was a legal trap, and thought that it was a piece of legal maneuvering. He said that he could boil down the summary of events into four sentences.

Mr. McCarthy then pointed out that originally the Seminary was required ..." to build a road around Strawberry Point, that is to connect to its property, not all the way around, but that it had to connect this

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property off Ricardo Road, which was so-called West Strawberry Drive, it had to connect to East Strawberry Drive on the other side, not off its property but just on its property. That was clear, absolutely as set forth in these minutes; so the first thing they have is an obligation of the developer to put in a road. No questions asked, his obligation.

"The second step, also in these minutes, just as clearly as I am trying topresent to you, never have I ever been backed up by anything as good as these minutes before, when discussing previous actions; secondly, at the request of the Seminary the road moved from, through the Seminary over to the side of the Seminary. Still on their property, its still a road and still their obligation to build the road.

"Now, I am going to get into a discussion in a minute as to whether or not it is proper to have them build the road or whether it isn't, and whether or not your actions are consistent, but this is a record of the proceedings before you.

"First they build a road right through their property; secondly they build a road, but it's over on the side, because that's better for them. I think it was better for everybody concerned that the road be moved over. It wasn't unreasonable for the Seminary to request that moving, but then came the big change, a change in January or February of this year, at which time, there was no one present in opposition of the request of the Seminary's proposal. At that time we were not, I won't say we didn't have notice, but I was not representing the people I am representing at this time, and let's say without opposition. The Planning Commission staff, still showing against it, these minutes verify that. The staff was still against it, but this Commission left the road over at the side, but made one major change, and that major change was, that now the road still had to be there, still on Seminary's property, but now, it's a 'share-the-cost road.'

"The Seminary only has to pay part of the cost, other people, who are going to benefit now have to pay some of the cost. Who are those people? Well, in the minutes they were mentioned as the Coleman Tide Lots, the 'missing-link' in the proposed road. They would be benefitted if there was a road there. The funny part of it is that the Seminary doesn't want the Coleman Tide Lots to have access, but in any event that was the basic change. So you moved from a road built by the Seminary, down to a road built by fair-share.

"You might say 'What's so unfair about sharing the cost.' I'm not going to argue with you on that, except for this: you require it of other developers. I'm not going to argue the ethics of it except as it pertains to this specific agreement. But I am going to show you where you have required it of at least four other developers within the last two years in Marin County.

"What is the culmination of this thing? The culmination to me is in this agreement. If you adopted such a thing as this it wouldn't quite make it 'no obligation, and no road at all' which would be the end of this line; which would make it the full 360°, from a road to no road at all. This document simply requires the Seminary at this time to dedicate a strip of land.

"Notice we keep referring to "Exhibit A" here. Exhibit A is a description as to where this road is to go. Now, what is the matter with Exhibit A and this road? Well, it's three quarters of a road (Mr. McCarthy then pointed to the Tiburon Peninsula Master Plan and showed the proposed road.)

"If this contract or agreement is adopted, you are going to end with a dedicated strip of land, from here to here and then it's going to stop. Then you are goi g to have a strip of land from here to here, and it's going to join in with West Strawberry Drive. You are going to get three quarters of a road, with no assurance that you are ever going

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to get a road. Somebody could say, 'well, that's all right, if the County ever wants it, they can condemn it.' That's true. But how do we know the County wants to condemn the road, and secondly, can the County condemn it and not pay for it? There's always legal problems that come in as to whether or not somebody else has to put up money and force the taking of it. Condemnation is not a simple thing, it is not an easy thing. It sometime takes years, not months. Yet you are asking to take this now in the place of what you had in the beginning; a road through the Seminary and paid for.

"What is the other part of this agreement that all of a sudden is interjected? In my opinion, for the first time, from these minutes which is all I can gauge this thing on, for the first time the Seminary wants to be refunded whatever it has put in into a road-bed.

"Why did it put in the road-bed? Because it was trying all the time to get you to move off its property and down on the water. The more it accomplished this road-bed, the more it would get you on the water line and everybody else. You would say, 'look there is a road about half in. Fine, that's good, we will take it there.' Secondly they had to get rid of fill, I assume. I can't be sure of that, but I know there is fill on the property, and it's not imported fill. So what are you asking them to do in this agreement? You are asking, in my opinion, two mistakes, one fatal one. The fact that they get subtracted the cost of the fill, I don't even think is worth our argument. I think they shouldn't be allowed to subtract it, because they are getting so many benefits by what they are ending up with now, it is inconceivable to me, having appeared before this Commission on many items, on behalf of many developers, to see that they would ever end up with what they are getting away with on this.

"But that's the minor part. You may never be able to overcome the fact that you have lost your right of way through the property, so my conclusion is: insist, at the very least, on the fact that, if this missing piece is not able to be acquired, the Seminary must provide and dedicate an alternate access route through their property.

"That's their obligation. When I say others have been required to do this, I have been advised, that in Marin County and I have seen, at least four or five places where you have required not only someone to dedicate a road, but that they put in the roads.

"I cite first, Marinwood; Miller Creek Road is a four-lane, divided road, it crosses from U. S. 101, opposite the St. Vincent's gate around into Lucas Valley Road. The developer is putting it in, paying for it, and it is obvious that it is not necessarily for the use of Marinwood alone.

"As a second one, I cite Wilson Avenue in Novato. The major circulation route through Novato. I believe that Novak was required to improve and dedicate a 30-foot roadway, and that it was not necessary for his property alone. I believe that the Wheary Housing area in Ignacio there was dedicated a 100-foot right of way, no improvement was required, but the dedication of 100-foot right of way, for a through road, and also a required parking lane on each side, and I believe they had to put that in.

"In Terra Linda there is a street called Del Ganado, which is required to be a four-lane, divided road to Lucas Valley. I believe that the developer was required to put that one in.

"Now to me I don't think that I should have to cite these cases, because in appearing before this Commission over the last many years, I have seen that you have always done it, always required the developers to provide for circulation. Fortunately for you, unfortunately dollar-wise for a developer, the law seems to sanction it. There is a famous Los Angeles case, which sets up this authority. You have the right to require that circulation be taken into consideration when someone comes in to develop a whole area.

"I realize that a Seminary is different from a subdivision. That's why some of the action you have taken has come about, but it's not so unusual that from the start of having to provide a road, they end up with providing three quarters of a road and nothing else. That to me is the last straw. Now this is the last, last straw. That in the proposed agreement they are going to get their fill back. Are they giving, or what have they had to give to the County? You might say absolutely nothing. They have given a strip of land they filled in, they are going to give you some old mud flats. Now we are not giving property away, but treat these prople like you treat everybody else that comes before you.

" If next week a developer comes in, you are going to require that circulation be taken into consideration. If you are willing to abandon from here on out all circulation routes, that's a different story. You haven't abandoned it up to here, and in fact, are still requiring it. Why then do these people get this consideration? And in a key circulation area. You have to get circulation out this way. It so happens that Marin County is interested in getting circulation routes. I feel that this agreement should never under any conditions be entered into.

"Secondly, that no matter what action you take you should require an alternate route.

"Third, I feel that you should never let them get away with deducting an unknown quantity of fill when it's only for their own benefit that they put it there. Never leave a 'missing-link'.

"Now it seems that we have already gotten away from another point, which was mentioned in the October meeting, and that is the requirement of a bond. I believe that it was Mr. Jordan's interpretation that a bond is still required technically. That has never been done away with. I understand that there are several members of this Commission that feel that a bond is unworkable, and shouldn't be required in this case. All I can say in this case is that when the Commission acted in the past it felt that a bond is necessary. That does not mean that you have to continue with it if you don't want to. There has been a proposed substitute in this agreement, and that is that the Seminary withhold sale of 100 acres of property. Maybe that's just as good. I'm not in a position to say.

" Certainly 100 acres of land would be a satisfactory bond without being a bond by a company, and it's possible that just the Seminary alone, and your control of future actions, would be enough of a wedge that they would have to live up to future actions. However, there is something good about a bond, there is something immediate about a bond. It means that people will do it, without litigation and it is worth something. You have an agreement only based on 100 acres of land and somebody's word that they will do it. It usually means that a long legal action will follow. I think that someway you should get some assurance. If you don't like a bond, you don't like it. I'm not going to tell you you should have it, but don't take a deed of property right now, and foreclose an alternate route, if that route cannot be accepted.

" I know that in the October meeting we talked about this 'missing-link' being near accomplishment. It does not appear to be near accomplishment right now. Dr. Graves has said that he was trying to buy it. As far as I know in the past two months he has been unable to buy the tide lots to dedicate the 'missing-link.' If he did, a lot of our argument would disappear. He has not got it, and the Recreation District, who wants it, and has had it under condemnation for some time, has no money to buy it. Therefore, whether they will ever acquire the 'missing-link' is a question.

" I feel that this agreement is absolutely unacceptable to the County in its present form. I think these points I've raised should be given serious consideration.

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Mr. Landels then spoke for Dr. Graves, who was unable to be here. " This presents a very peculiar problem, in that the road serves only the area lying beyond the Seminary, and the fact that it's on a Peninsula. It is a difficult problem because of the small link of the Coleman property which has not been acquired. I want to say this. This agreement was entered into in the utmost good faith. We have met every requirement of your Planning Director, every requirement of the Road Commissioner and every requirement of your County Counsel.

"The Seminary, despite the fact that nothing that's being done in the Seminary makes this road necessary and it won't serve the Seminary for 20 years. Nevertheless the Seminary is willing to agree to put itself in the hands of the County, pay whatever portion of the road they feel is necessary. Further, we agree to do it anytime the County says you need the road. Under the existing circumstances, I don't know what else we can do. In addition to that, we are willing to agree to hold 100 acres as a bond for security. Now that's just as good as a bond. All a bond is, is an agreement with a third party that if you don't do it he will. You get just as much litigation one way as another. The reason you require a bond of a subdivider is that he is in today and gone tomorrow. You want someone else to pay after he's gone or sold his option. Here we have 100 acres of select land which we will hold unencumbered, and there is no question that the County is amply secure.

"This road is not necessary to the Seminary, will not be used by the Seminary and is necessary for only three reasons as the minutes point out: (1) the development of Harbor Point No. One, (2) the ultimate buildings in Harbor Point No. Two and (3) the narrowness of East Strawberry Drive. Those are the three reasons given by these minutes. None of which relate to the Seminary.

"Despite that, in an effort to cooperate with the County in every way the Seminary can, this is no attempt to circumvent anything, this road has been agreed to in the beginning from a scenic standpoint and from an engineering standpoint. We have met your requirements of your County Counsel, your Road Commissioner and the Staff. We agree to pay our share; we agreed not to protest an assessment district, if that's the way to do it. The cost of this 'missing-link' can be included in this assessment district, as Mr. Jordan has advised you. The County can condemn it anytime it wants to. There's no problem there. It's a very small piece, and until it has access, not a very valuable piece.

"It could be feasible for the County to condemn it, include it in an assessment district, and assess the cost against the Seminary and any other property that matters. The Seminary being the one property owner which agreed in writing to pay their share. The one property owner which agrees, come what may, to not protest the road, and come what may, to hold 100 acres of land as security and for assessments to pay its portion and share. What more we can do gentlemen, I don't know. Unless delay the matter until the property can be acquired. We haven't the power of condemnation, the County does.

"Frankly, we resent any suggestion of Mr. McCarthy's that we are attempting to circumvent anything. This hasn't been the attitude of the Seminary in the beginning; and it isn't the attitude of the Seminary now.

"The chief and primary purpose of this road, as everyone sitting here knows, it to provide access to the Point. It is necessary, we know that it is needed, and we are willing to pay our fair share. And I don't feel that this whole development should be held up until the problem of the Coleman strip can be resolved. Anyone knows that the County can get that any time it wants to and needs to.

"Gentlemen, I don't know what more we can do. We have met every requirement the County has set up. To be sure we haven't met Mr. Neider's requirements. He would like us to pay for the whole cost of this road. However, as I see our duty, it is to the County and we feel that we have met the County requirements in full.

"As for legal arguments, it is doubtful under the reasons given for this road, to what extent we can be compelled to improve it. Whether we can or can't is beside the point. We are prepared to do our share. The County can acquire the Coleman property anytime it wants to condemn it."

Mr. McCarthy: "It has been said that this agreement has met the requirements of the County. This is supposed to mean your attorney. I talked this thing over with Mr. Jordan, after he wrote this letter, and he didn't mean by this letter, and Mrs. Summers explained to you to start with, to approve this thing at all as to policy. He was given a certain hypothetical set of facts, in fact, the discussion of an alternate route was not even given to Mr. Jordan to consider, when he gave this opinion.

"Mr. Jordan has made it perfectly clear that this is no recommendation of his, all he is saying, is he was handed a document, and assuming this is the policy of the Commission, the document is all right. That's assuming you find everything that's here. It really hasn't met any requirements of the Counsel as to what should be in it. He says, as for the words on a document, the words are all right. So don't feel that Mr. Jordan has approved this thing. He never even considered an alternate route if you couldn't connect the middle.

"Mr. Landels says very kindly to you; 'What else can we do?' Well, I can tell you one thing they can do. Why can't they reserve for you an alternate route, if this other is not able to be taken? Why? Because he wants to be rid of it, right now. So that never, ever again will there be any possibility of this road moving any place else than where it is. From his standpoint I'd probably do the same thing. He stated that they have never tried to circumvent anything. What they tried to do and what they did, I don't know, but the record shows what has happened. I'm not going to bring motives into it. Look at it yourselves, you have never seen anything so circumvented as this road.

"He also stated that they are the only ones who have agreed in writing to pay their share. As if that was something real good for you to grab. Originally they had to pay the whole road right through their property. Certainly they should be happy, 'We'll put in writing that we will only pay our fair share.' How could anyone not want to pay their fair share of something which is about 10 times less than they were originally obligated to do? Each time down the line, each time less. If you approve this agreement you would have taken the next to last step down the ladder. The next step is no road at all, and this agreement may mean no road at all."

Mrs. Summers: "I would like to state, for the staff in this. You will recall that Mr. Brigham was asked to review these plans as to this specific alternate route, which was offered to your Commission and accepted by you. He said that it was engineeringly feasible, and a good route. Mr. Brigham is not recommending this as your solution. He is notadvising you as to what your action is. My part in this was to attempt to get somewhat near what I thought an aggregate of six different people were thinking. Going from the most restrictive to the least restrictive, and to try to find a happy medium.

"Mr. Brigham can't give you an estimate for a bond at this time without plans, specifications etc. for a road, and therefore, some sort of an agreement seems to be the answer in lieu of a bond. That's what this attempts to do.

" I think I made it clear, that Mr. Jordan never advised the County on policy, only on legal matters to the extent that he will see that what you wish to accomplish is placed in writing.

" I do want to, for the fairness of this to reaffirm what Mr. McCarthy just said, that none of the three advisors have told you that you should have made any of the three motions you made which led to the writing of this agreement. In fact, you will recall that my recommendation was contrarywise.

" I do have one question here that I would like to discuss with Mr. Landels, which I have not discussed with him previously, and in reading this agreement this morning, brings it to me. On page three where it says how the share would be determined. The reasons given for finding this share are related almost entirely to whether or not students and faculty and tenants and people working in the Seminary would use this particular route to come and go from the Seminary.

"In making such a finding; except to the proportionate benefits to land in general they own on the Peninsula as related to all other lands, that any land benefits from good circulation. That one thought is in here. Except for that, it would occur to me that there is a possibility that a very small share of the road would be determined, on the basis of use by the Seminary particularly with this alternate route when it runs around the outside of the Seminary and does not cut through it.

" I cannot help in reading this to refer back to my original recommendation, that as any developer of land is required to do certain improvements for the benefit of the entire area, this should be considered and if this section does not do that then it is incorrect.

"Would you like to comment on that Mr. Landels?"

Mr. Landels: "It was made just about as wide open and broad as human language could make it. To make it on a proportionate use basis to a proportionate basis of respective lands. They could allocate any share they wished under these terms."

Commissioner Azevedo: "I feel that this point that Mrs. Summers has brought out is one I already noticed in reading over that part of the agreement. I would like to review the points Mr. McCarthy made on the minutes. The first objection was that the Commissioners had broken a precedent that we usually use in requiring a developer to provide circulation onto the next development. We did this here because we felt that the Seminary was a different type of developer. That he didn't have a product, as in the case of the developer of lots. That he could sell which would be served by every foot of this road, and so we treated him differently, and that is one of the chief reasons we have gotten where we are.

"It seems to me that part of the answer to this would be, where do we determine the fair share? I think that this developer still does have an obligation to provide circulation, and this makes the Seminary no different than anyone else who will share in the road. He still has a certain obligation. If a fair share is determined only on what use is made of that road by the students living there, it would be very small. Because one of the reasons it was put out there was that the Seminary didn't want a road going through the Seminary property. I think we have to find some other measurement. I don't know how to do it, maybe we have to set an arbitrary percentage."

Commissioner Schultz: "They have it in there, a proportionate benefit to the property owned by the Seminary likely to improve other property located on Strawberry Point....."

Commissioner Azevedo: "The point I'm trying to make is the same one made before, that when the Seminary got the route of this road moved out of the center of its property to the outside, it still didn't, in my opinion, lose its obligation to provide the road."

There was some discussion among the Commissioners as to the interpretation of this particular part of the agreement and as to the intention.

Mr. McCarthy: " I believe in spelling out what you are thinking, and if that's what you are thinking you should spell it out and put it in writing."

Commissioner Azevedo: "I don't know how to put it in quantative terms in determining what is a fair share. However, it is something we could work on. Another point which was brought out was that we allowed the Seminary to substitute an original road alignment that went through only their property, to an alignment which now has a 'missing-link'. I would be ineterested in exploring the possibility of writing a condition into the agreement that they provide an alternate connection through land owned entirely by them. In the event that we can't condemn this other piece.

" The third point here was the point about allowing the grading and filling already done by the Seminary to be included in their share of the cost. I wondered if Mr. Cuzner's suggestion, that it be determined on the basis of its value, rather than what the Seminary actually spent. For one thing, if the road were starting from scratch the grading and filling would be included in the overall estimate, and if we once accept the principle of sharing the cost of the road, then why would we not include everything that has been done?"

Chairman Upton: "Mr. Landels, do I understand that you would be agreeable to providing in this agreement, that if the route is for some reason or other unobtainable, the 'missing-link', that you would provide an alternate route?"

Mr. Landels: "Yes, we discussed that with Mrs. Summers. We are willing to agree that if it is impossible to condemn the 'missing-link' then we will provide an alternate route. However, there is no great problem for the County to condemn it and get it when they want it.

" The County could condemn a strip right across the middle of the Seminary if it wanted to."

Chairman Upton: "It could attempt to 'condemn'."

Mr. McCarthy: "We are not saying that the County can't condemn this road, but there could be many difficulties which would come up, this thing may not actually be able to fit out there in the mud when they really get going on the engineering... The part you are talking about is in tide lands, and it may actually sit out in the water, which may be at high tide 3,4,5 or 6 feet deep. I feel that there should be a reservation here.."

(Here Mr. McCarthy and Mr. Landels are in argument which cannot be heard sufficiently well for transcription)

Mr. McCarthy: "...I think the words should be something like this... If the County finds that it is not feasible, based on findings of the County, then an alternate route shall be provided."

" In other words don't pin yourselves down to condemnation...it was said the other day that someone said 'you can't build a building on that site', and it was answered that 'you can build a building on any site, it is a question of dollars and cents,' and I think there is a lot of truth in that.

Mr. Landels: "From the report of your Road Commissioner it has already been said that it was entirely feasible."

Commissioner Schultz: "Would it be of any assistance if we proposed, say "Exhibit A", it's plotted on a map, and a legal description won't do us any good?"

Mrs. Summers showed the plans of the Seminary and the road to the Commissioners. The Commission discussed things among themselves.

Commissioner Azevedo: " This is the obligation we require of other developers..... do you want to take this wording down?..'if the development of this road is not feasible in the time by which the road is needed, the Seminary shall provide an alternate route on property fully owned by it'."

Chairman Upton: "Who's to decide when the road is needed?

Commissioner Azevedo: "If the County determines the development of this road is not feasible in the time by which the road is needed, then the Seminary shall provide an alternate route on property fully owner by it."

Chairman Upton: "Any other points on this?"

There was some discussion as to criteria to use in determining fair share of costs.

Chairman Upton concluded he thought the agreement needed some going over, and should be continued, and notice be taken of the points which have been brought out, and a new agreement be written, that embodies those points.

Commissioner Azevedo pointed out "...that the Seminary has an additional obligation for a share representing more than its beneficial use. That's the second point. The third point is the question of how much of the actual grading and filling has been put in. That leaves these two points, the first one seems to be pretty well agreed on."

Chairman Upton: "I would think that this agreement could be reworded and the thoughts which have come forth today be so placed, and I would suggest that you deal with Mrs. Summers. If any legal points come up, then have the County Counsel approve the wording etc."

Mr. McCarthy: "I would like to be present when these points are discussed with County Counsel; so that I may advise him on just what I think the Commission's viewpoints are.

"I feel that it is perfectly clear what you have said today that you want, but it seems that Mr. Landels doesn't want me to have any part of it. My feelings aren't hurt, but I feel if there is another agreement written like this, leaving holes like this, we will be spending another meeting like this trying to analyse what has been written.

"If we could have a meeting between Mr. Landels, Mrs. Summers, Mr. Jordan and myself, I think we could come up with, particularly if we have a transcript of these minutes, an agreement which would be acceptable to all parties concerned."

Commissioner Azevedo: "I can't quite escape the feeling that Mr. Neider is somewhat involved in this, and he is the only other owner of lands beyond, and that is what the whole question of circulation applies to. Therefore, I really can't see why we couldn't have a committee meeting including the people and possibly a Commissioner to see if we can work out some wording, maybe we won't, but maybe we can get closer and come up with something with which the Commission is in agreement."

Chairman Upton: "Is that agreeable Mr. Landels?"

Mr. Landels: "We will do everything in our power, but sooner or later ..... (unable to be transcribed)

Chairman Upton: "I might state that I have been here and followed this thing through completely from the beginning, and I will say that it actually has been a lot of attrition on the Commission. It started out one way, went another and still another way, and in my way of thinking I feel that the Seminary has a large responsibility for circulation, maybe not the complete responsibility, but I think that they have a responsibility, because in the first plans and the second plans that were presented, it was their total responsibility. I would think that if a meeting could be arranged before our next regular meeting, between Mrs. Summers, Mr. Landles, Mr. McCarthy and anyone else who would be interested in this, any of the Commission that wished to be present, I think they should be there, and Mr. Neider, or Mr. Neider's representative."

Commissioner Schultz: "He might even be willing to come into the agreement as a share of it himself."

Mr. Landels: "We are the only ones required to do anything now, and I am not very happy to have five or six people get their words in. We are assuming a very real obligation.. "

Commissioner Azevedo then moved that this matter be continued until the meeting of January 6, 1958, and in the meanwhile these points that have been an issue here, be discussed by a committee to consist of representatives of the Seminary, Mr. Neider, the Planning Staff any Commissioners who wish to be present, County Counsel and a representative of the Road Department if deemed necessary.

Mrs. Summers: "I have one further suggestion. If this is going to be a committee, that a member of the Board of Supervisors, either the Chairman or the member of the district, might be present, since they are the ones who are going to be hearing this all over again, and they might like to know what's in it."

Chairman Upton stated that he felt that this meeting should be set up by phone as all parties are not present who would be interested.

It was suggested that perhaps this matter could be continued at a later date in January because of the Christmas holidays making it rather hard to get people together.

Chairman Upton felt that if the committee's findings were not complete by the meeting of January 6, 1958, then it could again be continued. He didn't feel that this postponement would hurt the Seminary in any way because their building permits had been approved already.

It was brought out that they have another group of buildings going to bid in December.

There was no second to Commissioner Azevedo's motion.

Commissioner Schultz: "I move that this matter be continued to January 6, 1958, and in the meantime a revised agreement be prepared embodying the change regarding the alternate route, and the determination of a fair share, and that the agreement in the meantime be submitted to Mr. McCarthy for his recommendations, and a final agreement be reported back by the next meeting."

The motion was seconded by Commissioner Ludy and unanimously passed.

APPLICATION FOR USE PERMIT - Bethel Baptist Church GRANTED 10,630

The Commission considered the application of the Bethel Baptist Church for a use permit for the construction of a church sanctuary and educational building on property described as a Portion of Lot 49, Novato Ranch Subdivision 8, located on the south side of Novato Blvd, approximately 130 feet east of Simmons Lane, Novato.

Communication was read from Mr. & Mrs. Dewitt Lee in protest.

For report and recommendations as given by Mr. Dobbs, see Staff Report of December 16, 1957 pages 7 & 8.

The pastor of the group spoke stating that the posted plan had been submitted by the architect as the site study plan but they now only plan a 300 seating capacity in the sanctuary and only one educational building directly behind the first building to be built so all the remaining rear area would be for parking.

Commissioner Cuzner didn't feel that there was any conflict of use here, but that it was a matter of traffic and parking. He referred to another parish hall in the area which has off-street parking, but when it is in use there is a traffic snarl.

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5. RECONSIDERATION OF DEVELOPMENT PLAN - Golden Gate Baptist Seminary
Continued

Dr. Graves and his attorney, Mr. Landels, met in this office with Mrs. Summers, Leland Jordan and Marvin Brigham and had with them a proposed legal document which would be their guarantee to go forward with the road construction when required by the County.

Messrs Jordan and Brigham appeared to feel that the proposal would be satisfactory and acceptable to the County and both were to work further with Mr. Landels on details. A report will be ready for presentation at the meeting.

STAFF REPORT

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SPECIAL MEETING - January 30, 1958.

Commissioner Azevedo moved that a special meeting be held on January 30, 1958 at 8:00 P.M. to discuss this matter.

The motion was seconded by Commissioner Schultz and unanimously carried. JAN 6 1958

Mrs. Summers suggested that the County Counsel and Mr. Brigham be invited to be present, and to so advise the Board of Supervisors.

RECONSIDERATION OF DEVELOPMENT PLAN - Golden Gate Baptist Seminary
Continued
PART APPROVED
PART CONTINUED

Mrs. Summers explained that on Tuesday, December 24, 1957, Dr. Upton and herself had met with Dr. Graves and Mr. Landels to discuss the revised agreement proposed by the Seminary for the improvement of W. Strawberry Drive. She stated that copies of this revised agreementd had been submitted to Lee Jordan, Bryan McCarthy, Mr. Brigham and Commissioners Schultz & Azevedo,, in order that they might make any comments, recommendations or suggestions, at this time.

Mrs. Summers reported that this matter had been placed on the Board's agenda for Tuesday 7th, and that Mr. McCarthy had requested that it not go to the Board so soon; that Dr. Graves had been informed of Mr. McCarthy's request. JAN 6 1958

She said that Mr. Brigham has not had time to look at the revised agreement, due to illness.

Mrs. Summers: "In essence the new agreement makes three changes: (1) It drops any mention as to how the 'fair share' of the road cost would be determined. (2) It provides for an alternate route through the Seminary, in case this road as planned is not feasible, and this change is worded as follows: 'If the Board of Supervisors shall at any time determine, after being advised by its legal advisor that it is not possible legally to acquire the additional lands necessary to complete the right of way for said road or after being advised by the County engineering department that it is not possible except at prohibitive cost to construct said road, that the completion of said road is not feasible, then Seminary agrees to provide an alternate route through its lands.' (3) It now provides that the Seminary will be credited with the value of the present improvement rather than their cost, which Mr. Cuzner pointed out in the original agreement is possibly not a fair determination."

Mrs. Summers stated she and Dr. Upton felt these changes reflected the main points which had been brought out at the last meeting of the Commission.

Commissioner Azevedo asked Mrs. Summers if when they sat down to discuss this matter, did they think of leaving out altogether the mention of "fair share."

Mrs. Summers pointed out that a fair share of any property under an assessment district was determined by the engineer, and various engineers use various methods of determining this. In this case, it would be up to those making the determination what basis they felt would be reasonable and against what lands they felt would benefit.

Mr. McCarthy then reviewed at length the actions of record on the Golden Gate Baptist Theological Seminary to show the changes and the change of thinking that have taken place since the first approval of the Use Permit.

Chairman Upton stated that the building program will be held up if there is not some determination of this condition of the development plan.

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Mr. McCarthy then requested this item continued since something this important shouldn't be rushed into at the last minute.

Mr. Landels gave a history of the development of the Peninsula, stating that Mr. Neider owned the entire area, and that the agreement of sale to the Seminary, which constitute seven separate agreements, involves obligations between Mr. Neider and the Seminary. He stated that he had a complete file of those agreements and anyone who wished to do so was welcome to look at them. He then reviewed the revised agreement.

Commissioner Azevedo asked Mr. Landel if he had said that the Seminary had built E. Strawberry Drive.

Mr. Landel stated that it has been financed by the Seminary and that they gave $255,000. And that $150,000 was deposited in a bank for the building of East Strawberry Drive.

Commissioner Azevedo asked if the construction of E. Strawberry Drive and the access into the point was all that was required to serve the subdivision and would the planning staff feel that that fulfills Mr. Neider's obligation, as far as his own subdivisions were concerned? Presumably then the approach of E. Strawberry Drive was what was or would have been required from Mr. Neider?

Mr. Hammond, speaking for the property owners, asked that this matter be continued. He said that he was amazed at the change which had taken place the past year. He wanted the matter continued in order to inform the people of the area regarding what has happened so that they could be heard.

Mr. Landel stated that the question of whether or not the road was going in was not the problem. But to delay giving the Seminary building permits on the housing, until all of the road is accomplished will be a very serious matter. He continued that if they were given building permits, they were willing to go on with this discussion with any group or at any time. He stated that this matter has been put off every two weeks now since back in October 1957 and they now want an answer. "We now have our plans out to bid and they will come in soon and we want to have some assurance that we can get building permits. We expect that we will be actually in construction on this property by the 1st of February. I think we have gone into the problem in detail, and this might as well be that last one big meeting. At least we need the approval of this group to get building permits for the housing which is so very essential to our opening. Time is of the essence, June a year from now is the absolute deadline for the opening.

"The problem involves between a million and a half to two million dollars worth of building, so it is very important that we take advantage of every bit of time we can."

Commissioner Cuzner said that this matter had been before the Commission for so long that it was no longer clear to him as to what was being considered under this reconsideration.

He felt that he was in agreement with Mr. Landels and Dr. Graves that they have it exhausted as to study of this thing and he would like to bring it to a head. He asked if they should have a motion now, just what would it be on?

Commissioner Schultz explained that it would be to recommend to the Board of Supervisors that the County enter into this agreement in lieu of any bond that would be required, prior to the issuance of any building permits.

Commissioner Azevedo asked if this was the question of the bond.

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She was answered in the affirmative, but that then the question of whether the bond should cover the whole road or a part of the road had come up and it had been at this point ever since.

Commissioner Schultz wanted one point clarified, and that was, that this was only the first stage of building which the Seminary was seeking building permits for at this time.

He was answered in the affirmative.

Mrs. Summers: "In the first place you granted a use permit with conditions, one of the conditions was that the development plans must be approved by the Planning Commission. Under that condition plans were approved subject to conditions, one of which was the construction of this road. That condition has now been changed from requiring the construction, to requiring the bond, removing this portion from Gate 3 to Gate 1 from the requirement of bond or making it a dedication.

"I have always advised not to issue your final building permits until this was done, because this was your final hope of getting a road constructed. We are all saying, 'fine go ahead and issue your final building permits and go ahead with construction,' but I would like to advise that we don't lose the major control if occupancy of the building are withheld."

Commissioner Schultz: "I think that we have exhausted this thing, and we have considered this agreement and the one presented last time. As near as I can recollect, the changes that were suggested and indicated at our last meeting have been incorporated in this revised agreement.

"The provision for an alternate road seems clear in the agreement to be within the control of the Board of Supervisors, not at their complete discretion, but at least within their control to a reasonable degree.

"The provision for a 'fair share' by arbitration seems to be the only practical way of approaching the problem at this present time."

Commissioner Schultz then moved: (1) That the Commission recommend to the Board of Supervisors that the County enter into this improvement agreement with the Seminary, and that they accept this agreement in lieu of the bond, subject to the County Counsel's assurance that the agreement covers the necessary legal points. (2) That upon the execution of this agreement the building permits for the first stage of building be issued.

Commissioner Scott seconded the motion.

Commissioner Azevedo: "I think that the reason we have gone into this so exhaustively and exhaustingly, is that when we made our original change in position, to use Bill Wright's old expression, 'we opened a can of worms'. And I have become more and more aware of that as we have gone on and on, and it seems to me that we have been getting deeper in the morass instead of out of it.

"When we started, the original position of the Commission at that time, was that the developer provide circulation to lands beyond and the Seminary was the developer. We had a shift in that, we said the Seminary is different from other developers because the Seminary doesn't profit from each lot along the road, and so the Seminary shouldn't pay it all. I think the question that we didn't consider carefully at the time, I'm sure I didn't, was then who should?

" I remember the thought being in my mind, that perhaps the public should pay part of it if it could be seen that the route around the shoreline had benefits to the general public, that the route across the Seminary didn't have. However, if we should make a decision like that, then that is a very serious thing, because it means we are setting a precedent that the County pay part of roads, and up until now the County never has.

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"Then the solution proposed was that we use this agreement instead of a bond, that says the Seminary pay its 'fair share' and that it

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should be determined on the basis of the benefits received. But there has been a 'slight-of-hand', I don't mean secretly but in a sense, because the road got moved, from where the Seminary people were using it for immediate access, to where it was on the fringe of the property and they were not using it much. This would mean that if we apply this criterion 'benefits received' the Seminary might only pay a very small portion because their traffic isn't using it, and that the property owner out at the point, Mr. Neider, would pay the big portion because his people would be using it for their access. I am not sure that this would be fair. If he has done his share, regardless of any private agreements, If he has done his share by building E. Strawberry Drive, should he be required to pay a big share of this road? I don't know.

"I'm not satisfied with this agreement, because it doesn't tell me, there is not enough to tell me, how this is going to turn out. Maybe it's going to turn out with the Seminary paying 10 to 20% and other property owners paying much more. I think that is not fair, because the Seminary made the original change to move the circulation from the middle of its grounds to the fringe.

"If the Recreation Department is going to take some land in there and they want it on the shoreline, then they might participate in building the road; if property owners other than Mr. Neider are going to develop then they are going to see a great use of it. Then I could understand better how this 'fair share' might be worked out, but without that, and only this agreement to go on, my inclination would be to go back to the original premise, that the Seminary is the developer and the developer should pay for the circulation road. I've come to a full circle on this. I was the one who proposed an agreement and that we go over it again, but with further thought I don't see it as a solution unless we should go on in much greater detail and find land owners other than Mr. Neider who would rightfully participate in this construction and possibly even the County."

Chairman Upton felt that this agreement was about as far as the Commission could go since the road position has been changed. He didn't think that the Seminary was in the same category as a private developer inasmuch as they have no product to sell, they have no lots to sell, and from a precedent setting standpoint they would not be vulnerable, because it is a different type of thing entirely. He felt that the best way to accomplish the building of a road like this is with an assessment district, but other than that this agreement would seem to be all right.

Mr. McCarthy referred to Chairman Upton's last statement and wondered why this was all they could do.

Chairman Upton reviewed the motion and asked for a roll call vote.

Mrs. Summers: "Dr. Graves asked that if this was approved today it go to the Board of Supervisors tomorrow, and I have asked the County Clerk to place it on their agenda. Under this motion then, I would only report to the Board that this is ready for the Board but has not had the review of the County Counsel."

Commissioner Schultz said that he thought Mr. Jordan had reviewed this agreement.

Mrs. Summers stated that he might have an answer on this for tomorrow.

Mr. McCarthy strongly objected to having this go before the Board so soon, because he felt that it was a "rush act." He said that it should have at least a week before it went to the Board.

The roll call vote was as follows:

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AYES:	Commissioners:	Schultz, Scott
NOES:	Commissioners:	Azevedo, Cuzner, Ludy, Upton
ABSENT:	Commissioners:	None

Commissioner Azevedo stated that she would agree to substituting such an agreement for a bond, if it were to show specifically in it that the Seminary was accepting the obligation for circulation as well as for benefit received.

Chairman Upton stated that he also was voting no for the same reason as Commissioner Azevedo. He felt that the Seminary has some responsibility for the circulation, if not all, and it has not really been shown.

Commissioner Cuzner then moved that the Commission deny reconsideration.

The motion was seconded by Commissioner Ludy.

The motion was clarified as now meaning; that a bond would be required before building permits were issued.

Commissioner Schultz: "Do you have a basis on which to suggest a method by which the bond amount can be determined?"

Chairman Upton: "I would think in order not to hold up the Seminary, we could approve the building permits and not the occupancy, and give this thing a little more study, perhaps some agreement can be arrived at whereby there is the responsibility shown for circulation."

Commissioner Azevedo: "I'm willing to give it one more try, to find a solution which doesn't put an unfair burden on other property owners."

Commissioner Azevedo recalled at one of the meetings she had asked Dr. Graves if he was objecting to the bond or objecting to putting in the whole road and it was her recollection that he has said "both."

Chairman Upton: "I'm sure this thing will be worked out some way or other. I would think the basic thing, as far as the Seminary is concerned, is the fact that they are interested in getting on with their building. As Mrs. Summers stated, there is one more step we can go whereby the County still has control, and that is, to approve building permits without occupancy and then see if we can work out some agreement which satisfies everybody. I think it can be done."

Mr. Landel: "We have never objected to discussing this matter in any way or at any time, but all this time has gone by and we need building permits to move ahead. If you want to do it without occupancy and have that control over it we are perfectly willing to do so."

Mr. Hammond: "I believe it has become apparent to the Commissioners that the Seminary has a moral obligation; if not a contractual one, to provide this road, and always has had. As I see it, the only sensible position you have is the original one; to project the road through the Seminary property, and that it be bonded to provide for it.

"I make these two comments; (1) the bond can be determined by the Public Works Department and they can proceed with their construction just like anyone else. That bond, like any other agreement is subject to change if it is shown later that it is not equitable. It seems to me that's the best suggestion.

" (2) You know as well as I do, that if theSeminary doesn't build that road it will never be built, because there are no public funds available, either recreation or otherwise. That road was on there when they bought the property, and I feel that your only recourse is to require this road to be put in, in a normal manner, and that it be bonded."

Commissioner Cuzner withdrew his motion and Commissioner Ludy withdrew his second to it.

Commissioner Schultz then moved that the conditions of approval of the Development Plan be amended to the extent that the balance of the building permits, for the first stage be approved without the necessity of a bond, but that certificate of occupancy be withheld pending final determination of the matter of the agreement or bond.

The motion was seconded by Commissioner Cuzner and it passed by a unanimous roll call vote.

5. RECONSIDERATION OF DEVELOPMENT PLAN - Golden Gate Baptist Seminary
Continued

On Tuesday, December 24, 1957, Dr. Upton and Mrs. Summers met with Dr. Graves and Attorney Landels to discuss the revised agreement proposed by the Golden Gate Seminary for the improvement of West Strawberry Drive.

Copies have been submitted to the County Counsel, Bryan McCarthy, Director of Public Works and Commissioners Schultz and Azevedo.

The Changes in the revised agreement are: 1. Drop any mention therein as to how the "fair share" will be determined. 2. Provide for an alternate route through the Seminary (see paragraph 6 last page) and 3. Provide that Seminary will be credited with the value of present improvements rather than their cost.

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Subject to receiving and reviewing comments from others, it is Mrs. Summers' impression that this revision meets the majority opinion of the Planning Commission as expressed at the last meeting.

MINUTES OF THE PLANNING COMMISSION
COUNTY OF MARIN, STATE OF CALIFORNIA

A special meeting of the Marin County Planning Commission was held on Thursday, April 3, 1958, in the Marin County Office Building, 1711 Grand Avenue, San Rafael, California.

COMMISSIONERS PRESENT: Wm. F. Upton, Chairman
Niels, Schultz Jr., Vice Chairman
George Ludy
James Cuzner
Margaret Azevedo, arrived at 8:25 P.M.

COMMISSIONERS ABSENT: George Scott, Secretary

OTHERS PRESENT: Mary R. Summers, Planning Director
R. J. Darnell, Planning Engineer
B. D. Dobbs, Zoning Administrator

The Chairman called the meeting to order at 8:00 P.M.

RECONSIDERATION OF USE PERMIT CONDITIONS
Golden Gate Baptist Theological Seminary
Continued Hearing

Mrs. Summers reviewed the previous actions of the Commission relative to the alignment and improving of West Strawberry Drive in conjunction with Use Permit grant to the Golden Gate Baptist Theological Seminary to locate on Strawberry Point.

Mr. Landels, Attorney for the Seminary, stated that the Seminary had no objection to the dedication of right of way for Strawberry Drive but felt that Dr. Graves would be disloyal to his trust if he constructed the road around the point, considering the source of the money. He felt that the need for the road was not caused by the Seminary and that the Seminary would have little use for it. He further questioned the Commission's legal right to make the requirement.

Dr. Graves supported Mr. Landel and stated that the Seminary did not consider the Commission could legally require the Seminary to construct a road for which he contended the Seminary had little or no use.

Bryan McCarthy, Attorney for Sam Neider, again reviewed the Commission's previous minutes on this matter bringing out the point that the Seminary had originally accepted the responsibility of complying with the master plan for Strawberry Point Neighborhood in the design of the Seminary and had gradually moved West Strawberry Drive to the perimeter of their property, after several sessions with the Commission, in order that it would not bisect their campus.

Chairman Upton had Dr. Graves verify that for sometime in the future there was planned a village development as a part of the Seminary which would have West Strawberry Drive as its access.

Chairman Upton had all of the prior motions of the Commission read and Commissioner Azevedo had Mrs. Summers review the original Strawberry Point Neighborhood Street and Highway plan in order to show that the Seminary had purchased land through which the major circulation of the Strawberry peninsula would run.

Mrs. Summers was asked to estimate the traffic volume which might occur through the Seminary, had the original master plan for West Strawberry Drive been followed. From estimates of traffic made by Rolland Hammond who drafted the Strawberry Master Plan and traffic estimates made by the Staff during hearings on the U. S. 101 Freeway agreement in this area, she estimated that about 5,400 movements would be the volume under the conditions suggested.

Commissioner Azevedo said she had been willing to try to work out some simple arrangement that would apply here and had been waiting for Dr. Graves and Messrs. Landels and McCarthy to produce and harmonious solution. She then stated her opinion that the Commission had no alternate but to require the Seminary to provide for a circulation as all other developers. She pointed out that the County had not excused other groups because they were churches or non-profit groups. She further pointed out that if the Seminary felt that the road around the point as planned by the Seminary was too long and too expensive and does not give them service then they could return to their original plan with the major route through the Seminary.

Commissioner Azevedo then moved that the Commission return to its original condition. This motion was discussed as to its wording and reworded as follows: That in accordance with the condition on the Use Permit the grading and site plans are approved by this Commission subject to the condition that the Golden Gate Baptist Seminary be required to build a circulation route in accordance with County standards through their property either along the shoreline as now shown on the plans, or on an alternate route which had been approved by the Planning Staff, and that a bond, in the amount of the cost of the road be posted before occupancy to assure construction within a two year period.

The motion was seconded by Commissioner Cuzner and passed by the following vote, to-wit:

AYES: Commissioners: Ludy, Cuzner, Azevedo and Upton
NOES: Commissioner Schultz
ABSENT: Commissioner Scott

Prior to voting on the motion the Commissioners discussed again that the Seminary had requested the rerouting of West Strawberry Drive from a location through their property which would have been of service both to the Seminary and the neighborhood to the a route around the shoreline which would not have as direct a benefit to the Seminary in traffic service but would remove traffic foreign to the Seminary from travelling through it.

Dr. Graves pointed out that a route through the Seminary was impractical under the present plan and grading which had been accomplished.

Mrs. Summers was asked by the Chairman to obtain an opinion from the County Counsel as to the possibility of an appeal on the Commission's decision to the Board of Supervisors.

PETITION TO AMEND ORDINANCE NO. 264 - J. E. Andreu
Returned to Planning Commission by Board of Supervisors

The Commission further considered this matter, first hearing a report from Rowland Darnell that he had again inspected the property in the field with Mr. Stokes, Deputy Public Works Director. Mr. Stokes had stated that any subdivision of this property would create a drainage problem but that two or three additional homes in the subdivision would not add substantially to the problem.

Chairman Upton summed up the staff's finding that the development of a few more houses in a specified area would make only a negligible difference in the drainage problem.

Mr. Stokes did say, however, that the overall affect of subdivision would of course be to aggravate the drainage problem.

Commissioner Azevedo commented that in the original review of this matter it had been the Commission's decision that to follow the slope policy and require large lots on hillsides also permitted in all fairness the more minimum lots on level terrain, if the smaller lots were in keeping with neighborhood development.

She also asked if a solution to the whole flood problem to Tamalpais Valley might be establishing a much larger minimum lot size, say one-half acre, for all properties in the valley, and commented that this was a basic policy question for discussion.

Harold Stockstad, resident of Tamalpais Valley, agreed that if this rezoning would only increase by one or two the number of houses expected out of the subdivision of about 50 houses, there would be a negligible effect upon drainage, but stated they had not protested entirely on drainage but on changing an established zoning.

Commissioner Azevedo stated that to try to solve the Tamalpais Valley Flood control problem by zoning was inappropriate. By denying this zoning the Commission would be saying, in effect, "If the zoning is 10,000 square feet you had better adhere to it. On the other hand if it is 7,500 square feet you had better bring the sizes up to the larger lots under the slope policy." She felt that if we were going to consider a subdivision under the slopepolicy the larger lots in turn could be balanced somewhat by permission to use a smaller lot in the area where the terrain would permit it.

Commissioner Schultz moved that the Commission report to the Board of Supervisors that the effect of the change in zone classification would appear to be to increase by three or four the number of lots in a subdivision of the land and this would have negligible effect on drainage and that the Commission feels that their previous recommendation to change the zoning is still valid. The motion was seconded by Commissioner Ludy and unanimously carried.

COMMUNICATION - Warren Callister

A letter from Warren Callister requesting a discussion regarding means of furthering a study on hillside development was read.

Taylor, Tammy

From: Steve Bower <steve@stevebower.com>
Sent: Tuesday, May 18, 2021 11:45 PM
To: EnvPlanning
Subject: Comment for the EIR for the Seminary (North Coast Land Holdings Project)
Attachments: Public access bench concern for EIR.png

I believe this should be addressed to: Rachel Reid, Environmental Planning Manager, however if there are other ways for this comment to be added to the EIR record, please do so. Thank you.

Hello, I am Steve Bower, the owner of 1 Strawberry Landing, Mill Valley, CA. 94131 Parcel 043-293-65

My neighbors who live at 2 Strawberry Landing, are also the owners of Parcel 043-293-08, a plot of land down on the water through which they have their right of way to their dock. The parcel is about a four minute walk from the Herring Drive entrance to the Seminary off of E. Strawberry Drive.

On this parcel there is a bench which, I believe, is a public access bench. There is a little sign saying so on the access stairs down to the parcel. I don't know the history, but I've heard it's some sort of compromise holdover from how parcels were broken up many years ago when the property of the Sisters of Mercy was subdivided. But, truthfully, I don't know.

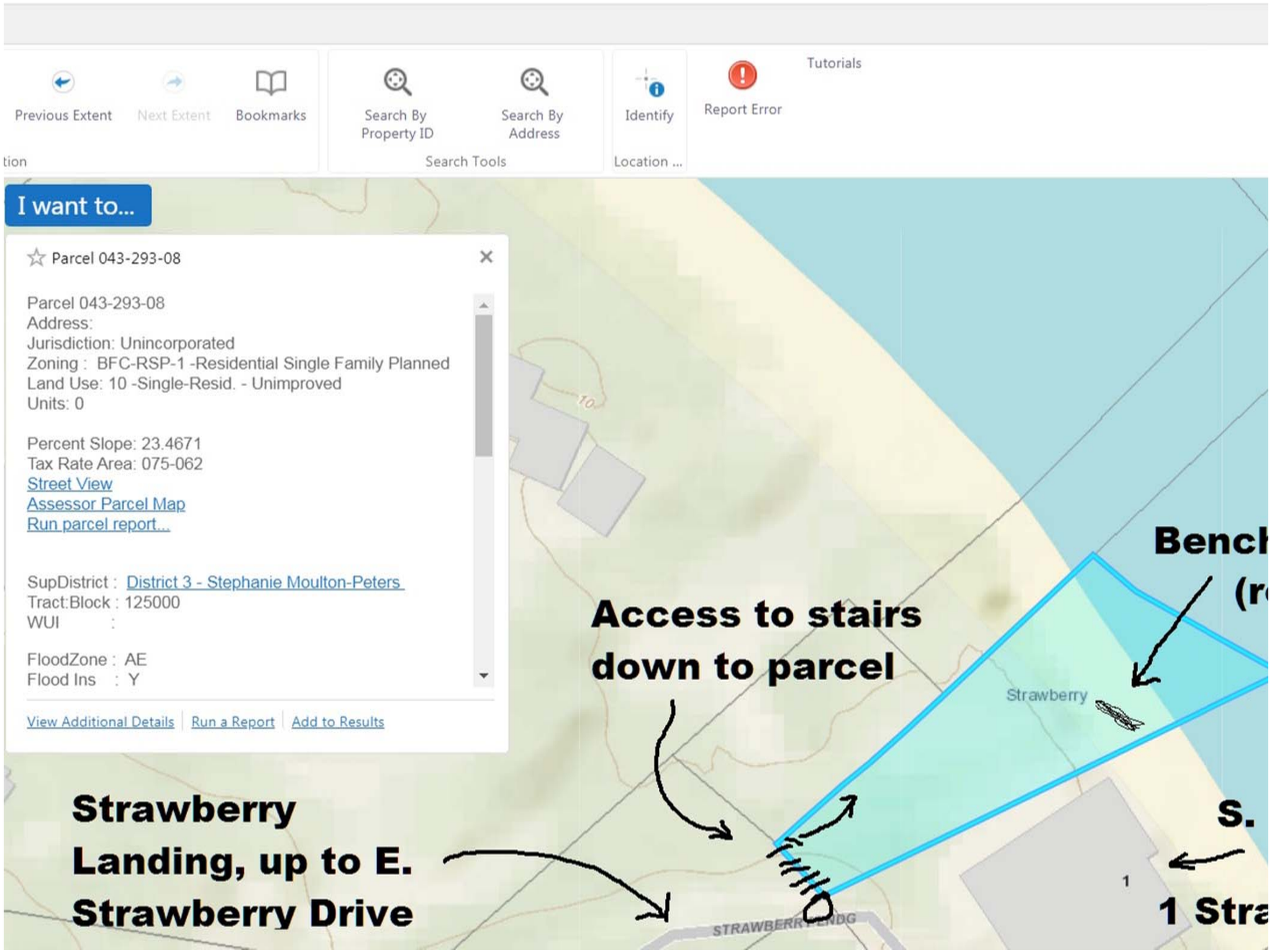
I've lived at this address for roughly seven years, and the number of people who have bothered to find this public bench, is very, very, very small, roughly one or two a year. The bench is close to our house, and if people are there talking, etc. we are acutely aware of them. It has never been a problem because it gets no traffic.

My concern is that if a High School is included as part of the Seminary property, and when little area is discovered by kids, then it will become a hangout of some type for groups, drugs, etc. and become a nuisance problem.

Therefore, I would like this issue to be included in the EIR report. I have attached a map of the parcel which may help explain it.

I believe a viable solution would be to simply remove the public access. I don't think it would impact almost anybody, and I think the owners would be ok with that as would I. I don't know what process, zoning changes, etc. would be needed to effect that change.

Please acknowledge the receipt of this message, Thanks, Steve Bower. 415 602-6163


Previous Extent
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Bookmarks
Search By Property ID
Search By Address
Identify
Report Error
Tutorials
tion
Search Tools
Location ...
I want to...
Parcel 043-293-08
Parcel 043-293-08
Address:
Jurisdiction: Unincorporated
Zoning : BFC-RSP-1 -Residential Single Family Planned
Land Use: 10 -Single-Resid. - Unimproved
Units: 0
Percent Slope: 23.4671
Tax Rate Area: 075-062
Street View
Assessor Parcel Map
Run parcel report...
SupDistrict : District 3 - Stephanie Moulton-Peters
Tract:Block : 125000
WUI :
FloodZone : AE
Flood Ins : Y
View Additional Details
Run a Report
Add to Results
Access to stairs down to parcel
Strawberry Landing, up to E. Strawberry Drive
Strawberry
STRAWBERRY LNDG

Taylor, Tammy

From: Rona Weintraub <roweintraub@earthlink.net>
Sent: Friday, May 21, 2021 12:35 PM
To: EnvPlanning
Subject: Seminary property EIR--Hydrology section
Attachments: IMG_9522[1][6][4].jpg; request #2 re EIR.docx

To: Rachel Reid and Michelle Levinson
From: Strawberry Cove Condominiums
Re: Seminary property EIR----Hydrology

The NCLH Seminary property EIR should include an evaluation of the hydrological impact on our property, the Strawberry Cove Condominiums complex at 110, 120, 150, and 160 Seminary Drive.

During the summer of 2018, we observed Mixus Services Inc. (MSI) relining the two storm drain pipes under the street in front of our buildings at 150 and 160 Seminary Drive. This was done under contract between MSI and Marin County. These corrugated metal pipes which collect drainage from the The Seminary (the uphill property) channel the water under Seminary Drive at Gilbert Ave and at the sinkhole in the Seminary playing field. Both pipes were badly corroded, leaking, and therefore required relining.

These downstream pipes connect directly to the ones underneath our Condominium property. None of the water carried by these pipes originates on our property. The Strawberry Cove Homeowners Association (SCHOA) Board and our 72 owners became very concerned that the two drains containing the runoff from the Seminary which are under our property could be similarly compromised.

In November 2019 we hired Mixus to video the storm drains which run under our property and are very close to buildings 150 and 160 Seminary Drive. At your request, we can forward a copy of their report including the expensive estimate for repair, the photos, and a thumb drive containing the video which verifies that the pipes that run under our property are also corrugated metal, are similarly very badly corroded, and are definitely leaking water into the subsoil. Additional proof of the pipe leakage is evident in several areas of our lawn and the path behind both buildings where are constantly wet in dry weather.

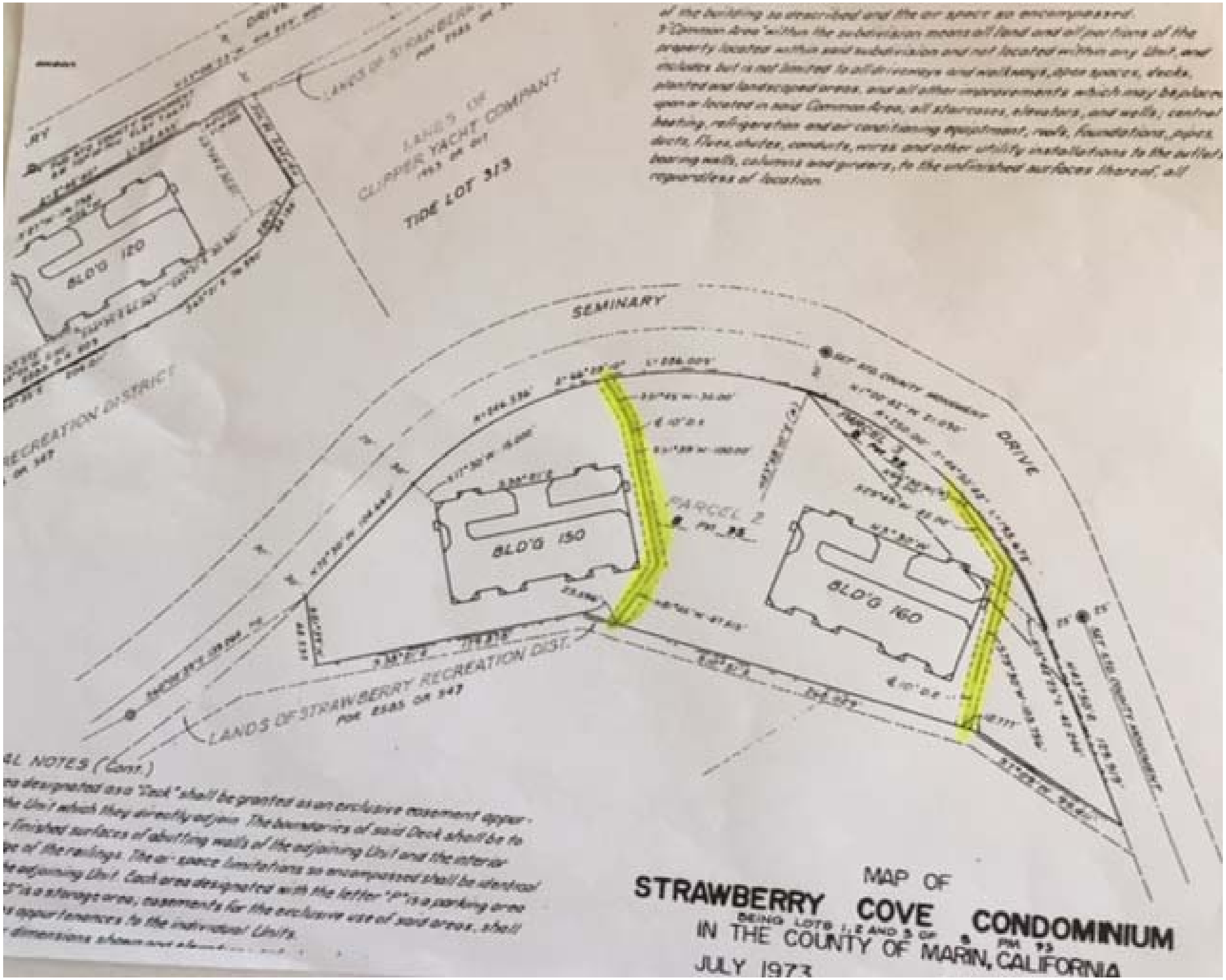
Our property does not contribute any water at all to these storm drains, and they do not empty onto our property. All the water comes directly from the Seminary property, runs under our property, and then empties into the bay.
We are extremely concerned about the existing pipes under the ground near the 150 and 160 buildings as they are parallel to and in close proximity to the structural footings for our buildings. The leakage from these drainage systems could very well be compromising the structural integrity of these foundations where 36 of our homeowners reside.

Thank you for your attention to this issue of great concern to us.

The Strawberry Cove Condominium HOA Board and our 72 homeowners

Contacts:
Rona Weintraub, Vice President of the SCHOA Board 415-328-3138 roweintraub@earthlink.net

Lori Tishgart, Strawberry Cove Condominium Property Manager 415-259-7361
Bay West Property Management Company ltishgart@bwpm.


SEMINARY
DRIVE
BLD'G 120
BLD'G 150
BLD'G 160
PARCEL 2
LANDS OF CLIPPER YACHT COMPANY
TIDE LOT 313
LANDS OF STRAWBERRY RECREATION DIST.
RECREATION DISTRICT
MAP OF
STRAWBERRY COVE CONDOMINIUM
BEING LOTS 1, 2 AND 3 OF
IN THE COUNTY OF MARIN, CALIFORNIA
JULY 1973

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Lori Tishgart, Strawberry Cove Condominium Property Manager 415-259-7361
Bay West Property Management Company ltishgart@bwpm.

Taylor, Tammy

From: Kevin Killingsworth <rwerkevin@gmail.com>
Sent: Saturday, May 22, 2021 10:38 AM
To: EnvPlanning
Subject: North Coast Land Holdings, LLC. EIR Scoping Comments

Dear Planning Department,

I have two main areas of concern regarding the scoping of the EIR for North Coast Land Holdings' proposed development for Strawberry:

1) **Exclusion of 1,000 person school from project description.** The project description acts as if the school is not being developed now so I fear it may not be analyzed as part of the EIR. I believe it is critical to evaluate the impact from a school along with the rest of the project. Since no description is provided for the school, the worst-case scenario of a commuter school should be used in the EIR along with the other components of the project. Not including the worst-case school would make the EIR worthless for issues such as traffic. The key question is what should the project be compared against? My belief is the project with a 1,000 person commuter school should be compared to existing conditions or conditions when the Baptist Seminary school was operational.

2) **Traffic**. In my mind this is the biggest issue related to the project, yet it is not listed as one of the 21 topical areas to be evaluated. Presumably it is a sub-category not shown under transportation. A thorough evaluation of the impact on traffic in Strawberry must be considered. It should be based on reasonable estimates of those who would actually use public transportation. It should consider what traffic will be like when the 101 ramp meters are being used. And most importantly, it should include a 1,000 person commuter school along with the described project.

Sincerely,
Kevin Killingsworth
Strawberry resident

Taylor, Tammy

From: Rona Weintraub <roweintraub@earthlink.net>
Sent: Monday, May 24, 2021 1:40 PM
To: EnvPlanning
Subject: NCLH EIR issue to be considered
Attachments: EIR Seminary Drive impact.docx

To: Rachel Reid and Michelle Levinson
From: Rona Weintraub
Re: NCLH EIR --impact on Seminary Drive

THE TREMENDOUS IMPACT ON SEMINARY DRIVE, A SIMPLE TWO-LANE RESIDENTIAL STREET, SHOULD BE INCLUDED IN THE NCLH SEMINARY PROPERTY EIR.

I'm submitting this request on behalf of the 72 owners (and 125+ residents) in the Strawberry Cove Condominium Complex at 110, 120, 150, and 160 Seminary Drive. This is also for the benefit of the 202 apartments (and 400+ residents) at the Strawberry Shores Apartments, also on this street.

Seminary Drive is a two-lane street, one lane in each direction, with no way of widening the street from our buildings to the entrance to the Seminary property. It is necessary to point out over and over again that the main entrance to the Seminary is directly across from 160 Seminary Drive.

Since Seminary Drive is the only street wide enough and straight enough, most of the vehicles coming and going to the Seminary will be using our street. The quality of life and safety of all of us on Seminary Drive will be impacted forever by the wide scope of the project.

To begin with, all the heavy construction vehicles and equipment will be using our street for several years. And then the main artery for the thousands of people living, working, and going to school on the newly developed property will be coming and going daily on our street forever.

I understand that traffic is not to be directly considered in the EIR, but how can it be ignored? Maybe the issue of our street can come under the topic of transportation or quality of life or safety or noise….

Furthermore, how much time will it take us to get on or off the freeway? How will we safely get in and out of our driveways? What will this do to our property values during the building process? I can imagine it would be difficult to sell any of our condos with such a mess going on. And then there's the impact on the residents of De Silva Island, and people in Mill Valley, Tiburon, and Belvedere.

Unless NCLH can construct a new thoroughfare to and from the Seminary Property, this project seems untenable for the hundreds of us living on Seminary Drive. The plans for

the property would be lovely if only it was located somewhere else.

In my opinion after living on Seminary Drive for 34 years, this project is entirely too large in scope for this area. I believe they need to eliminate many parts of it, especially the school with up to 1000 students.

Respectfully submitted,
Rona Weintraub
110 Seminary Drive, 3F

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Respectfully submitted,

Rona Weintraub

110 Seminary Drive, 3F

Taylor, Tammy

From: JOHN BRUCE CORCORAN <jbrucecorcoran@comcast.net>
Sent: Tuesday, May 25, 2021 3:59 PM
To: EnvPlanning
Subject: NCLH Scoping Letter (P1490)

Dear EIR Consultant for the North Coast Land Holdings (NCLH) Project in Strawberry (P1490),

When you analyze the environmental impacts of North Coast Land Holdings' proposal to transform the former Golden Gate Baptist Theological Seminary (GGBTS) from a residential seminary to a commuter graduate school for up to 1,000 students plus several additional new land uses, please consider the following historical facts:

1. **Does the Strawberry Community Plan (SCP), which is the governing document for our community, have any legal standing at all?** Most residents of our community advocated for letting the 1984 GGBTS Master Plan (MP) expire in 2017 because:) it was 33 years old and still had not been completed, and b.) County planners and Supervisors regularly would re-interpreted it at will anyway (sorry to be so cynical). But, we reasoned, surely County would respect our SCP. However, given events so far, we have strong doubts that even our SCP will be upheld.

2. **You are not the first EIR consulting firm to analyze the former GGBTS property.** Please review the studies and recommendations of previous environmental consulting firms. In particular, please review the December 12, 1983 "Visual Analysis of the Golden Gate Baptist Theological Seminary Master Plan" prepared by John Roberto Associates. This study conformed to SCP and pre-dated the approval of the 1984 MP.
3. **Before you consider various iterations of plans, please consult Caltrans first to provide the Marin County Community Development Agency (CDA) and all other stakeholders with the current maximum traffic capacity constraints at all of the local interchanges along Highway 101 and SR-131.** Those impacted interchanges include Highway 101 and Seminary Drive; Highway 101 and SR-131 (Tiburon Boulevard/East Blithedale Drive); SR-131 and Knoll Drive; and SR-131 and East Strawberry Drive. Of additional concern to Strawberry residents is the heavily congested northbound Redwood Frontage Road/SR-131 (Tiburon Boulevard) intersection during Peak Hours.

Also note that the traffic signals at the Highway 101/SR-131 interchange are synchronized with 9 other traffic signals that control traffic in Mill Valley. As a result, traffic in Mill Valley, Tiburon, and Belvedere also will be impacted by this project. In addition, traffic will be impacted all along the Highway 101 corridor, especially from Marin City to Sir Francis Drake Boulevard in Larkspur, a section of Highway 101 Northbound that already operates at LOS F during PM Peak.

If traffic improvements are required for the proposed project, the applicant (North Coast Land Holdings, which is a subsidiary of the $3 billion Fasken Oil Trust of Texas) should be required to pay for them. Such improvement payments would be consistent with the provisions of the Strawberry Community Plan.

4. **Be aware of Marin County inter-District rivalries.** NCLH principal Bruce Jones is a resident of District 2. He has no problem proposing oversized, heavy traffic-generating projects in our District 3, but he opposes such projects in his own District. This is the second time that he has proposed an oversized project for the former Seminary property that our community opposes. One would think after the Branson project fiasco that Mr. Jones would want to cooperate and compromise with his fellow neighbors in Strawberry, but the opposite is true. He went “big” the first time, but now he’s going even “bigger.” He has refused to reduce the size of the student body from 1,000 students. His refusal to compromise was the reason that the Seminary Tomorrow negotiations broke down. As a resident of Strawberry for 44 years, I can attest that the Seminary never had 1,000 student commuters per year.

Thank you for considering these facts.

Sincerely,

Bruce Corcoran

Taylor, Tammy

From: Josh Sale <jsale@tril.com>
Sent: Tuesday, May 25, 2021 1:12 PM
To: EnvPlanning
Subject: NCLH EIR Scoping Comments

Please include the following items in the EIR process for the former Seminary site:

1. At the scoping session, it was explained that the EIR would consider the cumulative impacts of all projects in the pipeline. In that spirit, I hope the EIR will consider: the 1,000 unit project nearing approval at Northgate; the 15,000 units that ABAG has assigned to Marin as its RHNA target; the potential growth in ADU's that result from the new mandates that came from Sacramento and which have been adopted by the County and other local entities; and other housing mandates coming from Sacramento (e.g., SB330).

2. The scoping session also described the review process. I find it puzzling that there is no role for the Strawberry Design Review Board. This Board is both more familiar with Strawberry and NCLH's proposal than any other entity in the County. It seems an obvious gap that the EIR review process doesn't include them.

3. The contract with the EIR consultants mentions measuring traffic baselines. How is this accomplished during a pandemic when traffic patterns are still atypical (e.g., people working from home)?

4. The contract with the EIR consultants mentions performing LOS analysis at a number of intersections, but the list is missing at least three important intersections:
   Redwood Highway Frontage Road and Tiburon Blvd.
   Redwood Highway Frontage Road onramp to 101 south.
   Redwood Highway Frontage road onramp to 101 north.

5. The primary entrance to the seminary (turning left from Seminary Dr onto Gilbert Dr) is unsafe because drivers can't see oncoming traffic on Seminary Dr until it's on upon them. This is particularly true when there are cars parked on the west side of Seminary Dr.

Thank you,

Josh Sale

Taylor, Tammy

From: Patricia Albo <palbo415@msn.com>
Sent: Tuesday, May 25, 2021 2:36 PM
To: EnvPlanning
Cc: Josh Sale; Joel Coopersmith; Melenie Keeffe; Michael Levy; LESLIE FERGUSON-DIETZ
Subject: Seminary Project EIR

I request the following item be included and addressed in the Seminary Project Environmental Review:

A traffic study which looks at a high school in Marin County and then overlays that traffic onto the 2 roads entering and exiting the seminary property.
The study should be conducted during months when school is in session. Exam periods, vacations and summer school should be excluded. Timing should be when students are driving to and from school and school activities.
Accurate traffic analysis can not be conducted while Covid-19 is impacting the county schools. The analysis should be conducted when all schools have returned to normal activities which may mean the traffic study cannot occur until 2022 or later.

Possible high schools:

- -Marin Catholic which reports an enrollment of approximately 800 students.
- -Terra Linda High School 1200 students.

Please do not refer to the prior traffic study. I do not think it is accurate or representative of the actual traffic that occurs around an active high school as it did not review HS traffic.

Thank You,
Patricia Albo, homeowner
24 Heron Dr
Mill Valley, CA 94941

Taylor, Tammy

From: Taylor Safford <tsafforddsi@gmail.com>
Sent: Tuesday, May 25, 2021 8:38 AM
To: EnvPlanning
Subject: Seminary EIR Scope

County of Marin – Environmental Planning Office
Seminary Redevelopment/EIR

To whom it may concern:
I live on De Silva Island and I am writing because North Coast Land Holding's redevelopment plan for the Seminary conflicts in many significant ways with the Strawberry Community Plan. As a resident of Strawberry, I hope and expect that the county will require the developer to adhere to the spirit and letter of the SCP throughout the planning process, including full disclosure of any plans for a proposed school on the site. After all, what's the point of having a community plan - especially one that aligns with the countywide plan - if the county can then allow a developer to simply ignore it?

Thank you.
Taylor Safford

From: Riley Hurd <rhurd@rflawllp.com>
Sent: Wednesday, June 02, 2021 6:40 PM
To: Levenson, Michelle <MLevenson@marincounty.org>
Cc: EnvPlanning <EnvPlanning@marincounty.org>
Subject: RE: NCLH Plans

Michelle,

I was disappointed by this series of communications. I asked for the hydrology and geotechnical studies for the project, a reasonable request when considering the scope of environmental review. You sent me the project page link. I informed you I had already reviewed that and the documents were not there. In response, you sent me the same links again. I did not find this to be productive for either of us.

These studies are necessary for a meaningful comment on the scoping. If they haven't been done, I have no idea how a drainage plan could be developed or the buildings sited and designed. If they have been done, they are public records that should have been made available.

Because these have not been done or have not been provided, we will simply submit the attached May 25 letter without the benefit of update from the studies.

Riley F. Hurd III, Esq.
RAGGHIANTI | FREITAS LLP
1101 5th Avenue, Suite 100
San Rafael, CA 94901
Tel: 415.453.9433 ext. 126
Fax: 415.453.8269
Email: rhurd@rflawllp.com
Website: http://www.rflawllp.com/

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TARNOFF
engineering corp.

1442 A Walnut St. #428, Berkeley, CA 94709 • 415.279.5996 • www.tarnoffengineering.com

May 25, 2021 TEC # 2024

County of Marin
Attn: Rachel Reid
Environmental Planning Manager
3501 Civic Center Drive, Suite 308
San Rafael, CA 94903

RE: Comments for Public Scoping Session
North Coast Land Holdings LLC
Former GGBTS Site, 201 Seminary Drive, Mill Valley
Project ID P1490

Dear Ms. Reid,

We have been retained by the Seminary Neighborhood Association to help provide civil engineering review of the above reference project. We have limited our review questions and comments to CEQA Appendix G (*Public Resources Code sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3/ 21084.2 and 21084.3*), and ask that these be addressed in the scoping session review.

VI. Geology

The environmental document should review all existing landslides, as the County of Marin has labeled nearly the entirety of this project as being an area of "mostly landslide."

Do the earthwork calculations include any remedial grading to mitigate existing landslides that may need repairs? If not, what are those quantities, and do they impact the import/export of soil?

Do the earthwork calculations include key-ways for all new fill slopes?
There is a planned fill slope that is 28-feet high on the grading plan (sheet C6.10). Given that the fields above the slope drain towards and over the slope, can this be accomplished without a bench?

The rough earthwork quantities show a balanced site. Can all of the excavated soils be used as fill, as shown on the site plans?

TARNOFF
engineering corp.

IX. Hydrology & Water Quality

Does the County of Marin have a provision in their code regarding stormwater treatment for new/replaced improvements that exceed 50% of total existing impervious surfaces onsite? If so, does this project trigger that threshold? If it does, what are the plans to treat the existing impervious surfaces?

XVI. Transportation/Traffic:

The proposed road widths (of existing and proposed roads within the subject property) conflict with the County's standards laid out in the municipal code. The proposed project would seem to require at least "Residential Roads" or "Minor Residential Roads," which have a minimum paved width of 36 feet and 28 feet respectively. The project generally proposes roads with the travel way only 20 feet wide. What are the impacts to the site plan if the roadways need to be widened?

Southern Marin Fire District's minimum roadway radii is 50 feet (for the inside curve). Judson Lane, Shuck Knoll, and Oliver Lane (at the access to Shuck Drive) all appear to have roadway curves sharper than 50 feet. How will fire access equipment navigate these very tight turns? For Oliver Lane, how will a fire truck turn around once it's entered the roadway?

Southern Marin Fire District's maximum roadway slope (without exceptions, which this project does not seem to meet) is 18%. However, this project is in a State Responsibility Area, and so the maximum roadway slope would be 16%. There are portions of the project that exceed that maximum allowable slope. What are the impacts to the site if roadway slopes must be no greater than 16%?

Sincerely,

Tarnoff Engineering Corporation

Michael L. Tarnoff
President
RCE C48596
QSD/QSP Certificate #20932

DEPARTMENT OF TRANSPORTATION
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10/26/2020

Governor's Office of Planning & Research

Oct 21 2020

STATE CLEARINGHOUSE

Making Conservation a California Way of Life.

October 21, 2020

SCH # 2020090488
GTS # 04-MRN-2020-00188
GTS ID: 20703
Co/Rt/Pm: MRN/101/4.65

Michelle Levenson, Senior Planner
County of Marin
3501 Civic Center Drive, Room 308
San Rafael, CA 94903

North Coast Land Holdings – Notice of Preparation (NOP) of an Environmental Impact report (EIR)

Dear Michelle Levenson:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the North Coast Land Holdings project. We are committed to ensuring that impacts to the State's multimodal transportation system and to our natural environment are identified and mitigated to support a safe, sustainable, integrated and efficient transportation system. The following comments are based on our review of the September 2020 NOP.

Project Understanding

The proposed project includes the following components: 1) construct a new 20,000 square feet (s.f.) facility to house a pre-school and fitness center; 2) replace a majority of the existing residences and dorm rooms with a mixture of single-family and multi-family residences and construct new single-family and multi-family residence (336 units in total); 3) construct a new 267,354 s.f. residential care facility; 4) renovate and expand the Administration Building; 5) demolish the existing maintenance building and construct a new 2,200 s.f. one in a different location; 6) install landscape and hardscape improvements associated with the school campus and residential development; and 7) provide open space and establish a network of trails throughout the project area. This 123-acre project site is located north of the Golden Gate Bridge and adjacent to US-101 and the Seminary Drive exit.

Travel Impact Analysis
With the enactment of Senate Bill (SB) 743, Caltrans is focused on maximizing efficient development patterns, innovative travel demand reduction strategies, and multimodal improvements. For more information on how Caltrans assesses Transportation Impact Studies, please review Caltrans' Transportation Impact Study Guide. The detailed Vehicle Miles Traveled (VMT) analysis should include the following:

- A VMT analysis pursuant to the County's guidelines or, if the County has no guidelines, the Office of Planning and Research's Guidelines. Projects that result in automobile VMT per capita above the threshold of significance for existing (i.e. baseline) city-wide or regional values for similar land use types may indicate a significant impact. If necessary, mitigation for increasing VMT should be identified. Mitigation should support the use of transit and active transportation modes. Potential mitigation measures that include the requirements of other agencies such as Caltrans are fully enforceable through permit conditions, agreements, or other legally-binding instruments under the control of the City.

- A schematic illustration of walking, biking and auto conditions at the project site and study area roadways. Potential safety issues for all road users should be identified and fully mitigated.

- The project's primary and secondary effects on pedestrians, bicycles, travelers with disabilities and transit performance should be evaluated, including countermeasures and trade-offs resulting from mitigating VMT increases. Access to pedestrians, bicycle, and transit facilities must be maintained.

- Clarification of the intensity of events/receptions to be held at the location and how the associated travel demand and VMT will be mitigated.

Additionally, potential impacts due to the project generated trips on the US-101 should be analyzed, given that the project is in proximity to US-101. Please submit the transportation impact study to Caltrans when it becomes available.

Sea Level Rise
The effects of sea level rise may have impact on the transportation facilities located in the project area. California Executive Order (EO) S-13-08 directs State agencies planning construction projects in areas vulnerable to sea level rise to begin planning for potential impacts by considering a range of sea level

rise scenarios for years 2050 and 2100. Higher water levels may increase erosion rates, change environmental characteristics that affect materials durability, lead to increased groundwater levels and change sediment movement along shores and at estuaries and river mouths, as well as affect sole pore pressure at dikes and levees on which the transportation facilities are constructed. All these factors must be addressed through the geotechnical and hydrological studies conducted in coordination with Caltrans.

Construction-Related Impacts

Because the project area is within close vicinity of US-101, potential impacts to the State Right-of-Way (ROW) from project-related temporary access points should be analyzed. Mitigation for significant impacts due to construction and noise should be identified in the DEIR. Project work that requires movement of oversized or excessive load vehicles on state roadways requires a transportation permit that is issued by Caltrans. To apply, visit: https://dot.ca.gov/programs/traffic-operations/transportation-permits.

Prior to construction, coordination may be required with Caltrans to develop a Transportation Management Plan (TMP) to reduce construction traffic impacts to US-101.

Lead Agency

As the Lead Agency, the County of Marin is responsible for all project mitigation, including any needed improvements to the State Transportation Network (STN). The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures.

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, please contact Yunsheng Luo at Yunsheng.Luo@dot.ca.gov. Additionally, for future notifications and requests for review of new projects, please contact LDIGR-D4@dot.ca.gov.

Sincerely,

Mark Leong

Mark Leong
District Branch Chief
Local Development - Intergovernmental Review
cc: State Clearinghouse

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State of California – Natural Resources Agency
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GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

October 19, 2020

Governor's Office of Planning & Research

Oct 20 2020

STATE CLEARINGHOUSE

Ms. Michelle Levenson
County of Marin
3501 Civic Center Drive, Room 308
San Rafael, CA 94903
envplanning@marincounty.org

Subject: North Coast Land Holdings, LLC, Community Plan Amendment, Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal, Notice of Preparation of a Draft Environmental Impact Report, SCH No. 2020090488, Marin County

Dear Ms. Levenson:

The California Department of Fish and Wildlife (CDFW) reviewed the County of Marin's (County) Notice of Preparation (NOP) of a draft Environmental Impact Report (EIR) provided for the North Coast Land Holdings, LLC, Community Plan Amendment, Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal (Project) located at 201 Seminary Drive, Mill Valley, CA 94941, Marin County.

CDFW is a Trustee Agency with responsibility under the California Environmental Quality Act (CEQA) §15386 for commenting on projects that could impact fish, plant, and wildlife resources. CDFW is also considered a Responsible Agency if a project would require discretionary approval, such as the California Endangered Species Act (CESA) Permit, the Native Plant Protection Act, the Lake and Streambed Alteration Agreement (LSAA) and other provisions of the Fish and Game Code that afford protection to the State's fish and wildlife trust resources. Pursuant to our jurisdiction, CDFW has the following concerns, comments, and recommendations regarding the Project.

PROJECT DESCRIPTION AND LOCATION

Proponent: North Coast Land Holdings, LLC

Objective: The Project will develop a residential care facility for senior citizens, residential housing, pre-school, and fitness center on the 127-acre Golden Gate Baptist Seminary property. Pre-existing buildings, including seminary dorm rooms, residences, and a maintenance building will be demolished or renovated.

Location: The Project is located at 201 Seminary Drive, Mill Valley, CA 94941. While identified as within Mill Valley, the Project occurs in unincorporated Marin County in census-designated Strawberry. The Project is approximately bounded by Richardson

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Bay to the west, Seminary Drive to the south, Storer Drive to the east, and Ricardo Road to the north. It is east of U.S. Route 101.

The CEQA Guidelines (§§15124 and 15378) require that the draft EIR incorporate a full Project description, including reasonably foreseeable future phases of the Project, and that contains sufficient information to evaluate and review the Project's environmental impact. Please include a complete description of the following Project components in the Project description:

- Footprints of permanent Project features and temporarily impacted areas, such as staging areas and access routes.
- Encroachments into riparian habitats, wetlands, or other sensitive areas.
- Tree removal, including the number of trees by species, diameter at breast height, and health status.
- Area and plans for proposed buildings/structures, demolition of existing structures, renovation of existing structures, ground disturbing activities, fencing, paving, stationary machinery, landscaping, and stormwater systems.
- Operational features of the Project, including level of anticipated human presence (describe seasonal or daily peaks in activity, if relevant), artificial lighting/light reflection, noise and greenhouse gas generation, traffic generation, and other features.
- Construction schedule, activities, equipment, and crew sizes.

ENVIRONMENTAL SETTING

Sufficient information regarding the environmental setting is necessary to understand the Project's, and its alternative's (if applicable), significant impacts on the environment (CEQA Guidelines, §§15125 and 15360). CDFW recommends that the CEQA document prepared for the Project provide baseline habitat assessments for special-status plant, fish, and wildlife species located and potentially located within the Project area and surrounding lands, including all rare, threatened, or endangered species (CEQA Guidelines, §15380). Fully protected, threatened or endangered, candidate, and other special-status species that are known to occur, or have the potential to occur in or near the Project site, include, but are not limited to:

- Tiburon jewelflower (*Streptanthus glandulosus* ssp. *niger*), state and federally listed as endangered, California Rare Plant Rank (CRPR) 1B.1
- Salt marsh harvest mouse (*Reithrodontomys raviventris*), state and federally listed as endangered, California fully protected species
- California Ridgway's rail (*Rallus obsoletus obsoletus*), federally and state listed

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as endangered, California fully protected species

- California black rail (*Laterallus jamaicensis coturniculus*), state listed as threatened, California fully protected species
- Longfin smelt (*Spirinchus thaleichthys*), state listed as threatened and federal candidate for listing
- Pallid bat (*Antrozous pallidus*), California Species of Special Concern (SSC)
- Townsend's big-eared bat (*Corynorhinus townsendii*), SSC
- Western red bat (*Lasiurus blossevillii*), SSC
- Hairless popcorn flower (*Plagiobothrys glaber*), CRPR 1A
- Franciscan thistle (*Cirsium andrewsii*), CRPR 1B.2
- White-tailed kite (*Elanus leucurus*), California fully protected species
- Oak woodland (*Quercus* spp.), Areas of Conservation Emphasis-Terrestrial Significant Habitat[1] and sensitive natural community[2]

Habitat descriptions and species profiles should include information from multiple sources: aerial imagery, historical and recent survey data, field reconnaissance, scientific literature and reports, and findings from "positive occurrence" databases such as California Natural Diversity Database (CNDDB). Based on the data and information from the habitat assessment, the CEQA document can then adequately assess which special-status species are likely to occur in the Project vicinity.

CDFW recommends that during Project planning and prior to Project implementation, surveys be conducted for special-status species with potential to occur, following recommended survey protocols if available. Survey and monitoring protocols and guidelines are available at: https://wildlife.ca.gov/Conservation/Survey-Protocols.

Botanical surveys for special-status plant species, including those with a California Rare Plant Rank (http://www.cnps.org/cnps/rareplants/inventory/), must be conducted during the blooming period for all sensitive plant species potentially occurring within the Project area and require the identification of reference populations. Please refer to CDFW protocols for surveying and evaluating impacts to rare plants available at: https://wildlife.ca.gov/Conservation/Plants.

[1] CDFW Areas of Conservation Emphasis (ACE) Fact Sheet for Terrestrial Significant Habitats: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=150834
[2] CDFW maintains a list of vegetation alliances considered sensitive natural communities based on state and global rarity ranks: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153609&inline

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IMPACT ANALYSIS AND MITIGATION MEASURES

The CEQA Guidelines (§15126.2) necessitate that the draft EIR discuss all direct and indirect impacts (temporary and permanent) that may occur with implementation of the Project. This includes evaluating and describing impacts such as:

- Potential for "take" of special-status species.
- Loss or modification of breeding, nesting, dispersal and foraging habitat, including vegetation removal, alteration of soils and hydrology, and removal of habitat structural features (e.g. snags, roosts, overhanging banks, and anthropogenic habitat such as buildings).
- Loss or modification of sensitive natural communities or vegetation associations.
- Permanent and temporary habitat disturbances associated with ground disturbance, noise, lighting, reflection, air pollution, traffic, or human presence.
- Obstruction of movement corridors, fish passage, or access to water sources and other core habitat features.

The CEQA document also should identify reasonably foreseeable future projects in the Project vicinity, disclose any cumulative impacts associated with these projects, determine the significance of each cumulative impact, and assess the significance of the project's contribution to the impact (CEQA Guidelines, §15355). Although a project's impacts may be insignificant individually, its contributions to a cumulative impact may be considerable; a contribution to a significant cumulative impact – e.g., reduction of available habitat for a listed species – should be considered cumulatively considerable without mitigation to minimize or avoid the impact.

Based on the comprehensive analysis of the direct, indirect, and cumulative impacts of the Project, the CEQA Guidelines (§§ 15021, 15063, 15071, 15126.2, 15126.4 and 15370) direct the lead agency to consider and describe all feasible mitigation measures to avoid potentially significant impacts in the draft EIR, and/or mitigate significant impacts of the Project on the environment. This includes a discussion of take avoidance and minimization measures for special-status species, which are recommended to be developed in early consultation with the U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service and CDFW. These measures can then be incorporated as enforceable Project conditions to reduce potential impacts to biological resources to less-than-significant levels. Fully protected species such as California black rail and white-tailed kite may not be taken or possessed at any time (Fish and Game Code § 3511). Therefore, the draft EIR is advised to include measures to ensure complete take avoidance of these fully protected species. CDFW recommends the following mitigation measures be incorporated into the draft EIR to reduce potentially significant impacts to special-status species:

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Mitigation Measure 1: Special-Status Plant Surveys and Avoidance

A Qualified Biologist shall conduct a survey during the appropriate blooming period for all special-status plants that have the potential to occur on the Project site the season prior to the start of construction. Surveys should be conducted following *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities*, prepared by CDFW, dated March 20, 2018[3]. If special-status plants are found during surveys, the Project will be re-designed to avoid impacts to special-status plants to the greatest extent feasible. If impacts to special-status plants cannot be avoided completely during construction, the draft EIR should outline adequate compensatory mitigation, and, for species listed as threatened or endangered pursuant to CESA, the Project will apply for an Incidental Take Permit from CDFW.

Mitigation Measure 2: California Ridgway's Rail and California Black Rail Habitat Assessment, Surveys, and Avoidance

The CEQA document should outline the location of salt marsh habitat relative to the Project activities. Any Project activities within or adjacent to tidal marsh or suitable California Ridgway's rail (CRR) or California black rail (CBR) habitat shall be avoided during rail breeding season, (January 15 to August 31 for CRR, February 1 to August 31 for CBR), each year unless appropriately timed, yearly protocol level surveys are conducted and survey methodology and results are submitted to and accepted by CDFW, or, the Project implements noise and vegetation avoidance measures below. Surveys shall focus on suitable habitat that may be disturbed by Project activities during the breeding season to ensure that CRR or CBR are not nesting in these locations.

If breeding rails are determined to be present, no activities, visual disturbance (direct line of sight) and/or an increase in the ambient noise level shall occur within 700 feet of areas where CRR or CBR have been detected during the breeding season. If surveys have not been conducted, all work shall be conducted 700 feet from rail habitat during nesting season.

If work must be done during the breeding season within 700 feet of CRR or CBR habitat, noise levels cannot exceed 10 dBA over existing ambient noise levels and a noise attenuating fence or visual barrier must be installed to reduce visual and/or acoustic impacts.

Mitigation Measure 3: Salt Marsh Harvest Mouse Habitat Assessment and Avoidance

The CEQA document should outline the location of salt marsh habitat relative to the Project activities. Prior to impacting salt marsh habitat, a Qualified Biologist or Biological

[3] https://www.wildlife.ca.gov/Conservation/Survey-Protocols#377281280-plants

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Monitor, familiar with salt marsh harvest mouse (SMHM), shall walk through and inspect suitable habitat prior to vegetation removal and search for signs of harvest mice or other sensitive wildlife and plants. Following inspection, personnel, under the supervision of the qualified biologist, will disturb (e.g., flush) vegetation to force movement of SMHM into adjacent marsh areas. Flushing of vegetation will first occur in the center of the site then progress toward the two sides away from the open water areas or in this case, away from impacted habitat. Immediately following vegetation flushing, personnel, under the supervision of the qualified biologist or biological monitor, will remove vegetation with hand tools (e.g. weed-eater, hoe, rake, trowel, shovel, grazing) so that vegetation is no taller than two inches.

After vegetation removal, a mouse-proof barrier shall be placed along the edge of the area removed of vegetation to further reduce the likelihood of SMHM returning to the area prior to construction. The fence shall be made of a heavy plastic sheeting material that does not allow salt marsh harvest mice to pass through or climb, and the bottom shall be buried to a depth of 4 inches so that salt marsh harvest mouse cannot crawl under the fence. Fence height shall be at least 12 inches higher than the highest adjacent vegetation with a maximum height of 4 feet. All supports for the exclusion fencing shall be placed on the inside of the work area. An approximately 2-foot wide de-vegetated buffer shall be created along the habitat side of the exclusion fence. The SMHM exclusion fencing shall remain in operating condition throughout the duration of the Project. The Qualified Biologist or Biological Monitor shall daily inspect the integrity of the exclusion fencing to ensure there are no gaps, tears or damage. Maintenance of the fencing shall be conducted as needed. Any necessary repairs to the fencing shall be completed within 24 hours of the initial observance of the damage. Any mice found along or outside the fence shall be closely monitored until they move away from the Project area.

Mitigation Measure 4: Nesting Bird Surveys and Protections

If construction, grading, vegetation removal, or other Project-related activities are scheduled during the nesting season of protected raptors and migratory birds, February 1 to August 31, a focused survey for active nests of such birds shall be conducted by a Qualified Biologist within 7 days prior to the beginning of Project-related activities. If an active nest is found, Permittee shall consult with USFWS and CDFW regarding appropriate action to comply with the Migratory Bird Treaty Act of 1918 and Fish and Game Code. If a lapse in Project-related work of 7 days or longer occurs, another focused survey shall be required before Project work can be reinitiated.

Mitigation Measure 5: Roosting Bat Surveys and Protections-Buildings

Buildings shall be surveyed for bats by a Qualified Bat Biologist within 15 days prior to any building demolition or renovation. Demolition or renovation plans shall cease if bats are found roosting within the buildings until proper eviction and exclusion plans have

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been implemented. Eviction and exclusion of bats shall consist of daytime installation of blockage material or one-way exits between March 1 and April 15 or September 1 and October 15 (outside of maternity season and hibernation season). Exclusion materials shall be re-evaluated for effectiveness by the Qualified Biologist up to two weeks prior to building demolition.

Mitigation Measure 6: Roosting Bat Surveys and Protections-Trees

Removal of trees containing suitable potential bat roosting habitat in the form of crevices, cavities, or exfoliating bark, as with exclusion/eviction from buildings, must be conducted only during seasonal periods of bat activity, and under supervision of a Qualified Bat Biologist. Trees within the Project area shall be assessed by a Qualified Bat Biologist within 15 days prior to any tree removal. If trees are identified as potential bat roost trees, tree removal shall occur outside of the maternity season and hibernation season and via a two-step method conducted over two consecutive days. On day one, create noise and vibration by cutting non-habitat branches and limbs from habitat trees using chainsaws only (no excavators or other heavy machinery). The noise and vibration disturbance, together with the visible alteration of the tree, is effective in causing bats that emerge nightly not to return to the roost that night. On day two, the remainder of the tree will be removed.

Mitigation Measure 7: Tree Removal Mitigation

Live trees removed from the Project area shall be replaced on-site at the following ratios:

Oak trees:

- 4:1 replacement for trees 5 to 10 inches diameter at breast height (DBH)
- 5:1 replacement for trees greater than 10 inches to 15 inches DBH
- 15:1 replacement for trees greater than 15-inch DBH, which are considered old-growth oaks

Replacement oaks will come from nursery stock grown from locally sourced acorns, or from acorns gathered locally, preferably from the same watershed in which they are planted.

Other tree species greater than or equal to 6-inch DBH will be mitigated at the following ratios:

- 1:1 replacement for non-native trees
- 3:1 replacement for native trees

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Sea Level Rise

The Project should assess potential sea-level rise in the area and evaluate development location and habitat impacts with future conditions in mind. The State of California Sea-Level Rise Guidance/2018 Update[4] provides a science-based methodology for state and local governments to analyze and assess the risks associated with sea-level rise and incorporate sea-level rise into their planning, permitting, and investment decisions. The Marin Shoreline Sea Level Rise Vulnerability Assessment/Bay Waterfront Adaptation & Vulnerability Evaluation (BayWAVE)[5] provides context and estimates of the physical and fiscal impacts across the County's bayside shoreline over the coming decades. It includes sea level rise scenarios ranging from 10 inches in the near-term (15 years) to 20 inches in the medium-term (mid-century) and to 60 inches in the long-term (end of century). Since the purpose of the Project is to provide long-term residential and associated structures and it is located on a small peninsula in Richardson Bay, CDFW recommends incorporating the long-term (end of century) scenarios for sea level rise to fully evaluate Project impacts.

REGULATORY REQUIREMENTS

California Endangered Species Act

Please be advised that a CESA Incidental Take Permit (ITP) must be obtained if the Project has the potential to result in take[6] of plants or animals listed under CESA, either during construction or over the life of the Project. Issuance of a CESA Permit is subject to CEQA documentation; the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the Project will impact CESA listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA ITP.

CEQA requires a Mandatory Finding of Significance if a project is likely to substantially restrict the range or reduce the population of a threatened or endangered species. (Pub. Resources Code, §§ 21001, subd. (c), 21083; CEQA Guidelines, §§ 15380, 15064, and 15065). Impacts must be avoided or mitigated to less-than-significant levels unless the CEQA Lead Agency makes and supports Findings of Overriding Consideration (FOC).

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[4] California Natural Resources Agency. 2018. State of California Sea-level Rise Guidance. https://opc.ca.gov/webmaster/ftp/pdf/agenda_items/20180314/Item3_Exhibit-A_OPC_SLR_Guidance-rd3.pdf

[5] Marin County. 2017. Marin Shoreline Sea Level Rise Vulnerability Assessment/Bay Waterfront Adaptation & Vulnerability Evaluation. Prepared by BVB Consulting LLC for Marin County Department of Public Works, June 2017. https://www.marincounty.org/-/media/files/departments/cd/planning/slr/baywave/vulnerability-assessment-final/final_allpages_bvbconsulting_reduced.pdf?la=en

[6] Take is defined in Fish and Game Code section 86 as hunt, pursue, catch, capture, or kill, or attempt any of those activities.

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The CEQA Lead Agency's FOC does not eliminate the project proponent's obligation to comply with CESA.

Lake and Streambed Alteration Agreement

CDFW requires an LSA Notification, pursuant to Fish and Game Code section 1600 et. seq., for Project activities affecting lakes or streams and associated riparian habitat. Notification is required for any activity that may substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank including associated riparian or wetland resources; or deposit or dispose of material where it may pass into a river, lake or stream. Work within ephemeral streams, washes, watercourses with a subsurface flow, and floodplains are subject to notification requirements. CDFW will consider the CEQA document for the project and may issue an LSA Agreement. CDFW may not execute the final LSA Agreement until it has complied with CEQA as a Responsible Agency.

Migratory Birds and Raptors

CDFW also has authority over actions that may disturb or destroy active nest sites or take birds without authorization. Fish and Game Code sections protecting birds, their eggs, and nests include sections 3503, 3503.5, and 3513. Fully protected species may not be taken or possessed at any time (Fish and Game Code, § 3511). Migratory birds are also protected under the federal Migratory Bird Treaty Act.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. [Pub. Resources Code, § 21003, subd. (e)]. Accordingly, please report any special-status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNNDB online field survey form and other methods for submitting data can be found at https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found at https://wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

FILING FEES

CDFW anticipates that the Project will have an impact on fish and/or wildlife, and assessment of filing fees is necessary (Fish and Game Code, § 711.4; Pub. Resources Code, § 21089). Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW.

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If you have any questions, please contact Ms. Amanda Culpepper, Environmental Scientist, at amanda.culpepper@wildlife.ca.gov, or Ms. Karen Weiss, Senior Environmental Scientist (Supervisory), at karen.weiss@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Gregg Erickson
BE74D4C93C604EA...

Gregg Erickson
Regional Manager
Bay Delta Region

cc: State Clearinghouse

NATIVE AMERICAN HERITAGE COMMISSION

Governor's Office of Planning & Research

Oct 02 2020

STATE CLEARINGHOUSE

September 28, 2020

Tammy Taylor, Environmental Planner
Marin County Community Development Agency
3501 Civic Center Drive, #308
San Rafael, CA 94903

Re: 2020090488, North Coast Land Holdings, LLC Community Plan Amendment, Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal Permit Project, Marin County

Dear Ms. Taylor:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Keifer
Luiseño

PARLIAMENTARIAN
Russell Attebery
Karuk

COMMISSIONER
Marshall McKay
Wintun

COMMISSIONER
William Mungary
Paiute/White Mountain Apache

COMMISSIONER
Julie Tumamait-Stenslie
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AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.

b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,

Nancy Gonzalez-Lopez
Cultural Resources Analyst

cc: State Clearinghouse

Meeting Notes

455 Capitol Mall, Suite 300
Sacramento, CA 95814
916-444-7301

Marin County North Coast Land Holdings Project
Scoping Meeting

May 18, 2021, 6:00 p.m. to 7:35 p.m

OVERVIEW

Marin County held a teleconference scoping meeting for the proposed North Coast Land Holdings Planning Application on the former Golden Gate Baptist Seminary Site (project). At the meeting, Ascent Environmental gave a presentation about the project and the California Environmental Quality Act (CEQA) process. After the presentation, the County accepted comments regarding the project and the scope of the Environmental Impact Report (EIR) to be prepared pursuant to CEQA. These meeting notes provide a summary of the verbal questions and comments provided by attendees during the scoping meeting.

COMMENTS

Richard Harris

- Commenter is disappointed that there is not an opportunity to see the number of participants, who they are, and their faces, which are elements envisioned under the Brown Act.
- Commenter and wife have lived on Richardson Drive for 34 years; commenter is also a former Board member and president of MMWD.
- The project affects MMWD's ability to provide water for consumption, fire, etc. The Countywide Plan recognizes that water supplies are insufficient to serve some areas of Marin in a normal rainfall year, and it goes on to say impact of that inadequacy is significant and unavoidable. The Countywide Plan also says that limits will be imposed on growth based on availability of services that cannot be distributed without limitation and conservation requirements.
- Two other factors impact the availability of water in Marin County. One is climate change. The Countywide Plan says climate change will amplify existing environmental problems. NOAA data also shows that, in the last 21 years, Marin County has experienced years of various kinds of drought. The second factor is development. Housing legislation currently under consideration has the potential to double population of Marin County. MMWD also declared water shortage, and there may be a moratorium of new water connections though it is unlikely due to their tentative financial status.
- The project will unquestionably impact an already inadequate water supply.
- If an impact can be demonstrated, does the County or Ascent have the authority to effectively overlook that impact? *(Ascent: The EIR is required to focus on significant impacts and also identify all feasible mitigation measures. The County then considers this and if it is determined that an impact is still*

significant, then it is significant and unavoidable. It does not mean the County cannot approve it. If they decide to approve the project, they will need to adopt overriding considerations, which are other factors that indicates that despite the impact, there are benefits and other factors that warrant its approval).

Paul Kayfetz

- Developer has been trying to finesse the project by claiming it is already permitted so it need not be evaluated. That will completely defeat consideration of traffic and other impacts, which will vary completely depending on nature of the institution. A count of 1,000 students and 200 staff communicating to the site in morning and out in the afternoon, according to traffic studies, will quadruple traffic load at the Blithedale Avenue/US 101 intersection.
- It is going to be completely inappropriate to accept developers' inclination and ignore the details of exactly what kind of school will be there and what the transportation implications are. It must be examined in detail; it cannot be finessed as being previously permitted and therefore not be considered.
- MMWD later this evening is considering a moratorium on new water connections and that would end this project for years. The EIR must seriously consider water and other implications as part of this process. Fines are already being imposed on users who are simply maintaining their landscaping. Why should this project be allowed when existing residents are being fined for maintaining their existing landscaping?

Patricia Albo

- The presentation slide said there is no change to the use permit of 1,000 students, even though North Coast went down to 700 students. The commenter asked for this to be addressed. *(Ascent noted there is no proposed change to the use permit maximum capacity, and EIR will be examining the appropriate baseline for evaluation.)*
- Is wildlife considered an issue in the EIR? *(Ascent confirmed it will be addressed in the EIR.)*
- Commenter submitted a prior comment via email, stating that the concern on traffic is with Seminary Drive and Strawberry Drive. It is pretty obvious Strawberry Drive cannot be widened. Commenter wanted to make sure that the EIR is not only looking at traffic impacts but also considering that from the stop sign to the first condominium building on the right during the winter at certain high tides it floods. Drivers in both directions are impacted, and the driver going toward Seminary must drive over the center line to avoid the pooled water. So, there is no immediate widening and no widening in the future.

Riley Hurd, Seminary Neighborhood Association

- Commenter submitted a detailed letter regarding the CUP.
- Regarding aesthetics, the site is highly visible, from US 101, Richardson Bay, Sausalito, GGNRA, Marin City, and there need to be view simulations of these. There are also Title 22 ridgelines (Seminary Point, Seminary Knoll).
- Regarding biological resources, the project site is a significant heron rookery.
- Regarding geology and soils, the Marin County GIS says the area is mostly landslides, with debris flow and a high liquefaction risk. The old Master Plan for the property required multiple landslides to be repaired and the commenter does not know if that has occurred.

- Regarding hazardous materials, there is a Phase I that identifies an underground storage tank that needs to be removed, as well as an abandoned hydraulic lift. The commenter is unsure if either have been removed.
- Regarding hydrology and water quality, the GIS system has never been updated to map streams on property. A previous biological study found several jurisdictional seepages on the site that need to be avoided.
- Regarding land use and planning, the project objectively violates the Strawberry Community Plan that calls for a self-contained seminary. It conflicts with the zoning code because RMP zoning requires a CUP for educational uses, and this use permit was superseded by the Master Plan. Even if it was not superseded, it had a specific description as a self-contained seminary. The commenter refers to a previous letter regarding vesting. The project also conflicts with Marin County single-family residence design guidelines.
- Regarding population and housing, there will be a significant impact with displacement of existing housing. There is a letter from County code enforcement noting the homes are rented out at below market prices, and the residents will be displaced; that has to be analyzed
- Regarding transportation, the EIR must evaluate hazards from inadequate roadway widths. Look at Reed Boulevard, it is an access point frequently utilized even though it was supposed to have a closed gate at the end.
- The appropriate baseline is nothing more than existing physical conditions. It is not the past, it is not the future, it is only right now and it is pretty low.

Bob Hendry

- Commenter is a resident of seminary drive. The commenter is happy to see the 1,000-student proposal is included in the study. There are a lot of assumptions, though, that someone is going to have to guess at, including staff, visitors, recreation, social activities because the developer has never outlined that out for anyone. Will the EIR state what those assumptions are? *(Ascent: the analysis in the EIR needs to be based on substantial evidence, and we pay close attention to legal requirements and so we will share whatever facts are underpinning the analysis, as well as any assumptions based on those facts).*

Doug Brown

- Commenter is a frequent bike rider on Seminary Drive and Strawberry Drive and wants to bring up the concern of safety for bike riders given the substantial increase in traffic if the project is approved, particularly from the freeway direction. What improvements will be made to seminary drive (e.g., widen it, install a bike lane) to make it safe for bike riders to share the road with these vehicles? Is there a possibility of some sort of shuttle service (e.g., electric buses) that will be less of a concern to all of us?
- Commenter understands main entrance is on the south side of the property, but there is also a road from the west from Seminary Drive. Commenter thinks if main entrance is further west that would minimize the impact on Strawberry Drive and is wondering if that entrance has been considered.
- During construction, the commenter is wondering what they will do to make traffic more manageable especially on Seminary Drive.

Jill Templeton

- Commenter has lived on East Strawberry Drive since 1958 and spent much of childhood playing with children who grew up at Baptist seminary.
- Commenter collected monarch butterflies because the site was an overwintering site, and wants the EIR to emphasize the historical perspective on biological resources.
- The site has unique geography and topography for Marin because it is surrounded on three sides tidal wetlands, includes habitat for overwintering insects and birds as they migrate in winter and spring.
- Commenter wants the baseline to consider prior conditions, not just current conditions.
- Commenter also wants to look for restoration in the new project scope.

Josh Andresen

- Commenter was a volunteer in Seminary Tomorrow process that met with developer.
- Regarding population and housing, the rents at the site are currently some of the lowest in the County and help meet local housing needs and reduce traffic. The developer would replace the housing with a smaller amount of affordable housing and more high-end units. The project will displace housing with faculty, students living offsite. Study net negative on affordable housing, regional housing, and traffic.
- This is a very large project, and community members have had issues understanding it. The commenter wants a 3D physical model of alternatives they can touch, feel, and understand.
- All universities expand, so whatever North Coast is proposing should also consider future development. It is reasonably foreseeable that North Coast will want to increase housing over time.
- Sea level rise is also reasonably foreseeable impacts as are drainage impacts on neighboring properties.
- Commenter provided assumptions that should be accounted for in traffic: 100 percent of student/faculty commute; large conferences and events (700 guests at peak afternoon commute); daily interaction with industry and increase traffic of 25 to 50%; courses open to general public; and general public access to library, cafeteria, art museum and other amenities.
- The developer proposed alternatives, so what is the approach and scope of the alternatives and how can public influence the alternatives? *(Ascent: The EIR must have a reasonable range of alternatives, which is not a specific number. The alternatives evaluation needs to include the No Project alternative. We look to define the alternatives in ways that meet the basic objectives of the proposed action and reduce one or more significant impacts as identified in the analysis. CEQA also requires identification of the environmentally superior alternative.)*

Josh Sale

- Ascent Contract describes collecting traffic baselines; how are those baselines developed in a pandemic when traffic patterns and life patterns are still atypical?
- Ascent Contract describes LOS analysis and 6 intersections but leaves out important intersections: Redwood Highway Frontage Road/Tiburon Boulevard, Redwood Highway Frontage onramp to US 101 South, Redwood Highway Frontage onramp to US 101 North.

- The primary entrance to the site is at Seminary Drive and Gilbert Drive, which is an unsafe intersection because of the forced left onto Gilbert. It is completely blind, so you can't see oncoming traffic and it seems inevitable that increased traffic will result in accidents due to poor sight lines.
- Commenter objects to how the meeting is being conducted. If there was not a pandemic, we could see who was there, and the list of participants should not be secret.

Chuck Ballinger

- Commenter is an adjacent neighbor on Ricardo Road.
- One hundred homes to be demolished are affordable housing by most logical standards because they are smaller, old, and have low rates. They should not be targets for demolition when more affordable housing is needed. But, since they are not official housing units, they fall through the cracks. Renovating instead of demolishing reduces materials that go into the landfill. Rebuilding is about making profits. What makes it worse is they get a density bonus for demolishing and building market rate units.
- If the EIR is perceived with any credibility, it should consider the waste of material gone to landfill so this developer can build housing.
- Planners should ask why they are proceeding with an EIR when the biggest entity (i.e., school) is not even specified.

Julie Brown

- Commenter has been a member of Design Review Board and Seminary Tomorrow.
- Commenter is saddened to share that the proposed project is not the project discussed in Seminary Tomorrow.
- Commenter seconds the request for physical models of this project and alternatives to scale. The CCRC alone is over 330,000 square feet, which is 2/3 the size of the Civic Center, which is only one component of this project, which totals over 1 million square feet. Looking at a physical model is the only way to understand physical impact.
- The project proposes separating ancillary housing from education facility. Commenter wants to make sure the County studies the drain on the local housing supply that 1,200 to 1,400 students will create when they cannot find housing on site.
- Explain how the developer will then be bound by EIR assumptions in initial phase and future phases as the project grows and continues to drain housing resources.

David Leimsider

- Commenter is a Strawberry resident and member of the Strawberry Community Association.
- Commenter requests that fiscal impacts: requests they be studied as part of this review, specifically impacts to parcel taxes. The applicant requests 486 housing units that currently sit on only 9 parcels of land. 486 units need services (e.g., fire department, schools, sewer), and those services are funded by parcel taxes that the proposal avoids paying because they would only pay taxes on the 9 parcels in existence today. If you do the math, it amounts to a $1.2 million per year recurring shortfall. It would lead to parcel tax increases on surrounding neighbors, which would essentially subsidize a wealthy land trust. The applicants should subdivide so each unit pays parcel taxes and their fair share.
- There is a long history of the seminary being on the property, and it was a closed environment with students living on campus. The commute impact was people walking from dorms. Any new school or

institution should have a similar setup, or the impact will be much greater than baseline. Students at the old seminary were often out of the country doing missions, and so the impact here for another type of school would be unlike prior impacts.

Rebecca Lind

- Commenter is a resident on Inez Place in Strawberry and also member of Design Review Board.
- The approach for the Community Plan Amendment, which is limited to strikeout, does not address the comprehensive nature of the kind of review that will need to be done to evaluate conformance with plans and policies. There are sections dealing with population and housing, transportation, community goals, etc., that need to be addressed. The Design Review Committee will need a comprehensive approach. The commenter will send in more-detailed written comment.

Justin Durack

- Commenter lives on Chapel Drive.
- The project would completely change the experience and what people love about being in Strawberry. There are birds chirping, deer wondering around, and it is hard to imagine how much it would be transformed. Egrets, heron, deer, hawks, quails, bald eagle; it feels like they are part of the community.
- Commenter is concerned about changes in noise level as well as traffic during construction and in general. Commenter is also concerned about traffic, especially bottlenecks. There would also be changes in light pollution due to exterior lighting. Changes to wildlife habitat and tree removal are a concern.
- With housing not dedicated to school, then the entirety of residents would be leaving community while the school community would be pouring in and maximizing traffic.
- Sensible mitigation includes drastically reducing number of new units or dedicating new housing for school only to reduce double load of traffic.
- It all adds up to well beyond a reasonable threshold for the current community.

Rusty Williams

- Commenter appreciates the community meetings, and the community is sincere about working with the County where everybody compromises. Commenter has lived on Chapel Drive for 24 years and have always expected some development in the area which is fine.
- In terms of considering effect on the environment, have you considered the effect of the distribution of housing? Not simply the number of units—which is an issue—but the distribution. Commenter is in one of two houses most directly affected by the plans and thinks there may be alternatives to distribution that may reduce traffic and environmental impacts.
- With respect to traffic flow, would it be better to have traffic go through the internal part of the campus rather than around the periphery when the peripheral roads are limited in how much they can be expanded?

Bruce Corcoran

- Commenter lives in Strawberry and has been reviewing plans at the seminary for 40 years. The 1953 use permit is for a seminary and uses associated with that. Commenter submitted detailed analysis of

1953 use permit that challenges vested right to 1,000-student institution. The plain reading of 1953 use permit shows that 1,000 students is not a condition.

- North Coast is once again launching a fight between districts in Marin County. Bruce Jones is in District 2 trying to force on District 3 an oversized project, just like "fiasco" with Branson. And, once again, we have a school with no dormitories, and this will cause traffic at Strawberry Drive/Tiburon Boulevard and up and down the US 101 corridor.
- The project is too large and has too many new uses.

Babette Bloch

- Commenter has been a resident on Ricardo Road since 1961.
- Commenter is particularly interested in location of senior facility. It seems to be way up on the hill, which looks utterly useless for the group they are trying to serve because the senior citizens would have to walk down the hill to do any walking in the neighborhood. To think people living in a senior facility do not drive is naïve.
- Commenter hopes planners will look at how many people will be staffing that facility; it takes a lot of staff particularly for assisted living.

Penna Omega

- Commenter is a resident since 1975 and went to Strawberry Point school and walked the streets that have no sidewalks. Commenter is now a homeowner and business owner in Strawberry Village and has been on the Design Review Board for the past 6 or 7 years. Commenter is surprised and shocked at how little the applicant has listened to the residents. They have tried to work with them and give them positive ideas they feel will benefit the community and it's being ignored, and that is problematic.
- The change to the Master Plan needs to be voted on by the residents in Strawberry so they have a say in what the Master Plan lan changes look like, how that impacts their visions for their own homes and their ADU ideas. It will also impact already the community and traffic. There is a lot of growth that is happening outside of seminary that impacts Strawberry, and the commenter wants the residents to have a voice.

Rona Weintraub

- Commenter is speaking because no one who lives on Seminary Drive has spoken; she lives in the condominium complex right across from the seminary. They have 72 homeowners who will be incredibly impacted by entire project; Seminary Drive is only two lanes, one way in each direction. It cannot be widened, and they will live through years of construction and then, after it is finished, a lot of traffic. They will be unable to get out of their own driveways.
- The project is too big for this area. Marin needs s senior center, but commenter is unsure this is the place because there is so little access. The preschool should probably stay. How can we possibly approve the school when we do not know what we are talking about when it comes to the school? The prior use never went near 1,000 students. It is going to be a nightmare.

MARIN COUNTY COMMUNITY DEVELOPMENT AGENCY

PUBLIC SCOPING SESSION
ENVIRONMENTAL IMPACT REPORT
NORTH COAST LAND HOLDINGS LLC PLANNING APPLICATION ON THE FORMER GOLDEN GATE BAPTIST SEMINARY SITE
May 18, 2021
6:00 pm to 8:00 pm

EIR PROCEDURAL INFORMATION

Purpose of the Scoping Session

The County is holding this public scoping session to facilitate maximum public participation in the development of an Environmental Impact Report (EIR) for the North Coast Land Holdings, LLC. Community Plan Amendment, Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal Permit project. This scoping session is being held pursuant to the California Environmental Quality Act (CEQA) to provide early consultation with the public on the EIR being prepared for the project. This early consultation is typically called scoping.

The purpose of this public scoping session is to provide individuals, organizations and agencies an opportunity to raise concerns about the environmental effects of the proposed project. Comments will be recorded and be made part of the formal EIR record. There are likely to be questions raised by speakers at the session, although in the interest of giving everyone a chance to speak, any questions asked will be responded to through the EIR process rather than at this meeting. Responses to comments and questions will not be provided at the scoping session since the purpose of the session is for the public to provide information to the County.

Comments must be limited to the scope of environmental effects to be studied, rather than commenting on the merits of the project at this time. CEQA defines environmental effects as direct, indirect, and cumulative impacts to the natural and man-made environment affected by the project. Effects analyzed under CEQA must be related to a physical change in the environment. (State CEQA Guidelines sections 15358 and 15360.)

Comment Procedure

In accordance with the current COVID-19 adaptive procedures, the scoping session will be held virtually via Zoom. The Zoom meeting details are included in the public notice of scoping session and on the environmental planning website, which is listed at the end of this procedures guide. During the virtual public scoping session, members of the public will have the opportunity to speak their comments, which will be recorded and posted on the environmental webpage for this project. Those wishing to speak will need to indicate so during the course of the meeting by either using

the "Raise Hand" button, or if you choose to call in to the Zoom meeting, press *9 to inform the moderator that you would like to comment.

In anticipation of a good turnout and limited time, and in order to allow everyone an equal opportunity to speak, each speaker will be limited to three minutes, more or less, depending upon the number of speakers in the queue. Members of organizations are encouraged to select a spokesperson from the organization to speak on the group's behalf to avoid repetition of the same concerns.

Following the scoping session, written comments about the scope of the environmental report will be accepted until **4:00 p.m.** on **Tuesday, May 25, 2021**. Please submit written comments that you have on the scope of the EIR to County staff by email prior to the May 25, 2021. Comment letters and/or emails should clearly identify the subject of the comments as the Scoping Session for the North Coast Land Holdings, LLC. EIR. Commenters are advised to mail written comments postmarked on or before May 25, 2021 to the attention of Rachel Reid, Environmental Planning Manager at 3501 Civic Center Drive, Suite 308, San Rafael, CA 94903. Comments are also encouraged to be submitted via email to envplanning@marincounty.org before the end of the comment period deadline.

Other Opportunities for Public Comment

The public will have additional opportunities to comment during the EIR process and hearings on the merits of the proposed project. Updates will be emailed to everyone who subscribes to the environmental webpage for the project. Please visit the environmental project page listed below and click on “subscribe to this page” in order to receive email updates:
https://www.marincounty.org/depts/cd/divisions/environmental-review/current-eir-projects/north-coast-land-holdings-llc

More information about the project application is available online at:
http://www.marincounty.org/depts/cd/divisions/planning/projects, where projects are listed for the Alto/Strawberry area.

Appendix B

Visual Resources Technical Report

Visual Resources Analysis
North Coast Land Holdings, LLC. Community Plan Amendment Master Plan, Design Review, Vesting Tentative Map, Master Use Permit, and Tree Removal Permit Project

Prepared by: 2M Associates
Prepared for: Ascent Environmental
January 22, 2024

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1.0 INTRODUCTION

This report discusses the existing visual quality of the North Coast Land Holdings, LLC. Community Plan Amendment Master Plan, Design Review, Vesting Tentative Map, Master Use Permit (the Project) site and evaluates the potential impacts on aesthetics from implementation of the Project. The impacts associated with the proposed Project are compared with the thresholds of significance adopted by the California Environmental Quality Act (CEQA). This report also provides discussion of the applicable Marin County policies that regulate aesthetics and consistency of the Project with those policies and guidelines.

1.1 Project Description

This report is based on the based on the Draft Project description for the County of Marin and on the following design documents provided by North Coast Land Holdings, LLC.

- Architectural, planning, and site master plan drawings by Mark Cavagnero Associates dated January 31, 2020.
- Civil engineering and grading plans by CSW / Stuber-Streek Engineering Group, Inc dated January 31, 2020.
- Landscape plans by SWA, dated January 31, 2020.
- An amended architectural site plan with elevations, models, and floor plans for three six-story apartment buildings at northwest corner of Hodges Drive and Shuck Drive dated April 11, 2023.

Additionally arborist reports by Macnair & Associates dated August 20, 2015 and February 5, 2020 were referenced for the analysis.

1.2 Definitions

Aesthetics

Aesthetics refers to the nature and appreciation of beauty in both form and appearance as perceived through the visual sense only. Aesthetic resources include the visual character and quality of an area, consisting of both the landscape features and the social environment from which it is viewed. Aesthetic resources include, but are not limited to:

- Federal, state, and local designated scenic resources
- Places of cultural importance, such as traditional cultural properties
- Designated federal, state, and local historic properties
- Areas of high visual quality (e.g., scenic vistas, scenic hiking trails, and scenic highways)
- Recreation and open space areas that attract users with sensitivity to visual quality
- Landscape features, including ridgelines, mountains, and the vegetative mosaic
- Dark night skies

Visual Quality

Visual quality is defined as the overall visual impression or attractiveness of an area as determined by its particular landscape characteristics, including landforms, rock forms,

water features, and vegetation patterns. The viewer attributes of natural harmony, orderliness, and coherence contribute to the overall visual quality of a setting.

Viewer Sensitivity

Viewer sensitivity is a composite measurement of the overall susceptibility of a viewer to adverse visual or aesthetic impacts, given the combined factors of the visual quality of the characteristic landscape, affected population, viewer exposure, and viewer awareness of the visual impact. Viewer sensitivity considers whether the general public, when seeing the Project, is engaged in an active (e.g., soccer) or passive (e.g., bird-watching) activity. Viewer sensitivity often is reflected according to high, moderate and low visual sensitivity ranges.

Viewer Exposure

Viewer exposure addresses the variables that affect viewing conditions from potentially sensitive areas. Viewer exposure considers the following factors:

- **Landscape Visibility.** The ability to see the majority of the Project site as a whole or see only selected features of the Project site because they are screened by existing topography, vegetation, or structures.
- **Distance Zones.** The proximity of viewers to the Project site. Distance zones are measured from one static point, such as the location of a key view. There are four defined distance zones:
  - **Immediate Foreground:** properties and streets that are immediately adjacent to the Project site
  - **Foreground:** 0.25-0.5 mile from the viewer
  - **Middleground:** 0.5 to 2 miles from the viewer
  - **Background:** beyond 2 miles from the viewer

  Figure V-1 illustrates the distance zones relative to the Project site.
- **Viewing Angle.** Considers whether the Project site would be viewed from above (superior), below (inferior) or from a level (normal) line of sight. If along a street or path, consideration is given to whether the Project site is in the direct line of sight or at an acute angle relative to the direction of travel. Viewing angle also affects whether project components include a backdrop or are silhouetted against the sky.
- **Extent of Visibility.** Considers the relative location of the Project site to the viewer and whether visibility conditions are open, framed, or limited by intervening vegetation, structures, or terrain; additionally whether the view is part of a larger panorama.
- **Duration of View.** Pertains to the amount of time the Project site would typically be seen from a sensitive viewpoint. In general, duration of view, and hence impact, would be less in instances where the Project would be seen for a short period while traveling (0 to 10 seconds), moderate or intermittent period when traveling (up to a minute), or would be seen as a constant from a stationary position condition such as from public gathering area, vista point, park, or trail.

VISUAL IMPACT ASSESSMENT

North Coast Land Holdings, LLC. Community Plan Amendment Master Plan, Design Review. Vesting Tentative Map, Master Use Permit. and Tree Removal Permit Project

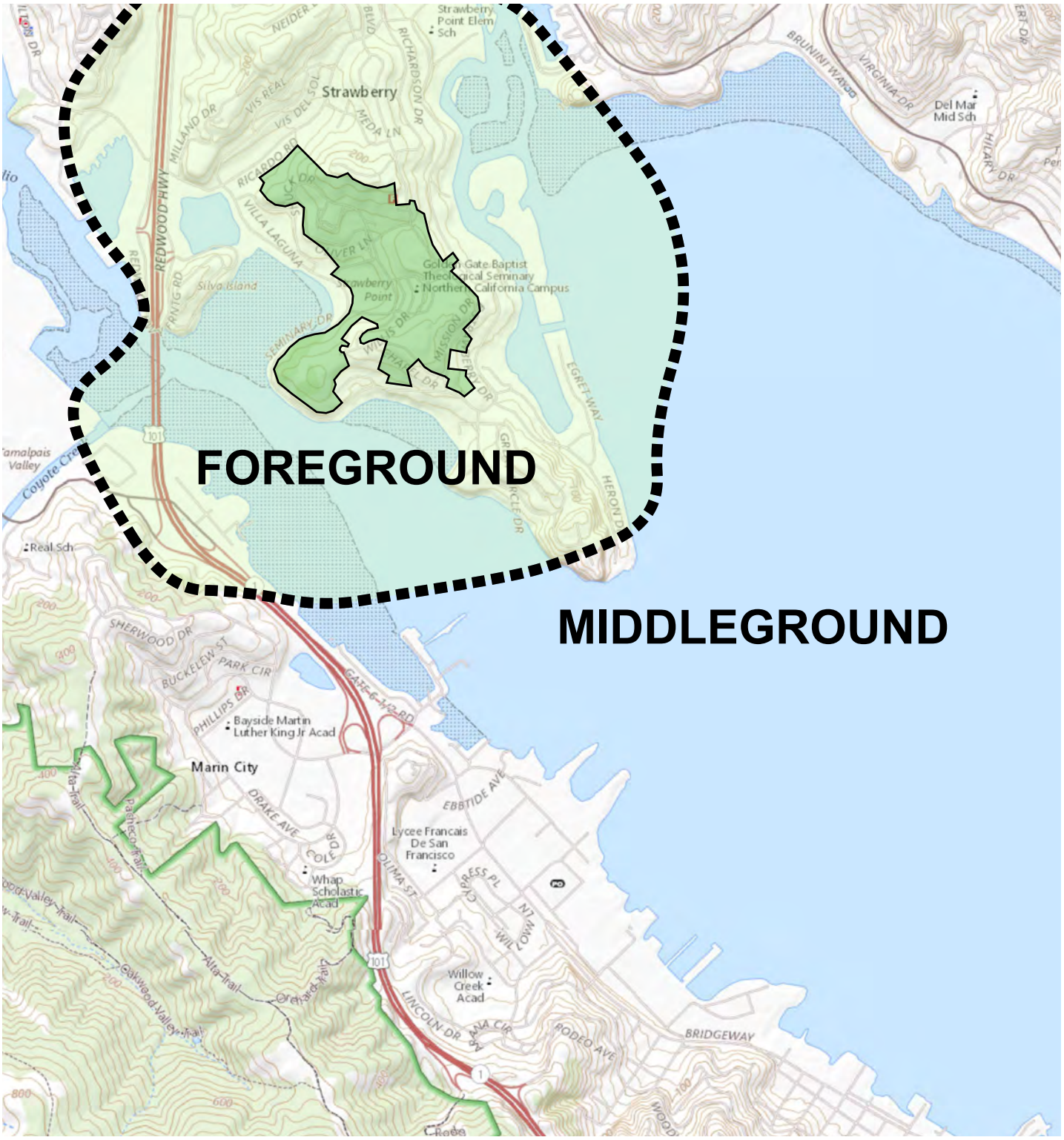

Figure V-1

DISTANCE ZONES

SEE TEXT FOR EXPLANATION

Scale
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North

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1.3 Impact Assessment Methodology

Field reconnaissance of the Project site was conducted on June 15, 2021, June 16, 2021, and September 9, 2021. The impact assessment employed a line-of-sight analysis to consider the net visual effects that would result from implementation of the Project as seen from publicly accessible locations within the Strawberry Peninsula and from the surrounding areas.

The assessment was conducted according to generally accepted industry practices. The primary existing visual condition factors considered in this section include:

- Visual quality of the existing landscape
- Affected population
- Viewer exposure
- Viewer sensitivity

The impact assessment was conducted according to industry standard methodologies for characterizing the aesthetic setting and impacts of the Project. Appropriate to this Project are the Federal Highway Administration's visual impact assessment guidelines (2015) that address compatibility of impacts, distance zones, the sensitivity of the viewers, and how changed conditions affect the natural harmony, cultural order, and coherence of the characteristic landscape. The assessment considers changes in visual character looking at the Project site from the surrounding road network, parks, and trails.

The assessment included identification of representative Key Observation Point (KOP) locations from which a viewer would see the Project. Selected KOPs were used to produce photo simulations representative of the visual change that would result with the development of the Project without mitigation.

Photographs were taken using a digital single-lens reflex (SLR) camera with standard 50-millimeter lens that represents an approximately 40-degree horizontal view angle. Photography viewpoint locations were documented in the field using photo log sheet notation, global positioning system (GPS) recording, and base map annotation. Digital aerial photographs and Project design information supplied by the Project proponent provided the basis for developing three–dimensional computer modeling of the Project components. For each simulation viewpoint, viewer location was input from GPS data using 5 feet as the assumed eye level. Computer "wireframe" perspective plots were overlaid on the simulation photographs to verify scale and viewpoint location. Digital visual simulation images were then produced based on computer renderings of the three-dimensional modeling combined with selected digital site photographs.

1.4 Scoping Comments

A number of comments were submitted through the Notice of Preparation process about visual resources related to the Project's impact on natural harmony, orderliness, and coherence. The significant areas of expressed visual concern are:

- Consistency with the policies of the Strawberry Community Plan.
- The preservation of key visual landmarks including local ridgelines, the forested Seminary Point, and Chapel Hill.
- Visual compatibility with surrounding neighborhood character.

- Extent of grading.
- Size/bulk of the proposed residential care facility.
- General visibility particularly from Richardson Bay, Highway 101, and public park, recreation, and open space lands.

2.0 EXISTING SETTING

2.1 Key Observation Points

Visual conditions, viewer experience, and viewer response to visual change are studied in the environmental review process through the identification and selection of the most critical and representative public viewpoints of a project, referred to as Key Observation Points (KOPs).

KOPs serve as the basis for the subsequent assessment of visual impacts after determining the visual quality of the Project site. Key views are representative of the range of views that would be affected by the Project. These representative views are selected to catalog an image of critical baseline conditions that were used to assess the visual impacts of the Project.

Twenty-five KOPs were used to evaluate the existing visual quality of the Project site and visual impacts of the Project. Figure V-2 illustrates the locations of each KOP.

Table V-1 keys to Figure V-2 and lists each KOP and describes its general characteristics in terms of the following viewer exposure considerations:

- Proximity / Distance Zone
- Landscape Visibility
- Viewing Angle
- Extent of Visibility
- Duration of View
- Viewer Sensitivity

KOPs used for the preparation of photo-realistic visual simulations are indicated with an asterisk (*).

VISUAL IMPACT ASSESSMENT

North Coast Land Holdings, LLC. Community Plan Amendment Master Plan, Design Review. Vesting Tentative Map, Master Use Permit. and Tree Removal Permit Project

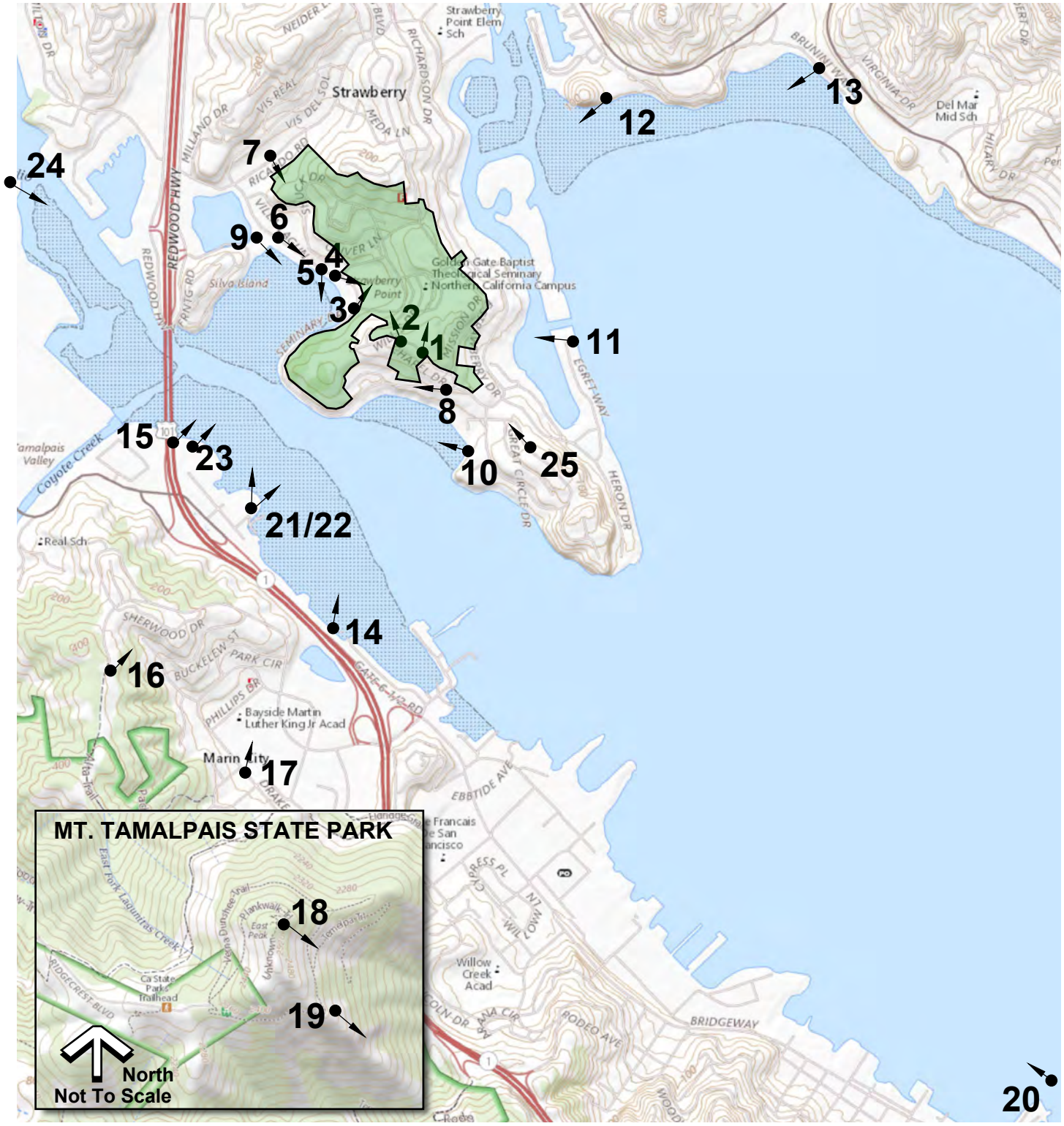

Figure V-2

KEY OBSERVATION POINTS

SEE TEXT FOR EXPLANATION

Scale
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North

DATE: 1-22-24

Table V-1: Key Observation Points

KOP ID #	Proximity / Distance Zone	Landscape Visibility	Viewing Angle	Extent of Visibility	Duration of View	Viewer Sensitivity (General Public)
1	**Chapel Drive: On the sidewalk in front of the residence at 125 Chapel Drive. View Direction: North toward Chapel Hill.**					
	Immediate Foreground	Moderate	Inferior / 45° Angle	Open	Short to Moderate	Moderate
2*	**Chapel Drive: On the sidewalk across from the residence at 141 Chapel Drive. View Direction: North over the playing field toward the center of the Project site and Shuck Knoll.**					
	Immediate Foreground	High	Superior / 90° Angle	Filtered to Open	Short to Moderate	Moderate
3*	**Seminary Drive: On the sidewalk opposite to the Gilbert Drive intersection. View Direction: Northeast toward the playing field.**					
	Immediate Foreground	High	Normal / 45° Angle	High	Short to Moderate	Moderate to High
4	**Seminary Drive: On the sidewalk at the driveway entrance to 150 Seminary Drive. View Direction: Northeast toward the playing field.**					
	Immediate Foreground	High	Normal / Direct	Open	Moderate	Moderate to High
5	**Seminary Drive: On the sidewalk near the pedestrian path along the bay shore behind 150 Seminary Drive. View Direction: South to Seminary Point.**					
	Immediate Foreground	Moderate to High	Normal / Direct	Open / Panorama	Moderate	Moderate
6	**Seminary Drive: On the street adjacent to 110 Seminary Drive and Strawberry Shores Apartments. View Direction: Southeast funneled view to Chapel Hill above the playing field but screened by existing trees.**					
	Foreground	Low to Moderate	Normal / Direct	Framed	Moderate	Moderate
7	**Ricardo Drive: On the sidewalk opposite the residence located at 301 Ricardo Drive. View Direction: Southeast to forested side of Shuck Knoll.**					
	Foreground	Moderate	Normal / 60° Angle	Limited	Short	Moderate
8*	**Seminary Drive: Approximately 150 feet west from intersection with Chapel Drive. View Direction: West with view focused on the forested hill.**					
	Foreground	Moderate	Normal / Direct	Framed	Short	Low to Moderate
9	**Strawberry Cove Park: From edge of developed playground / picnic area. View similar to KOP #5. View Direction: Southeast toward forested knoll.**					
	Foreground	Moderate	Normal / Direct	Open / Panorama	Stationary	High

Table V-1: Key Observation Points

KOP ID #	Proximity / Distance Zone	Landscape Visibility	Viewing Angle	Extent of Visibility	Duration of View	Viewer Sensitivity (General Public)
10*	**Brickyard Park: From edge of developed playground / picnic area. View Direction: West directly toward forested Seminary Point**					
	Foreground	Low to Moderate	Normal / Direct	Open / Panorama	Stationary	High
11	**Shoreline Access Path: At end of Egret Way. View Direction: West over houses to existing Chapel Hill development. General orientation is to the east and Richardson Bay.**					
	Foreground	Low	Inferior / Direct	Limited	Stationary	High
12	**Interpretive Overlook; Richardson Bay Audubon Center & Sanctuary. View Direction: Southwest to east side of existing Chapel Hill development.**					
	Middleground	Low	Inferior / Direct	Open / Panorama	Stationary	High
13	**San Francisco Bay Trail / Tiburon Old Rail Trail: On path across from restrooms. View Direction: West to east side of existing Chapel Hill development. Similar to KOP #12.**					
	Foreground	Moderate to High	Inferior / 90° Angle	Open / Panorama	Stationary	High
14*	**San Francisco Bay Trail / Mill Valley – Sausalito Path: On path approximately 750 feet northwest of public parking area. View Direction: Northeast to Seminary Point and Chapel Hill. Seminary Point screens the Shuck Knoll area.**					
	Middleground	High	Normal / 90° Angle	Open / Panorama	Moderate to Constant	High
15	**Highway 101: Traveling north on bridge just past the Shoreline Office Center structures. View Direction: East at an acute angle to the direction of travel.**					
	Foreground	High	Normal / 30° to 90° Angle	Open	Moderate	Low to Moderate
16	**Golden Gate National Recreation Area, Alta Trail: Approximately 350 feet from the trail entrance at the Donahue Street staging area. View Direction: Northeast.**					
	Middleground	Low	Superior / 45° Angle	Limited	Short to Moderate	High
17*	**Drake Avenue: On sidewalk at crest of street. View Direction: North.**					
	Middleground	Moderate to High	Normal / 90° Angle	Open / Panorama	Short to Moderate	Moderate to High
18	**Mount Tamalpais State Park: At the base of fire tower lookout on the east side. View Direction: Southeast.**					
	Background	Moderate	Superior / Direct	Open / Panorama	Stationary	High
19*	**Mount Tamalpais State Park: At the Verna Dunshee Trail Overlook. View Direction: Southeast.**					

Table V-1: Key Observation Points

KOP ID #	Proximity / Distance Zone	Landscape Visibility	Viewing Angle	Extent of Visibility	Duration of View	Viewer Sensitivity (General Public)
	Background	High	Superior / Direct	Open / Panorama	Stationary	High
20	**Richardson Bay Shoreline: Public access pier adjacent to The Spinnaker. View Direction: Northwest toward forested knoll. Remainder of site not in view. Similar view from dining areas inside restaurant.**					
	Background	Low	Inferior / Direct	Limited	Stationary	High
21	**Richardson Bay Shoreline: At parking area off Salinas Street and Seaplane Adventures. View Direction: North toward Shuck Knoll area with Watertank Hill in background.**					
	Foreground	High	Inferior / Direct	Open / Panorama	Stationary	Low
22	**Richardson Bay Shoreline: Behind parking area off Salinas Street and Seaplane Adventures. View Direction: Northeast toward forested knoll and Chapel Hill.**					
	Foreground	High	Inferior / Direct	Open / Panorama	Stationary	Low
23*	**Richardson Bay Shoreline: Shoreline public access point adjacent to Shoreline Office Center. View Direction: Northeast to forested knoll and Shuck Knoll area. Similar view to KOP #15 and what kayaks / boats would see from the water.**					
	Foreground / Middleground	High	Inferior / Direct	Open / Panorama	Stationary	High
24	**San Francisco Bay Trail / Mill Valley – Sausalito Path: At Bothen Marsh Preserve across from Almonte Boulevard parking area. View Direction: Southeast toward forested knoll. Highway 101 bridge partially blocks view.**					
	Middleground	Low	Inferior / 45° Angle	Limited	Moderate to Stationary	High
25*	**Great Circle Drive. View Direction: Northwest toward Chapel Hill.**					
	Foreground	High	Superior	Focused	Short	Moderate

*** KOP selected for visual simulations**

KOP #1: Chapel Road looking north (Photo date: June 15, 2021)

KOP #2: Chapel Road looking north (Photo date: June 16, 2021)

KOP #3: Seminary Drive looking northeast (Photo date: June 21,2021)

KOP #4: Seminary Drive looking southeast (Photo date: June 21,2021)

KOP #5: Seminary Drive looking south (Photo date: June 21, 2021)

KOP #6: Seminary Drive looking southeast (Photo date: June 16, 2021)

KOP #7: Ricardo Road looking southeast (Photo date: June 21, 2021)

KOP #8: Seminary Drive looking west (Photo date: June 15, 2021)

KOP #9: Strawberry Cove Park looking southeast (Photo date: June 15, 2021)

KOP #10: Brickyard Park looking northwest (Photo date: June 21, 2021)

KOP #11: Shoreline Access Path looking west (Photo date: June 15, 2021)

KOP #12: Richardson Bay Audubon Center & Sanctuary looking southwest (Photo date: June 15, 2021)

KOP #13: San Francisco Bay Trail / Tiburon Old Rail Trail looking west (Photo date: June 15, 2021)

KOP #14: San Francisco Bay Trail / Mill Valley – Sausalito Path looking northeast (Photo date: June 15, 2021)

KOP #15: Highway 101 looking northeast (Photo date: June 16,2021)

KOP #16: Golden Gate National Recreation Area, Alta Trail looking northeast (Photo date: June 15, 2021)

KOP #17: Drake Avenue, Marin City looking northeast (Photo date: June 15, 2021)

KOP #18: Mount Tamalpais State Park at base of fire tower looking southeast (Photo date: June 16, 2021)

KOP #19 Verna Dunshee Trail Overlook, Mount Tamalpais State Park looking southeast (Photo date: June 16, 2021)

KOP #20: Public access pier adjacent to The Spinnaker restaurant looking northwest (Photo date: September 9, 2021)

KOP #21: Shoreline off Salinas Street and Seaplane Adventures looking north (Photo date: September 9, 2021)

KOP #22: Shoreline off Salinas Street and Seaplane Adventures looking northeast (Photo date: September 9, 2021)

KOP #23: Richardson Bay looking northeast (Photo date: September 9, 2021)

KOP #24: Mill Valley – Sausalito Path, Bothen Marsh Preserve looking southeast (Photo date: September 9, 2021)

KOP #25: Great Circle Drive looking northwest (Photo date: September 9, 2021)

2.2 Topography and Local Ridgelines

Attachement A presents the planning areas of the Project. As illustrated in Figure V-3, there are a series of local ridgelines that play an important role in defining the Project site, its planning areas, and how they are viewed. At an elevation of approximately 190 feet, the central point on the Project site is Chapel Hill. From Chapel Hill local ridgelines extend:

- South to Strawberry Point with a break through a saddle where Seminary Drive transitions into Strawberry Drive.
- West to the forested Seminary Point (approximate elevation 125').
- North through the Campus to a saddle composing Dormitory Hill (approximate elevation 115') then up to near Richardson Drive residences (approximate elevation 250') and then arching west down to Schuck Knoll (approximate elevation 110').

Visually, a series of minor local ridgelines further divides the Project site. Because of its location surrounded on three sides by Richardson Bay, Seminary Point is the most prominant visual natural feature of the Project site.

The topography and local ridgelines tend to control views into the Project site such that the entire Project site is generally not visible from any one surrounding location. This is particualrly true from the immediate foreground and foreground distances. Because of the topography the major portion of the Project site is only visible from the southwest and west.

2.3 Characteristic Landscape

The Project site generally encompasses the middle portions of the Strawberry Peninsula. The lands surrounding the Project site are fully developed visually by single family homes, duplex homes, apartments, and condominiums.

As shown on Figure V-4, the Project site can be visually characterized in five landscape units with similar qualities of harmony, cultural order, and coherence. A description of each and its corresponding planning unit follows.

1. Seminary Point / Forested Knoll: A significant natural feature of the Project site and of the Strawberry Peninsula. A singular forest dominates and provides a high degree of harmony and natural coherence extending down to the Richardson Bay shoreline. Existing housing development along the extended Chapel Drive within the Project site is visually camouflaged due to relatively dark architectural colors and screening by the forest. (Planning Area #7 - Seminary Point / Forested Knoll).

2. Chapel Hill Park: A southwest-facing slope, consisting of a band of sparse trees at the top of the area along Chapel Drive with denser forest and shrubland vegetation toward the bottom along Seminary Drive. An open grassland is located mid-slope. The park provides a harmonious foil of undeveloped lands that contrasts with the lack of order seen in the pattern, color, and textures of surrounding private residences. (No improvements proposed in this landscape unit).

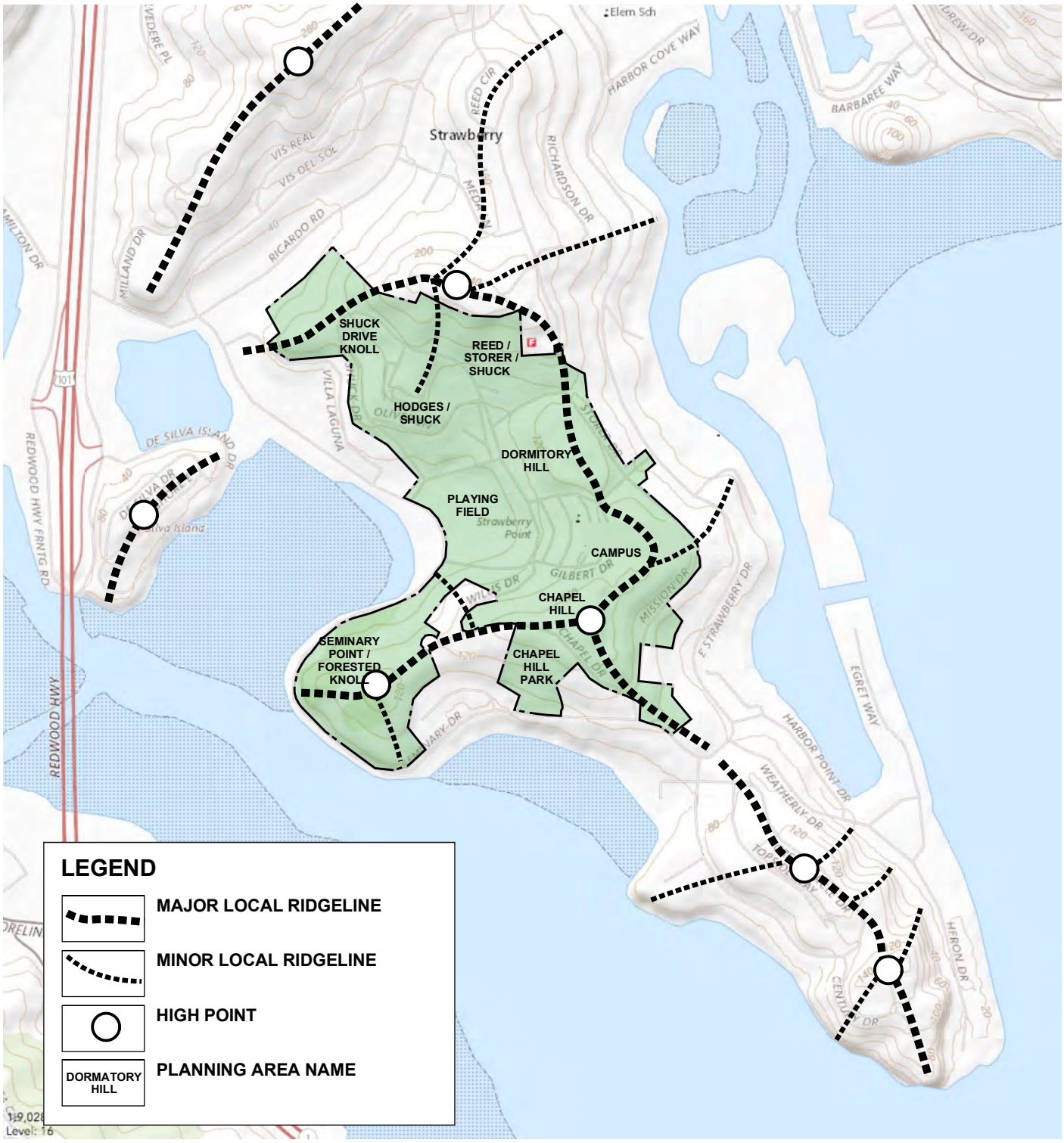


FIGURE V-3

LOCAL RIDGELINES AND PLANNING AREAS

SEE TEXT FOR EXPLANATION

Scale
0' 300' 1500'

North

DATE: 1-22-24

3. Playing Field: A bowl-like setting with irrigated turf surrounded by forest vegetation. Views to and within the area are partially contained by topography and perimeter vegetation. (Planning Area #3 - Seminary Playing Field.)

4. Academic Campus / Chapel Hill: A developed landscape with a moderate degree of cultural order and coherence created by disparate elements of streets, terraced parking, campus academic structures, and graded landforms of Chapel Hill. (Planning Area #1 - Academic Campus; and Planning Area #2 - Chapel Hill.)

5. Dormitory Hill to Schuck Knoll: A partially developed landscape visually consisting of the open grasslands and graded landforms visually punctuated by sparse low-profile structures, among clustered tree groupings and individual trees. The overall visual character of the area presents a moderate degree of cultural order, harmony, and coherence. Private residential structures at the top of the slopes to the north and the colors and bulk of the fire station contribute to the lack of overall harmony and coherence. (Planning Area#3 - Dormitory Hill; Planning Area #4 - Hodges/Shuck; Planning Area #5 - Mission Drive; and Planning Ara #6 - Reed/Storer/Shuck.)

Visually the area surrounding the Project site presents a predominantly developed residential landscape. Development occurs from the peninsula's local ridgelines to the edges of Richardson Bay. The overall visual character of these areas presents a moderate degree of cultural order, harmony, and coherence.

High density apartment complexes are located along Seminary Drive, including Strawberry Shores and Harbor Point Apartments. The large bulk appearance of these structures visually contrasts with the finer visual texture presented by surrounding individual residences. This contrast tends to reduce the harmony and coherence of the area as a whole. Relatively large duplex houses occur within Strawberry Cove at the base of Seminary Point and Chapel Hill with a similar, yet not as contrasting, effect. The remaining residential development consists of moderate to relatively large, single-family homes.

The predominantly concrete Station #9 of the Southern Marin Fire District and its communications tower located above Dormitory Hill is visible in the immediate surrounding foreground area of the structure and the middleground as seen from the east presenting a bulk and form not typical of the surrounding residences.

Architectural styles and colors of the development surrounding the Project site vary widely. Generally light-valued colors on structures stand out and dark-valued colors on structures visually recede. Such is the case with many of the exiting structures within the Hughes-Shuck Planning Area or those on Seminary Point that tend to not be readily noticable. Ridgeline development within and around the Project site generally parallels the natural ridgeline contours. The majority of rooflines, with a few exceptions, do not visually extend above the natural ridgeline. Most of those that do are surrounded by landscaping that projects above the structures and provides a more natural edge as seen against the open sky backdrop.

The majority of vegetation within and around the Project site is ornamental with a wide variety of species present. However, within the Project site a number of native oaks exist. Significant

forest stands exist: on Shuck Knoll and behind the residences along Ricardo Road; around the playing field; from the west side of the campus extending to Seminary Point; and on the lower portions of Chapel Hill Park.

Where available, virtually all development is oriented to take advantage of views to Richardson Bay, surrounding shoreline cities, San Francisco, Mount Tamalpais State Park, and the open space lands of the Marin Municipal Water District and the Golden Gate National Recreation Area.

2.4 Visibility

Visibility into the Project site and proposed facilities is generally greatest from the west and southwest from adjacent streets, Richardson Bay, and looking over Richardson Bay from Sausalito and Marin City. Views from Tiburon are limited to the immediate crest of the ridgeline between Chapel Hill and Dormitory Hill.

The following descriptions present the principal views to the Project site available to the general public from the surrounding street network, parks, trails, and Richardson Bay.

Immediate Foreground Views

Other than those within the site boundaries, the Project site is not seen by the general public from most of the surrounding neighborhood streets due to topography, existing development, and vegetation.

Along Chapel Drive (KOP#1) there is a direct view to the existing open contoured grasslands of Chapel Hill. West of the crest of Chapel Drive (KOP #2) is an expansive view north toward Shuck Knoll overlooking the playing field. Visually dominant structures are the residences in the backdrop along Richardson Drive projecting above the ridgeline and the Southern Marin Fire District station. The primary view orientation of most of the single family residences along Chapel Drive is south toward Richardson Bay away from the Project site.

Views from Seminary Drive immediately adjacent to the Project site (KOP #3, KOP #4) when traveling in either direction focus on the park-like setting of the playing field and redwood grove. Existing mature trees surrounding the open playing field on the east side screen the majority of structures on Dormitory Hill and the parking lots and structures of the main campus.

Foreground Views

Views to the Project site are available from the following streets: Seminary Drive, Chapel Drive, Willis Drive, Ricardo Drive, and a short segment of Great Circle Drive. Portions of the Project site area are seen from Strawberry Cove Park, Brickyard Park, and the Shoreline Access Path near Egret Way.

Approaching the Project site on Seminary Drive from Ricardo Road, the first open view to the Project site (KOP #9) is over Strawberry Cove Park to the forests of Seminary Point. While the skylined roofs of residences along Campus Drive and the horizontal roofline of the existing

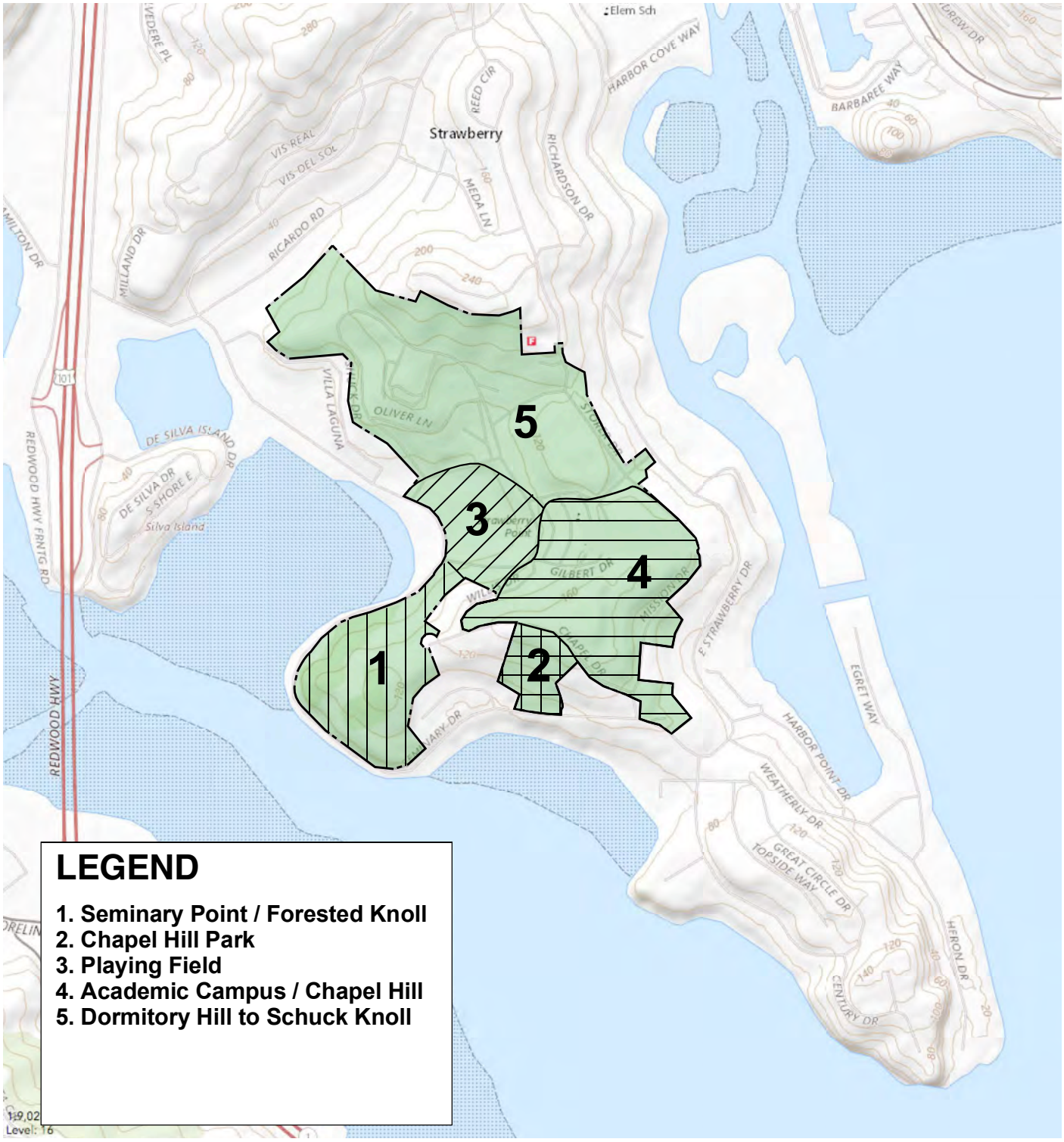


FIGURE V-4

CHARACTERISTIC LANDSCAPE UNITS

SEE TEXT FOR EXPLANATION

Scale
0' 300' 1500'

North

DATE: 1-22-24

multi-family housing on the point are visible, their presence is subservient to the forest and the visually dominant bay edge and marshlands at the base of the hill.

As Seminary Road bends toward the Project site (KOP #6), a funneled view to the Project site's forest above the playing field is created by three- story condinium buildings on either side of the road. A break in the corridor view is provided (KOP #5) by views to the south over bay marshlands to the forested knoll. The forest gnerally screens housing located on Chapel Drive and on the slopes of the knoll.

From Ricardo Street (KOP #7), the Project site sits above continuous single family houses backdropped by the woodland buffer area of the Project site. The houses dominate the view from the street with PG&E utillity lines visible parallel to the back property line of the houses. The forest and topography limit views into the Project site and existing dormitory devlopment in the Hodges/Shuck Planning Area.

From Seminary Dirve (KOP #8) traveling north there is a direct view focusing on the forested Seminary Point. A similar view exists from Brickyard Park (KOP #10). Dominant visual features are: the rounded forested knoll; duplex houses along Seminary Cove, and the shoreline edge.

Only a small portion of the Project site along the Dormitory Hill and Campus ridgeline is seen from the south and east. In the foreground from the shoreline park at the end of Egret Way (KOP #11) only the rooflines of the existing campus administration and classoom buildings are visible. Though seen, they are in the backdrop and essentially extend the roofline view of the houses along Egret Way. Also, the entire orientation of the hourses along Egret Way, the park, and the trail is to the east toward the Bay and the Tiburon peninsula, looking away from the Project site.

A brief view to Chapel Hill and the Administrative buildings exists when traveling north on Great Circle Drive (KOP #25). The horizontal character of the graded open space and building rooflines contrasts with the backdrop of the Mount Tamalpais East Peak ridgeline.

Principal visibility to the expanse of the Project site is afforded with a continuous view from the south and southeast from Richardson Bay itself or looking over Richardson Bay from Highway 101 traveling north (KOP #15), and from the Francisco Bay Trail /Mill Valley – Sausalito Path (KOP #21, KOP #22) and shoreline (KOP #23). Views for kayakers and other boaters in Richardson Bay would be similar to KOP#23. Looking toward the Project site, the most prominent natural features are Richardson Bay itself, the opposite Richardson Bay shoreline, the forested knoll, grasslands of Shuck Knoll, the woodland buffer and the grasslands of Watertank Hill or the Ring Mountain Preserve in the background. The bulk of condominiums and duplex housing along Seminary Drive visually contrast with the forest surrounding them.

Middleround Views from the East

Views to the Project site from Tiburon Boulevard (State Route 131), the San Francisco Bay Trail / Tiiburon Linear Park, and other public spaces (KOP #12, KOP #13) are limited to the Chapel Hill and Dormitory Hill ridgelines. The campus library, cafeteria, and dormitory residences are visible. The rooflines of the structures are generally horizontal and parallel the ridgeline.

However the scale of the structures is relatively large as compared to the texture of the surrounding residences.

Middleground Views from the West and South
Views to the Project site from Bridgeway and downtown Sausalito are predominantly blocked by development along Bridgeway or, as in the case of Dunphy Park, strongly screened by boats and masts. The forested Seminary Point can be seen as a component of the development in Strawberry and Tiburon from the public pier adjacent to The Spinnaker (KOP #20). However, the features that dominate the view are Richardson Bay and the East Peak of Mount Tamalpais State Park.

From the crest of Drake Avenue in Marin City (KOP #17) a view includes the forested knoll, Chapel Hill Park, the Chapel Hill Planning Area, and the Reed Storer/Shuck Planning Area of the Project with Ring Mountain Preserve in the backdrop. Numerous rooftops in the foreground on the streets below and residences along Seminary Avenue, Campus Drive, and Richardson Drive punctuate the view. A similar view, but one filtered by trailside vegetation, exists from Alta Trail in the Golden Gate National Recreation Area (KOP #16). The higher in elevation on the trail system the more of the Project site is visible.

Views to the Project site as seen from Richardson Bay and its margins to the west of Highway 101 (KOP #24) are limited to Seminary Point and are filtered and dominated by the highway bridge itself and north shoreline commercial development. Views to the remainder of the Project site are blocked by the topography of de Silva Island,

Views from the North
Views into the Project site from the ridge along Richardson Drive and Milland Drive are generally blocked by residences. Some of the forest buffer on the north side of Shuck Knoll is seen from Richardson Drive.

Background Views from Mount Tamalpais State Park
A 270° panorarmic view extending from the Pacific Ocean to San Pablo Bay is available from East Peak of Mount Tamalpais State Park. The Project site can be seen to the southeast from both the top of the mountain around the fire lookout (KOP #18) and the Verna Dunshee Trail Overlook (KOP #19).

3.0 REGULATORY SETTING

3.1 STATE

California Building Code

The California Building Code (California Code of Regulations, Title 24, Part 2) contains various building standards derived and adapted from the International Building Code, authorized by the California legislature, that address California building issues, including several that are applicable to the visual condition of a site (especially at night). They include standards for outdoor lighting intended to improve energy efficiency, minimize light pollution and nighttime glare, and provide design solutions to shield and control outdoor lighting fixtures.

Related to glare, the 2022 California Green Building Standards Code, Title 24 Section A4.106.7 Reduction of Heat Island Effect on Nonroof Areas includes voluntary measures for residential

buildings. It states "Use high albedo materials with an initial solar reflectance value of at least 0.30 as determined in accordance with American Society for Testing and Materials (ASTM) Standards E1918 or C 1549". This is a minimum threshold. For roofs the minimum value threshold varies by Building Climate Zone and building type tier levels (low-rise and high-rise). The project site is in Building Climate Zone 3. There are no minimum thresholds values indicated in the code for low-rise residential roofs in Zone 3.

California Department of Transportation: Scenic Highway Program

The State Scenic Highway Program—a provision of Sections 260 through 263 of the Streets and Highways Code—was established by the Legislature in 1963 to preserve and enhance the natural beauty of California. The State Scenic Highway System includes highways that are either eligible for designation as scenic highways or have been designated as such. The status of a State Scenic Highway changes from "eligible" to "officially designated" when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives the designation from Caltrans.

The following routes are eligible as a State Scenic Highway but have not been adopted as such by Marin County:

- Highway 101 north from the Golden Gate Bridge to Highway 1 north
- Highway 1 north
- Highway 37 east to the Sonoma County line

3.2 LOCAL

There are three principal Marin County regulatory documents that address visual reaources. These are:

- The Marin Countwide Plan
- The Marin County Development Code
- The Strawberry Community Plan and Amendments

Goals, policies, and design guidelines related to visual resources and visual quality as applicable to the Project are listed below.

Marin Countywide Plan

Built Environment Element

Goal DES-3: New Development in Built Areas. New construction should occur in a compact form in developed locations whenever feasible.
Policy DES-3.1: Promote Infill. Encourage the development of vacant and underutilized parcels consistent with neighborhood character.
Policy DES-3.2: Promote Green Spaces. Encourage the creation of high-quality community plazas, squares, greens, commons, community and neighborhood parks, and rooftop gardens.

Implementing Programs

Goal DES-4: Protection of Scenic Resources. Minimize visual impacts of development and preserve vistas of important natural features.

Policy DES-4.1: Preserve Visual Quality. Protect scenic quality and views of the natural environment — including ridgelines and upland greenbelts, hillsides, water, and trees — from adverse impacts related to development.

Implementing Programs

DES-4.a: Protect Key Public Views. Work with community groups to identify, map, and protect important view corridors. Establish design standards for development in these areas as part of the design review requirements and individual community plans (see DES-3.b).

DES-4.b : Minimize Visual Impacts of Public Facilities. Amend applicable codes and procedures to require appropriate placement, design, setbacks, and native landscaping of public facilities (including sound walls, medians, retaining walls, power lines, and water tanks) to reduce visual impacts, and encourage local agencies to adopt similar standards.

DES-4.c: Regulate Mass and Scale. Ensure that the mass and scale of new structures respect environmental site constraints and character of the surrounding neighborhood (see Program DES-3.b), are compatible with ridge protection policies (see Program DES-4e), and avoid tree-cutting (especially on wooded hillsides) and grading wherever possible. Community plans should consider regulations concerning home size.

DES-4.d: Protect Views of Ridgelines. Implement Development Code standards that require development proposed on or near visually prominent ridgelines (including in the Ridge and Upland Greenbelt Areas shown on Map 3-4) to be clustered below the ridgeline on the least visually prominent portion of the site. Expand the implementation of these standards by including in the Ridge and Upland Greenbelt Area those unmapped ridgelines identified as having countywide significance and rezoning Ridge and Upland Greenbelt lands to Planned District categories and adjacent buffer area to a transitional district. (See DES-4.e.)

DES-4.e: Protect Views of Ridge and Upland Greenbelt Areas. Employ a variety of strategies to protect views of Ridge and Upland Greenbelt areas, including the following:

- Identifying any unmapped ridgelines of countywide significance, both developed and undeveloped, and adjusting the Ridge and Upland Greenbelt Areas map as appropriate;
- Amending the Development Code and County zoning maps to designate a suburban edge on all parcels contiguous to the City-Centered Corridor that abut the Ridge and Upland Greenbelt, and requiring that those parcels develop at rural densities with visually sensitive site design;
- Rezoning Ridge and Upland Greenbelt lands to the Planned District category and adjacent buffer areas to a transitional district, thereby subjecting them to County Design Review Requirements that include hillside protection;
- Requiring buildings in Ridge and Upland Greenbelt areas to be screened from view by wooded areas, rock outcrops, or topographical features (see DES-3.b); and
- Calculating density for Ridge and Upland Greenbelt subdivisions at the lowest end of the Countywide Plan designation range.

Glossary

- **View Corridor**. The line of sight — identified as the height, width, and distance — of an observer looking toward an object of significance to the community; the route that directs the viewer's attention.
- **Viewshed.** The area within view from a defined observation point.

FIGURES

- Map 3-4: Ridge and Upland Greenbelt Areas
- Map 6.3.2: South Strawberry Land Use Policy Map

Marin County Development Code

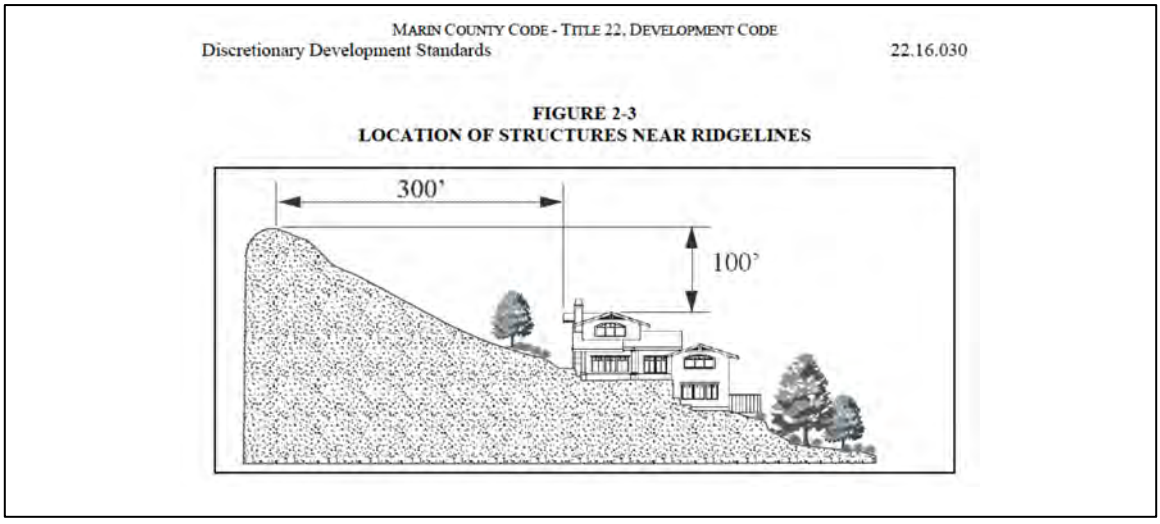
22.10.040 – Residential District Development Standards

B. Development standards for planned districts. Table 2-5, Residential District Development Standards, outlines the RMP district height limit for primary structures as 30 ft and accessory structure as 16 feet. There are no applicable minimum setback requirements outlined in the table for the RMP zoning district.

22.16.030 – General Standards

D. Building location

1. **Clustering requirement.** Structures shall be clustered in the most accessible, least visually prominent, and most geologically stable portions of the site, consistent with needs for privacy where multiple residential units are proposed. Clustering is especially important on open grassy hillsides; a greater scattering of buildings may be preferable on wooded hillsides to save trees.
2. **Development near ridgelines.** No construction shall occur on top of, or within 300 feet horizontally, or within 100 feet vertically of visually prominent ridgelines, whichever is more restrictive, unless no other suitable locations are available on the site or the lot is located substantially within the ridgeline area as defined herein. If structures must be placed within this restricted area because of site constraints or because siting the development outside of the ridgeline area will result in greater visual or environmental impacts, they shall be in locations that are the least visible from adjacent properties and view corridors.



F. Landscaping. Introduced landscaping should be designed to minimally disturb natural areas, and shall be compatible with the native plant setting. Landscaping plans should be prepared in compliance with Chapter 22.26 (Landscaping). Landscaping plans should consider fire protection, solar access, the use of native and drought tolerant plant species and minimal water use. Planting should not block scenic views from adjacent properties or disturb wildlife trails. See also Chapter 22.26 (Landscaping).

G. Lighting, exterior. Exterior lighting visible from off-site should be allowed for safety purposes only, shall consist of low-wattage fixtures, and should be directed downward and shielded to prevent adverse lighting impacts on nearby properties, subject to the approval of the Director.

I. Project design

1. Height limits for structures:
   a. 30 feet for primary structures, except that multi-family residential buildings may be increased in height to 40 feet when side yard setbacks of 15 feet or greater are provided.
   b. The floor level of the lowest floor shall not exceed 10 feet above natural grade at the lowest corner.
   c. Structures located within the ridgeline areas pursuant to Subsection F.2 above shall be limited to a maximum height of 18 feet.

2. Materials and colors. Building materials and colors shall be chosen to blend into the natural environment unobtrusively, to the greatest extent possible.

22.26.040 – Landscaping Objectives

A. Provide visual amenities. Landscaping should enhance the appearance of new development and surrounding areas by being designed, installed, and maintained to blend new structures into the context of an established community.

D. Screen incompatible land uses. Landscaping should be utilized to screen incompatible land uses by creating visual separation, where deemed necessary and appropriate, between land uses.

CHAPTER 22.42 – Design Review
22.42.010 – Purpose of Chapter

D. The design of the built environment respects and preserves the natural beauty of the County and the environmental resources found within.

G. Conflicts between land uses are eliminated, environmental values of the site are preserved, and adverse physical or visual effects which might otherwise result from unplanned or inappropriate development, design, or placement are minimized or eliminated.

24.04.410 - Parking lot lighting.

Lighting fixtures shall be shielded so as not to produce obtrusive glare on the public right of way or adjoining properties. All luminaries shall meet the most recently adopted criteria of the Illuminating Society of North American (IESNA) for "full cut off" luminaries.

22.130.030 – Definitions of Specialized Terms and Phrases
Visually Prominent Ridgeline. A line connecting the topographic highpoints within the Countywide Plan's Ridge and Upland Greenbelt along a ridge that separates watersheds and is visible from public viewpoints from open space areas, parks, trailheads, highways, arterial roads, the bay and other water bodies.

Strawberry Community Plan (1977)

General Design Guidelines

- Landscaping: Site plans shall be designed to incorporate landscaping to screen views of proposed structures. Landscaping shall be placed to provide privacy between proposed and existing structures.
- Ridgelines: Hilltops, forested areas and other prominent visual landmarks in the community should be recognized in development plan proposals and preserved in their natural state.
- View Corridors: Existing significant view corridors should be identified and designs for maintaining those corridors should be incorporated into development proposals. Structures in view of existing development should be designed to incorporate a variety of interesting structure planes and angles while adhering to a 30' 0" height limitation that maintains those existing views.

Specific Policy Framework

2.0 Preserve and Enhance the Scale and Character of the Area.

2.1 Preserve the natural appearance of hills, ridgelines, and other prominent or significant landforms.

2.12 Permit no development which would significantly interfere with views from ridges or hilltops to the Bay or lowlands.

2.13 Permit no development which would interrupt a continuous view of the visual crest of the surrounding hillsides from adjacent lowlands.

Strawberry Community Plan and Amendments (1982)

II. Goals
A. Community Amenities
It is the desire of the Community to assure that future development provide for such amenities as visual backdrops, neighborhood separators, retention of ridgelines, and protection of environmentally important areas, through careful planning and clustering of structures. In addition, all means of open space acquisition should be pursued, including purchase and dedication.

III. Development Guidelines
C. Golden Gate Baptist Theological Seminary - Land Use
(Area 5) Slope between Chapel and Seminary Drive - A band of open undeveloped land should extend from Chapel Drive to Seminary Drive.

(Area 6) Any expansion of the campus or student housing should be developed in this area. Hilltop adjacent to Chapel Drive is a prominent visual landmark within the Community and should remain undeveloped, if possible. However, if development of this site is to occur, it should be limited to structures for Seminary activities. No housing-should be placed on this site. structures should be designed and placed so that they are as unobtrusive as possible. This should be accomplished by placing structures in the northern quadrant of the site and by "benching" the slope to provide a lower building pad and profile. Landscaping should also be incorporated into the site plan to screen views of the structure from existing dwellings. The existing views from residences along Hillard Drive should not be blocked by development on this hilltop.

(Area 8) Location of Development - The Forested Knoll above Seminary Drive should remain undeveloped because it is a prominent visual landmark in the Community.

E. General Design Guidelines

- Landscaping: Site plans shall be designed to incorporate landscaping to screen views of proposed structures. Landscaping shall be placed to provide privacy between proposed and existing structures.
- Ridgelines: Hilltops, forested areas and other prominent visual landmarks in the community should be recognized in development plan proposals and preserved in their natural state.
- View Corridors: Existing significant view corridors should be identified and designs for maintaining those corridors should be incorporated into development proposals. Structures in view of existing development should be designed to incorporate a variety of interesting structure planes and angles while adhering to a 30' 0" height limitation that maintains those existing views.

4.0 VISUAL RESOURCE IMPACT ANALYSIS

Threshold of significance criteria for assessing the impacts to aesthetics are based on the CEQA Environmental Checklist. According to the CEQA Checklist, a project would result in a significant impact if it would:

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
- In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

4.1. Scenic Vistas

Impact Analysis: No Impact

A scenic vista is defined as (1) a public view from an existing park, plaza, major roadway or other public area, or (2) a gateway or panoramic view from areas generally available to the

general public. Views from private residences and non-public access are not considered scenic views because they are not available to the general public.

There are numerous panoramic and scenic views throughout the area's roadways, trails, public parks, and the Bay. The Fire Lookout and the Verna Dunshee Trail Overlook in Mount Tamalpais State Park could be considered formal designated vista points.

The Project will not block public views from any local or designated scenic vista points. Nor will the Project block views to any regional landmarks such as Richardson Bay, San Francisco Bay, Mount Tamalpais, or from other bayside communities including San Francisco as seen from areas surrounding the Project site. There is no substantial adverse effect on a scenic vista.

4.2 Scenic Resources within a State Scenic Highway

Impact Analysis: No Impact

There are no designated State Scenic Highways within Marin County. Therefore the Project would not be visible from any state scenic highway or damage scenic resources within a state scenic highway, including, but not limited to trees, rock outcroppings, and historic buildings.

4.3 Conflict with Applicable Zoning and Other Regulations Governing Scenic Quality

Impact Analysis: Less Than Significant with Mitigation

Construction Impacts

During construction, the following may be seen throughout the immediate Project area and from all KOPs in the foreground and to a lesser extent the middleground.

- Removal of existing vegetation.
- Demolition of existing structures and off-hauling of materials.
- Cut and fill grading necessary to develop Project area access roads and building sites.
- Fill placement at the existing playing field.
- Large pieces of equipment used for: moving earth; trenching ditches; transporting, lifting, placing materials; hauling cement; water trucks spraying water to control dust; and assorted construction vehicles.
- Construction activities for individual of Project facilities.

These activities will be dominant features in the landscape setting and will attract attention to the Project. It would usually not be feasible to fully screen or avoid the visibility of all project construction activities; however, visual impacts from construction are generally temporary (estimated by the applicant to require approximately 4 years) and would be less than significant.

Operation Impacts

The Project is in an urbanized area within the jurisdiction of Marin County. As such, the significance of visual impacts is defined by the consistency of the Project with the adopted goals, policies, and guidelines relating to visual character and quality. These are contained in the Marin Countywide Plan, Marin County Development Code, and Strawberry Community Plan and Amendments. The Project proposes a series of new amendments to the Strawberry Community Plan that relate to overall development within the Project site. This section includes: a description of the Project-related change to existing visual conditions; an

evaluation of potential visual effects on key public views; a series of recommended measures to mitigate those effects; and how those mitigated effects conform to the County's policies related to visual character and quality.

Long-term impacts to the visual character of the Strawberry area as seen by the general public will principally be related to changes in views created by the presence of new development. Key elements of the Project's development that affect its ability to conform to County policies are color, bulk, and relationship to the Project site's local ridgelines as seen from lower elevations. The main color palette for most of buildings consists of relatively light-valued materials including light beige cement plaster.

Table V-2 provides an overview of the Project impact on existing visual character as seen from all KOPs.

Eight KOPs were identified for preparing visual simulations to illustrate the Project-related visual change that would occur. These are:

- KOP #2 – Seminary Drive at Gilbert Drive (looking north)
- KOP #3 – Seminary Drive at Gilbert Drive (looking northeast)
- KOP #8 – Seminary Drive west of Chapel Drive (looking west)
- KOP #10 – Brickyard Park (looking northwest)
- KOP #14 – San Francisco Bay Trail / Mill Valley – Sausalito Path (looking north)
- KOP #17 – Drake Avenue, Marin City (looking north)
- KOP #19 – Verna Dunshee Trail Overlook, Mount Tamalpais State Park (looking southeast)
- KOP #23 – Richardson Bay adjacent to Shoreline Office Center (looking northeast)

These KOPs represent a variety of views from publicly accessible locations. The selection was also based on information presented in Table V-1 and, in part, on public comments made through the Notice of Preparation process.

The simulations are based on architectural, engineering, and landscape architectural drawings and materials selection provided by North Coast Land Holdings, LLC. They do not present a final design. There are potential details of the Project, such as the installation of solar electricity-generating panels on the building roofs that would be hidden behind parapets, as required by building codes. These and other details, such as lighting standards, are not shown in the simulations. The simulations are intended to illustrate the overall pattern, form, scale, color, and texture of the proposed development related to the characteristic landscape.

The simulations assumed the following about vegetative conditions:

- An approximate five-year growth period for planted vegetation after completion of construction.
- The Project proponent would implement a long-term landscape plan to replace dead or dying trees, maintain the forested nature of the Project site, and comply with Marin County fire codes. It is assumed that vegetative clearing and tree removal will be initially caused by grading, removal of existing structures, creating a defensible space around all new structures per code, or removing of existing dead or highly diseased trees that are currently standing. In addition, removal of selected downed wood on

the ground plane in forested areas and limbing up trees to avoid fuel ladder conditions would take place.

Many, but not all, of the KOPs identified above and in Figure V-2 provide relatively expansive views to the Project site. Attachment B includes, when applicable, panoramic images depicting existing visual conditions at the selected KOPs listed above used for simulations.

Visual simulations of the Project as seen from the selected KOPs are found in Attachment C. These consist of full-page images designated "a" and "b," with the existing views shown in the "a" figure and the five years after construction visual simulations in the "b" figure.

Table V-2: Impact on Visual Character from Key Observation Points

KOP ID #	Location	Impact Description
1	Chapel Drive: On the sidewalk in front of the residence at 125 Chapel Drive.	Impacts of the overall project are limited to the immediate foreground view to the open grassland hilltop of Chapel Hill Park. Viewing time for vehicles traveling along Chapel Hill Drive is approximately 20 seconds when traveling 35 mph. The view will be modified to a developed landscape with clustered apartments on the side slopes of the hill. The majority of structures are attached that will visually increase their perceived overall bulk. However, the resulting development will be coherent and unified. The hilltop will remain open space but converted to a formal, rectilinear viewing plaza with perimeter canopy / arbor structure. As Chapel Hill and its slopes will be redeveloped in their entirety, the resulting fit between new structures and open space will also be harmonious. Light-valued surfaces of architectural components will present a contrast and draw attention to the buildings. The visibility of the apartments from Chapel Drive will depend on the landscaping along Chapel Drive.
2*	Chapel Drive: On the sidewalk across from the residence at 141 Chapel Drive.	See simulation. The view north over the existing playing field includes the Shuck Drive Knoll, Hodges / Shuck, Reed/Storer/Shuck, and a portion of Dormitory Hill Planning Areas. The view will be significantly altered with the removal of random sparse structures and development of tightly spaced distinct housing located along the existing road system. Light-valued surfaces of architectural components will contrast with the grassland and forest backdrop and draw attention to the buildings. Landscape and undeveloped open space between the structures will remain visible in some areas and visually break up the various development clusters. Only the upper floors of the taller six-story structures at the corner of Hodge and Shuck Drives will be visible. The apartment buildings being located at the lower elevations of the Project site will be visually backdropped by hillside topography and smaller apartments of a similar architectural style.
3*	Seminary Drive: On the sidewalk opposite the Gilbert Drive intersection	See simulation. Views to the playing field will be eliminated from Seminary Drive with the creation of a 1:1 (horizontal to vertical) gradient fill slope. The slope will be landscaped with native trees that will filter existing views up the toward Dormitory Hill. Views beyond the elevated playing field will include the upper stories of the residential care facility and the six-story apartment buildings in the Hodges/Shuck Planning Area. As seen from Seminary Drive, views to the structures will be further filtered by street trees and landscape in and between the structures.
4	Seminary Drive: On the sidewalk at the driveway entrance to 150 Seminary Drive.	Similar to KOP #3, views to the playing field and hillside backdrop will be eliminated with a 1:1 gradient fill slope in the immediate foreground. The redwood grove will remain. The slope will be landscaped with trees.
5	Seminary Drive: On the sidewalk near the pedestrian path along	Views to the forested Seminary Point will be altered by with the inclusion of light-valued surfaces on two to three-story structures that will contrast with the darker forest vegetation and change what is now seen as essentially undeveloped hillside. Forest thinning of downed and

Table V-2: Impact on Visual Character from Key Observation Points

KOP ID #	Location	Impact Description
	the bay shore behind 150 Seminary Drive.	diseased trees can be expected. Because the structures are sited relatively low on the hillside, the ridgeline backdrop will remain intact.
6	Seminary Drive: On the street adjacent to 110 Seminary Drive and Strawberry Shores Apartments.	The view is funneled along the street by adjacent apartment and condominium buildings focusing on the exiting hillside vegetation above the existing playing field. The Monterey pine trees will initially remain with locally native tree species replacing them over time. Raising the playing field will not be seen because the existing condominium structure at 150 Seminary Drive blocks the view. The rest of the Project will not be visible.
7	Ricardo Drive: On the sidewalk opposite the residence located at 301 Ricardo Drive.	Because of topography, views to most of the Project development will not be seen. The existing forest buffer on the north and west sides of Shuck Knoll, noting that some of the forest is not within the Project boundaries, will generally screen development on the upper portions of Shuck Knoll.
8*	Seminary Drive: Approximately 150 feet west from intersection with Chapel Drive.	See simulation. Three units of the proposed apartments will be seen along the lower portions of Seminary Point. When seen individually their scale and bulk will be smaller than the duplex units in the foreground. The forest immediately around the structures will be thinned / cleared for fire protection making the structures more visible. Light-valued surfaces of architectural components will present a contrast with the forest setting and draw attention to the buildings. The ridgeline will not be altered.
9	Strawberry Cove Park: From edge of developed playground / picnic area.	The units that replace the existing apartments will be seen because of forest thinning and with attention drawn to them due to the light-valued surfaces of architectural components that will contrast with the forest setting. The ridgeline will not be altered.
10*	Brickyard Park: From edge of developed playground / picnic area.	See simulation. Similar to KOP #8, Portions of three or four apartment units will be seen along the lower portions of Seminary Point. The forest will be thinned of downed wood and diseased trees for fire protection. The ridgeline will not be altered.
11	Shoreline Access Path: At end of Egret Way.	The foreground view to the existing rooflines of the academic buildings in the Campus area will remain. The view will not change.
12	Interpretive Overlook, Richardson Bay Audubon Center & Sanctuary	The Campus library and cafe can be seen in the middleground as one component of the fully developed east-facing hillside of the Strawberry Peninsula. As no changes are proposed in this portion of the Project site, the view will not be altered.
13	San Francisco Bay Trail / Tiburon Old Rail Trail	The middleground view to the east side of Dormitory Hill ridgeline will change only slightly. The existing Campus library and cafe will continue to be seen. The horizontal roofline of the highest level of the residential care facility will replace the visible upper levels of the existing dormitories along the ridgeline. The residential care facility will be unified with the existing topography. Overall, the lines of the structure will parallel the ridgeline and generally blend with the texture

Table V-2: Impact on Visual Character from Key Observation Points

KOP ID #	Location	Impact Description
		of the fully developed east-facing hillside of the Strawberry Peninsula. Over time landscape trees will break up the horizontality of the structure.
14*	San Francisco Bay Trail / Mill Valley – Sausalito Path	See simulation. The forms of Chapel Hill and Seminary Point are openly visible. These topographic features screen the rest of the Project Area from view. The vegetation at the top of Chapel Hill Park will screen the development on the east side of Chapel Drive. Most of the apartments and residences proposed at Seminary Point will be visible. When seen individually or in mass their scale and bulk will be similar to the duplex units along Seminary Drive. The forest immediately around the structures will be thinned / cleared of downed wood and diseased trees for fire protection making the structures more visible. Light-valued surfaces of architectural components will present a contrast with the forest setting and draw attention to the buildings. The ridgeline will not be altered.
15	Highway 101: Traveling north.	Views to the Project site are available when traveling north on Highway 1 from the Sausalito-Marin City exit to the end of the Highway 101 bridge over Richardson Bay. In some sections, views from the highway are generally blocked by development along Bridgeway until approaching the bridge spanning Richardson Bay. On the bridge views are blocked by commercial buildings on the south and de Silva island on the north. For all vehicles traveling north views from the Sausalito-Marin City exit to the Project site could last approximately 75 seconds when traveling 65 mph with 17 seconds of that being open views while on the bridge. On the bridge, views begin at a 30-degree angle at the southern end of the bridge and increase to a 90-degree angle nearing de Silva island. The visibility of Project site will be similar to that of KOP #23 except with a more superior perspective.
16	Golden Gate National Recreation Area, Alta Trail	At the lower elevations of the Golden Gate National Recreation Area trail system, middleground views are often blocked by trailside vegetation. Where views are available, they will be similar to that of KOP #17 but with a more superior perspective.
17*	Drake Avenue	See simulation. Direct middleground views from Marin City to the forested knoll of Seminary Point, Chapel Hill Park, and Chapel Hill exist. The Ring Mountain Preserve on the Tiburon peninsula provides a backdrop to the entire Project site. As with KOP #14, topography and vegetation of Seminary Point will screen most the Project Area from view. The vegetation at the top of Chapel Hill Park will only partially screen the apartment development on Chapel Hill. The apartments on the south side of Chapel Hill will be visible. The bulk and scale of the apartment units will be similar to the houses along the west side of Chapel Drive. The light-valued color of the architectural surfaces will be noticeable. However the overall visibility of the development over time will depend on the landscaping along Chapel Drive.

Table V-2: Impact on Visual Character from Key Observation Points

KOP ID #	Location	Impact Description
		Most of the apartments proposed at Seminary Point will be visible. When seen individually or in mass their scale and bulk will be similar to the duplex units along Seminary Drive. The forest immediately around the structures will be thinned / cleared for fire protection making the structures more visible. Light-valued surfaces of architectural components will present a contrast with the forest setting and draw attention to the buildings. The ridgeline will not be altered.
18	Mount Tamalpais State Park: At the base of fire tower lookout on the east side.	Background panorarmic views are available from East Peak of Mount Tamalpais State Park. From this superior position, vitrtually the entire Strawberry Peninsula can be seen. Visually, only the structure groupings because of their light-valued architectural surfaces will be evident as three distinct development areas: Strawberry Point; Chapel Hill; and the Domritory Hill to Shuck Knoll area. The spaces that are distributed in between these clusters will be revegetated and at a background distance will not be noticably altered.
19*	Mount Tamalpais State Park: At the Verna Dunshee Trail Overlook.	See simulation. The view is essentially the same as KOP #18 but taken from a developed scenic overlook point.
20	Public access pier adjacent to The Spinnaker	The only portion of the Project site that is distinctly visible in the background is Strawberry Point. The roofline of the eastern-most academic building is also visible. While the apartments on Strawberry Point may be seen because of their light-valued architectural surfaces, their scale will be minimal and not affect the overall panorama of Richardson Bay seen from the pier.
21 / 22	Richardson Bay Shoreline at parking area at the end of Salinas Street behind Seaplane Adventures	This viewing point location is not officially identified as a public shoreline and therefore is little used by the general public. The east-facing panorama over Richardson Bay allows virtually the entire Project to be seen. The visual impacts would be similar to that of KOP #23 that is a publicly accessible shoreline park area.
23*	Richardson Bay Shoreline public access point adjacent to Shoreline Office Center	See simulation. Virtually the entire Project will be seen in the foreground from the east-facing panorama over Richardson Bay. This is a similar perspective to what would be seen by kayakers and other boaters on Richardson Bay. The perspective of the KOP to the Project site is inferior so that development will be seen behind but above the existing apartment and condominiums that line the Richardson Bay shoreline along Seminary Drive. The light-valued surfaces and uniform architectural components of the Project will contrast with surrounding landscape and development. The bulk and scale of the residential care facility is somewhat visually mitigated by the stepped nature of the architecture and, though attched, the segmentation of the building into distinct units. In some areas, trees would be planted between the units further breaking up the structure visually. The rooflines of the apartments in the top of the Reed/Storer/Shuck Planning Area and the upper-most residential care facility

Table V-2: Impact on Visual Character from Key Observation Points

KOP ID #	Location	Impact Description
		structure will initially be skylined. If on the water, this effect would be more noticible as one approaches to the western shoreline of Richardson Bay. Over time, however, trees planted on the northeast side of the residential care facililty will grow above the roofeline and visually create a more natural edge condition.
24	San Francisco Bay Trail / Mill Valley – Sausalito Path: At Bothen Marsh Preserve.	A middlegroud view to Seminary Point is partially blocked and visually dominated by the Highway 101 bridge over Richardson Bay and the moving traffic on it. While some portion of the apartments on Seminary Point might be seen, they would be in the background and a minor feature of the view. The remainder of the Project site is not visible.
25	Great Circle Drive	An open view to Chapel Hill is available north of the crest of Great Circle Drive. When driving at 25 mph the view lasts for approximately 5 seconds. The apartment cluster on the south side of Chapel Hill and the redeveloped Chapel Hill plaza would be openly visible. The degree of visibility to the apartments over time will be dependent on the downhill landscaping of the Project and street trees planted along the east side of Chapel Drive.

*** KOP selected for visual simulation**

General Considerations

Open Space: The principal open space feature of the Project site is Seminary Point with its forested knoll. The overall open space prominence of Seminary Point as seen from any direction will remain. However, the new apartments along Chapel Drive will be seen as a linear feature along the lower slopes of Seminary Point linking with the duplex housing of Seminary Cove.

The Project within the Dormitory Hill, Reed/Shuck/Storer, Hughs/Shuck, and Shuck Knoll Drive Planning Areas will convert a portion of the existing undeveloped, private open space into housing, the residential care facility, and other community facilities. The visual effect, particularly as seen from inferior viewer positions on Richardson Bay and its western shoreline area will be the development of these open spaces. This effect is significantly less so when seen at higher elevations where open space between development clusters is observed. The side slopes of Chapel Hill will be developed with the westernmost point of Chapel Hill being reconfigured but remaining as open space. Chapel Hill Park, also a visual open space as seen from the south and west, will remain untouched.

Scale: Most proposed apartments and dormitory structures are generally compatible in scale with the surrounding single family homes, condominiums, and large apartment buildings that ring the shoreline.

The mass and scale of the residential care facility, while larger than surrounding buildings, is mitigated by: its angled footprint forming two wings that mimic the existing topography; stepping the five floors down the slope; street trees that help screen the building; and tree plantings between the wings of the buildings that further visually separate them. In addition the horizontal nature of the building includes fenestration of the facade that further visually breaks the building into smaller components.

The mass and scale of the six-story apartment structures at the corner of Hodges Drive and Shuck Drive will be visually distinct when viewed in the immediate foreground from within the Project site. Seen from surrounding areas outside the Project site the lower floors will generally not be visible as the structures are located in the lower elevations of the Project site. While the upper floors of the structures may be seen, they will be similar in color and fenestration to the smaller apartment structures that backdrop them and are visually unified with them.

Color: The proposed buildings emphasize use of a light-valued off-white cement plaster. Streets and pedestrian pavements use high albedo surfaces that are also light-valued in color. While off-white and other light-valued colors do appear in the residential structures in the surrounding community, they are intermittent in the overall landscape. With a common architecture throughout the entire proposed development, the overall effect of the buildings taken in their entirety displays a color contrast with the surrounding natural landscape that draws the attention of the viewer. This is particularly true for views from the southwest in the afternoon looking at the Project over Richardson Bay. While the Project internally is harmonious and coherent it draws the viewer's attention when seen in context with the established harmony of the surrounding landscape and community.

Views

Views from the North

The Project site is blocked from view from the majority of the public street system to the north by continuous residential development, the ridgeline extending from the Reed/Storer/Shuck and Shuck Knoll Drive Planning Areas, and the existing woodland buffer located along Ricardo Road and Richardson Drive. A portion of that woodland buffer is within the Project site. To the extent that the on-site woodland buffer is thinned, the apartments on the west and north sides of Shuck Knoll would be seen, though filtered, from the western end of Ricardo Road (KOP #7) near Seminary Drive. The scale of the apartments would be in harmony with the scale of residences along Ricardo Road / Vista Del Sol neighborhood.

Views from the Northeast and East

Views from the Tiburon Peninsula (KOP #12 and KOP #13) into the Project site are generally blocked by the ridgeline connecting the Campus, Dormitory Hill, and Reed/Storer/Shuck Planning Areas and by existing mature vegetation along the residential area of East Strawberry Drive. Project facilities will not be seen with the exception of portions of the uppermost level of the residential care facility. The flat roofline will parallel the topography and will be backdropped by the ridgelines of the Golden Gate National Recreation Area.

Views from Egret Way (KOP #11) to the existing campus buildings will not change.

Views from the Southeast

Views of the Chapel Hill Planning Area apartments will be directly visible from Chapel Drive (KOP #1) in the immediate foreground and from Great Circle Drive (KOP #25). The degree of visibility will be dependent on street trees and landscaping associated with the final project design. When driving, views into the Project site will be relatively short to moderate.

Open views into the Project site in the immediate foreground to the majority of apartments and dormitory development in the Reed/Storer/Shuck, Hodges/Shuck, and Shuck Knoll Planning Areas would be afforded from Chapel Drive traveling west beyond the crest of Chapel Hill. The central portions of the Project site will change from one of scattered structures to more intense but clustered development (KOP #2 – see simulation).

For the remainder of views from the southeast the majority of the Project is blocked by the ridgeline from the Campus Planning Area to Seminary Point. Views focus on the forested knoll of Seminary Point. Apartment development on Seminary Point would be seen from Seminary Drive (KOP #8 – see simulation) and from Brickyard Park (KOP #10 – see simulation). Only a portion of the apartment development would be seen from the south and would be smaller in scale than that of the existing duplex housing. A cleared area will be created from grading associated with the Project cutting into the hillside, to meet fire code around structures, and from thinning of the forest to remove downed undergrowth and dead and/or diseased trees.

Views from the Southwest and West

The greatest visual impact of the Project is for views from the southwest and west where a significant portion of the Project site is viewed.

The Project would require approximately 220,000 cubic yards of cut and fill, which would be balanced onsite by raising the Seminary Playing Field approximately 27 to 28 feet as seen from Seminary Drive. The result is that an existing view to the playing field In the immediate foreground from Seminary Drive (KOP #3 – see simulation) that takes the eye into the Project site will become a view to a vegetated slope with a 1:1 gradient (horizontal to vertical). The view from Seminary Drive traveling east (KOP #4) will be altered similarly to that of KOP #3 but with the steep slope behind the existing redwood grove. Because of vegetation removal required by the Project to place the fill and construct the residential care facility, the upper levels of the residential care facility will be seen against a skyline backdrop. The degree of screening of the residential care facility will be dependent on the density and coverage of native shade tree planting indicated for the hillside.

The central portions of the Project site consisting of student housing and dormitories will change from one of scattered structures to more intense but clustered development as seen in the middleground from the Sausalito shoreline (KOP #13, KOP #21, KOP #23 - see simulation) Highway 101 (KOP #15), and to varying degrees, from the trail system of the Golden Gate National Recreation Area. The Project will visually reflect the single and multiple-family residential development that cover the Strawberry Peninsula and that, except for Watertank Hill, surrounds it. However, while there is visually dense clustered development, many areas within the Project site will remain as undeveloped land that visually continues to provide an open space foil for the remainder of the peninsula. Notably these are the forested knoll, Chapel Hill Park, and the upper slopes of Dormitory Hill.

The proposed apartments mid-slope along Seminary Point, the most visually prominent feature of the Project site, will be seen in the foreground from Seminary Drive (KOP #6), Strawberry Cove Park (KOP #9) and in the middleground from the Sausalito shoreline and the San Francisco Bay Trail (KOP #14 - see simulation), Highway 101 Richardson Bay (KOP #23 - see simulation), Marin City (KOP #17 - see simulation) and, again to varying degrees, from the trail system of the Golden Gate National Recreation Area (KOP #16).

Recommended Mitigation

The significant visual impacts to the existing visual character and related County policies, goals, and guidelines created by the Project are: views into the Project site from surrounding streets and trails; color of structures; and the bulk and skylining effect of the residential care facility. The following recommended mitigation measures should be addressed through the detailed planting design for the Project and through the Design Review process. Mitigation measures should consider the following:

Aesthetics Mitigation Measure V-1 (see Figure V-5): To visually buffer views into the Project from adjacent streets, specify evergreen shrubs and trees along the north side of Chapel Drive, including the south slopes of Chapel Hill extending from Mission Drive to Willis Drive that:

- Screen and/or block views of the Project housing on the sides of Chapel Hill when driving along Chapel Drive.
- Screen and/or block views into the central area of the Project on the south side of Chapel Drive west of Chapel Hill.
- Allow a view corridor to Richardson and San Francisco Bays from Chapel Hill.

Aesthetics Mitigation Measure V-2 (see Figure V-5): To screen views of the residential care facility as seen from Seminary Drive (KOP #3), specify native shade trees on the hillside created by fill placement immediately adjacent to Seminary Drive to extend over the top of the fill and onto the playing field level. Specify a naturalistic hedgerow of screening shrubs along the top edge of the slope to further block views uphill.

Aesthetics Mitigation Measure V-3 (see Figure V-5): To mitigate the skylining effects of the residential care facility as seen from the west and southwest, specify a variety of fast-growing trees planted on the north and east sides of the facility so that, with time, a natural-appearing backdrop is created.

Aesthetics Mitigation Measure V-4: To reduce the color contrast with the surrounding natural landscape and community setting created by the use of only light-valued cement plaster building material, use a variety of light and dark-valued earth-toned materials that are flat and non-reflective (either integral to the material or painted).

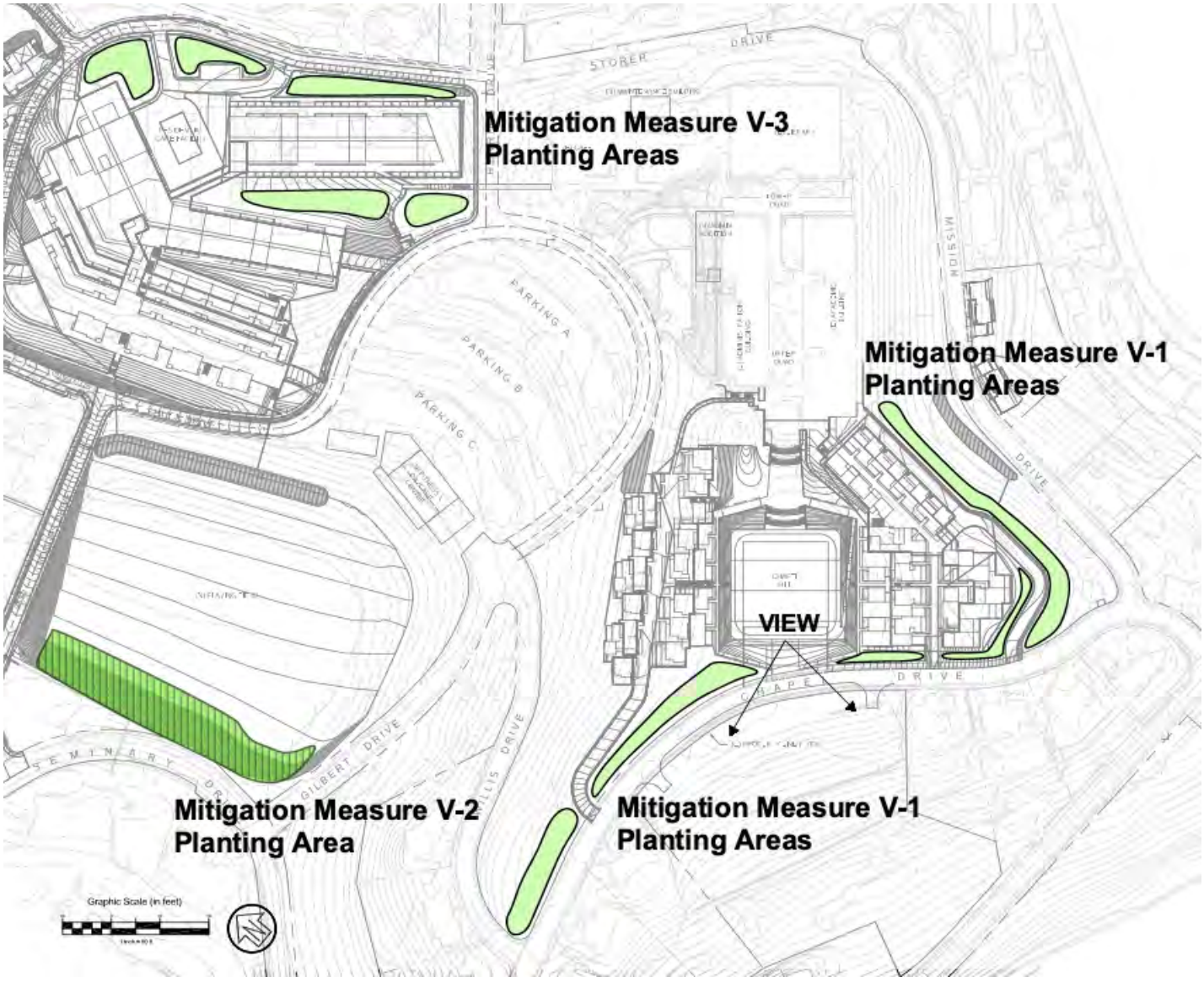


FIGURE V-5

MITIGATION PLANGING AREAS

SEE TEXT FOR EXPLANATION

Scale
0' 300' 1500'

North

DATE: 1-22-24

4.4 Regulatory Framework Consistency Analysis

Table V-3 provides a consistency analysis of the Project with recommended mitigation measures listed above based on the goals, policies and guidelines listed in Section 3.2. The County's policies generally direct that: the natural appearance of hills, local ridgelines, and other prominent or significant landforms be preserved; views to the Bay and lowlands be maintained; that the visual crest of the hillsides not be interrupted; and that materials and colors should unobtrusively blend with the natural environment.

As specifically noted in Table V-3, the Project along with recommended mitigation measures listed above serve to provide consistency with adopted Marin County goals, policies, and guidelines related to visual resources.

Table V-3: Policy Consistency Analysis

Policy	Consistency Analysis
Marin Countywide Plan: Built Environment Element	
Goal DES-3: New Development in Built Areas	Consistent: Proposed development is visually clustered with open space surrounding and between building clusters.
DES-3.1 Promote Infill	Consistent: The visual character of surrounding neighborhoods on the Strawberry Peninsula is continuous development with little to no visual open space between structures. The Project would visually expand that development but continue some open spaces between building clusters.
DES-3.2 Promote Green Spaces	Consistent: Visual open space and park areas are either preserved or redeveloped and are evident.
Goal DES-4: Protection of Scenic Resources	Consistent: No existing vistas to important natural features will be blocked. The form of Seminary Point, the major visible natural feature of the Project site, will not be changed and will continue to be a locally dominant natural promontory.
DES-4.1: Preserve Visual Quality	Consistent: Though more expansive, the Project will create a harmonious, ordered, and coherent development within the Project site as compared to existing improvements.
Marin Countywide Plan: Implementing Programs	
DES-4.a Protect Key Public Views	Consistent: Key view corridors identified in the Strawberry Community Plan (see below) and through public scoping comments are from Chapel Hill and to Seminary Point. These will not be blocked.
DES-4.b Minimize Visual Impacts of Public Facilities	Consistent: The majority of parking related to new structures will be interior or in underground garages. All utilities will be underground. Predominantly native tree and shrub species will be used to reduce visual impacts.
DES-4.c Regulate Mass and Scale	Consistent with Mitigation: The majority of Project structures conform with the bulk and scale of existing development on the Strawberry Peninsula. Visibility to

Table V-3: Policy Consistency Analysis

Policy	Consistency Analysis
	the residential care facility is limited to public views from the southwest. The structure is stepped to follow the existing topography and broken into distinct building components. Recommended Mitigation Measures V-2 and V-3 combined with site landscaping, over time, will reduce visibility and further disguise the bulk of the structure visually. Because of their location along the lower elevations of the Project site, the three six-story apartment buildings at the corner of Hodges Drive and Shuck Drive will have limited exposure to surrounding areas. The upper floors may be seen from selected locations but will be backdropped by topography and other development similar in color and texture to the apartment structures such that the bulk of the buildings will be visually blended with the overall development.
DES-4.d: Protect Views of Ridgelines.	Consistent with Mitigation: Map 3-4 of the Marin Countywide Plan does not show the Project site within a Ridge or Upland Greenbelt area to be protected. The majority of development visible to the general public will be clustered below local ridgelines. The uppermost component of the residential care facility (Building 52.a) is a horizontal structure whose roofline will parallel existing topography. Public visibility to the Project site is limited to a middleground view from Tiburon (KOP #13), views from the west including Seminary Drive (KOP #2 - see simulation), and middleground views from the edge of Richardson Bay (KOP 23 - see simulation). This effect would be eliminated with the implementation of recommended Mitigation Measures V- 2 and V-3.
DES-4.e: Protect Views of Ridge and Upland Greenbelt Areas	Consistent: Map 3-4 of the Marin Countywide Plan does not show the Project site within a Ridge or Upland Greenbelt area to be protected.
Marin County Development Code - 22.10.040 – Residential District Development Standards	
B. Development standards for planned districts.	Consistent with Mitigation: The uppermost component of the residential care facility (Building 52.a) is a horizontal structure whose roofline will parallel existing topography. Public visibility to the Project site is limited to a middleground view from Tiburon (KOP #13), views from the west including Seminary Drive (KOP #2 - see simulation), and middleground views from the edge of Richardson Bay (KOP 23 - see simulation). This effect would be eliminated with the implementation of recommended Mitigation Measures V- 2 and V-3.
Marin County Development Code - Section 22.16.030 – General Standards	
D.1 Building Location- Clustering requirement	Consistent: Structures are visually clustered, particularly in open grassland areas between Dormitory Hill and

Table V-3: Policy Consistency Analysis

Policy	Consistency Analysis
	Shuck Knoll. Existing and new plantings will assist in screening most facilities.
D.2 Building Location- Development near ridgelines	Consistent with Mitigation: Development does not occur on an identified regionally prominent ridgeline. Development does occur within 300' of visually prominent local ridgelines.
F. Landscaping	Consistent: Landscaping will be designed to be compatible with the native plant setting. Planting will not block scenic views to Richardson Bay or Mount Tamalpais from adjacent properties.
G. Lighting, exterior	Consistent: Low-wattage fixtures will be directed downward and shielded to prevent adverse lighting impacts on nearby properties.
I.1. Project Design: Height limits	Consistent with Mitigation: The local Dormitory Hill ridgeline includes a wide plateau in the saddle between the Campus and the Reed/Storer/Shuck Planning Areas. The uppermost component of the residential care facility (Building 52.a) extends approximately 39.75 feet above the plateau at its highest point and is seen above the ridgeline from various locations. This effect would be eliminated with the implementation of recommended Mitigation Measure V-3.
I.2 Project Design: Materials and colors	Consistent with Mitigation: The light-valued colors of the structures and albedo pavements will contrast with colors of the natural environment. Recommended Mitigation Measure V-4 would visually blend new structures with the natural environment and mimic the variety and pattern of colors in the surrounding residential areas.
Marin County Development Code - 22.26.040 Landscaping Objectives	
A. Provide visual amenities	Consistent: Proposed landscaping will enhance the appearance of new development and surrounding areas by being designed, installed, and maintained to blend new structures into the context of the established community.
D. Screen incompatible land uses	Consistent: Landscaping in recommended Mitigation Measures V-1 and V-2 will screen the Project to create visual separation from adjacent residential areas.
Marin County Development Code - 22.42 Design Review. 22.42.010 – Purpose of Chapter	
D. Natural Beauty	Consistent: Visually the Project results in a highly ordered and coherent development preserving Seminary Point, vistas from Chapel Hill, and respecting the local ridgelines between Chapel Hill and Shuck Knoll.
G. Conflicts	Consistent with Mitigation: With vegetative screening as recommended in Mitigation Measures V-1 and V-2, visual conflicts with surrounding areas are minimized.

Table V-3: Policy Consistency Analysis

Policy	Consistency Analysis
Strawberry Community Plan (1973)	
General Design Guidelines: Landscaping	Consistent with Mitigation: Landscaping as part of the development combined with recommended Mitigation Measure V-1 will be used to screen views and provide privacy.
General Design Guidelines: Ridgelines	Consistent: Hilltops, forested areas, and other prominent visual landmarks are recognized in the Project. The form of Seminary Point, the major visible natural feature of the Project site, will be preserved in its natural state. Chapel Hill consisting of a leveled hilltop, will be retained as a developed overlook to Richardson Bay with proposed apartments located on the slopes below it.
General Design Guidelines: View Corridors	Consistent: No existing public view corridors to Richardson Bay, San Francisco Bay, Mount Tamalpais or other regional landmarks including San Francisco will be blocked.
Specific Policy Framework 2.0 Preserve and Enhance the Scale and Character of the Area	Consistent: The Project will preserve the natural appearance and ridgeline of Strawberry Point. Chapel Hill, partially graded in the past, will be reconfigured and developed as a formal vista point. The Project will not interfere with views from ridges or hilltops to the Bay or lowlands. No structures would interrupt a continuous view of the visual crest of the surrounding hillsides from adjacent lowlands.
Strawberry Community Plan and Amendments (1982) Note: The Project is a proposed amendment to the Strawberry Community Plan.	
II. Goals A. Community Amenities	Consistent: Proposed development retains visual backdrops and provides visual neighborhood separators by retaining existing vegetation and through landscaping and revegetation. Local ridgelines are visually retained or in the case of the residential care facility, mimicked in the lines of the architecture. New structures are generally clustered.
III. Development Guidelines	
C. Golden Gate Baptist Theological Seminary - Land Use (Area 5)	Consistent: A band of open undeveloped land extending from Chapel Drive to Seminary Drive is retained in Chapel Hill Park.
C. Golden Gate Baptist Theological Seminary - Land Use (Area 6)	Consistent with Mitigation: Housing is proposed on the sides of Chapel Hill. However the housing is sited to be lower than the promontory of the hill and will not block views from the hill. Landscaping and Recommended Mitigation Measure V-1 incorporated into the site plan will screen views of the structure from existing dwellings.

Table V-3: Policy Consistency Analysis

Policy	Consistency Analysis
C. Golden Gate Baptist Theological Seminary - Land Use (Area 8)	Consistent: Existing mid to lower slope development on Seminary Point will be replaced and expanded. However, Seminary Point will remain a visually prominent visual landmark in the community.
E. General Design Guidelines: Landscaping	Consistent: Landscaping will be used to screen views and provide privacy.
E. General Design Guidelines: Ridgelines	Consistent: Hilltops, forested areas, and other prominent visual landmarks are recognized in the Project. The form of Seminary Point, the major visible natural feature of the Project site, will be preserved in its natural state. Chapel Hill, while being more formally developed, will be retained as an overlook to Richardson Bay with proposed apartments located on the slopes below it.
E. General Design Guidelines: View corridors	Consistent: No existing public view corridors to Richardson Bay, San Francisco Bay, Mount Tamalpais or other regional landmarks including San Francisco will be blocked.
Specific Policy Framework	
2.0 Preserve and Enhance the Scale and Character of the Area	Consistent: The Project will preserve the natural appearance and ridgeline of Strawberry Point. Chapel Hill, partially graded in the past, will be reconfigured and developed as a formal vista point. The Project will not interfere with views from ridges or hilltops to the Bay or lowlands. No structures would interrupt a continuous view of the visual crest of the surrounding hillsides from adjacent lowlands.

4.5 Light and Glare

Impact Analysis: Less Than Significant with Mitigation

The Project will meet Marin County's outdoor lighting standards such that night lighting will be consistent with Marin County's Design Review Standards and Development Code (see Table V-3 above). The Project will not create a new source of substantial light that would adversely affect day or nighttime views in the area.

In relation to glare, albedo, sometimes referred to as 'reflection coefficient', is a measure of how reflective a surface is. Albedo is commonly defined by a coefficient value between 0 and 1. The higher the value, the more energy is reflected back to the source. Complete reflection is 1 or 100%, and complete absorption is 0. There are no standards in the Marin County building code addressing albedo. The *2022 California Green Building Standards Code, Title 24 Section A4.106.7 Reduction of Heat Island Effect on Nonroof Areas* states "Use high albedo materials with an initial solar reflectance value of at least 0.30 as determined in accordance with American Society for Testing and Materials (ASTM) Standards E1918 or C 1549". This is a minimum threshold. For roofs the minimum value threshold varies by Building Climate Zone and building type tier levels (low-rise and high-rise). The project site is in Building

Climate Zone 3. There are no minimum thresholds values indicated in the code for low-rise residential roofs in Zone 3.

Depending on the reflective coefficient value to be employed, albedo surfacing materials used on the horizontal surfaces of the project (streets, pedestrian walks and plazas, and roofs) may create solar reflectivity and glare that could affect daytime and nighttime views. During the daytime, glare would be uncomfortable to the eye. At night, the main concern would be that of visibility of surface markings and traffic signs. In either case, there is common concern during wet conditions when surface markings may become difficult to notice. Within the project site use of high albedo coefficient materials may also potentially compromise outdoor thermal comfort, indoor thermal environments, and potentially affect nearby plant growth characteristics.

Viewers most affected would be the residents and visitors within the project area. Foreground views from neighboring areas located above the project site looking downward into the project site could also be affected such as along Campus Drive (KOP #2). The remaining foreground and middleground views into the project site from surrounding areas are generally from inferior viewing positions such that there would be no significant glare impacts caused by use of albedo materials.

Recommended Mitigation

Aesthetics Mitigation Measure V-5: The reflectance coefficients for albedo surfaces (streets, pedestrian walks and plazas, and roofs) used for the project shall not exceed a maximum coefficient of 0.6 as higher values would entail glare issues. Consistency with this maximum coefficient to be verified by the Architect of Record as part of the design review process.

BIBLIOGRAPHY

California State Scenic Highway Program
https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways

County of Marin. *Marin County Development Code Title 22*. (current).

Dan Coleman Associates. Master Plan – Golden Gate Baptist Theological Seminary. 1982.

Marin County Community Development Agency. *Marin Countywide Plan*. November 6, 2007.

Marin County Community Development Agency. *Single-family Residential Design Guidelines*. July 19, 2005.

Marin County Planning Department. *The Strawberry Community Plan*. November 5, 1973

Marin County Planning Department. *Amendments to the Strawberry Community Plan.* 1973 as amended through 2011.

Salvati Agnese (et.al). *Impact of Reflective Materials on Urban Canyon Albedo, Outdoor and Indoor Microclimates*
https://www.sciencedirect.com/science/article/pii/S0360132321008556

State of California, Business Transportation and Housing Agency, Department of Transportation. *Eligible and Officially Designated State Scenic Highways*. March, 2017.
http://www.dot.ca.gov/design/lap/livability/scenic-highways/index.html

Taha, H; Sailor, D; Akbari, H. *High-Albedo Materials for Reducing Building Cooling Energy Use*.
https://www.osti.gov/biblio/7000986-lpoimS/

U.S. Department of Agriculture, Forest Service. Agricultural Handbook Number 70. Landscape Aesthetics: A Handbook for Scenery Management. Washington D.C. 1997.

U.S. Department of Transportation, Federal Highway Administration, Office of Environmental Policy. *Visual Impact Assessment for Highway Projects* (FHWA-HI-88-054). 1988.

U.S. Department of Transportation, Federal Highway Administration, Office of Environmental Policy. *Guidelines for the Visual Impact Assessment of Highway Projects* (FHWA-HEP-15-029). 2015.

California Code of Regulations, Title 24. California Building Standards Code. 2022

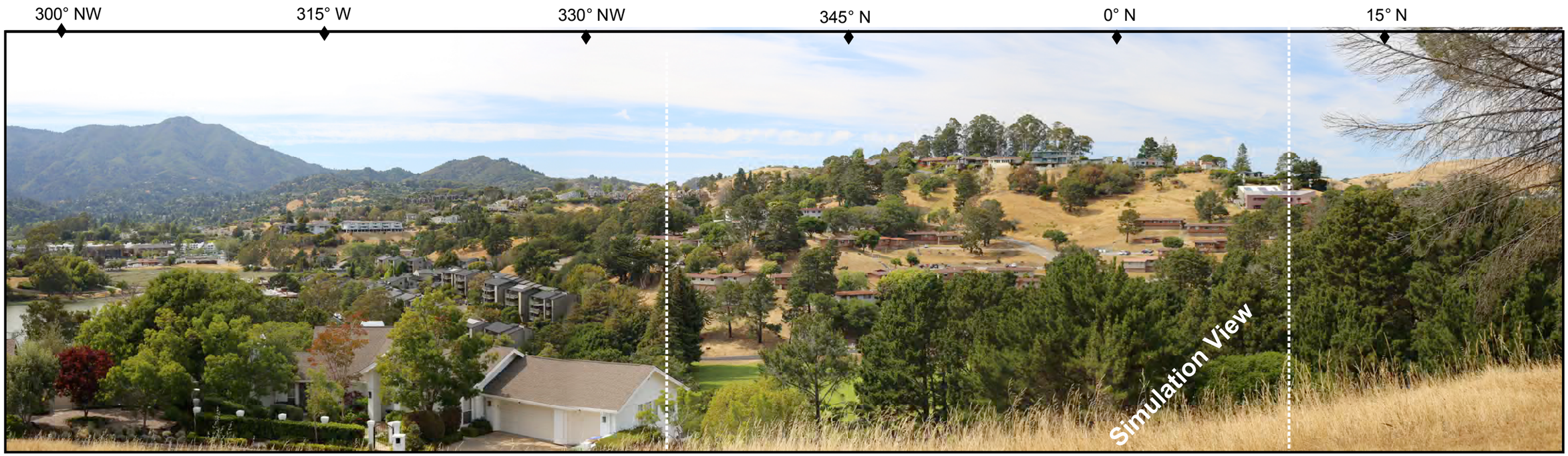
California Department of Transportation. *Visual Impact Assessment (VIA) for Projects on State Highway System*.
https://dot.ca.gov/programs/design/lap-visual-impact-assessment

ATTACHMENT A
Project Site Planning Areas

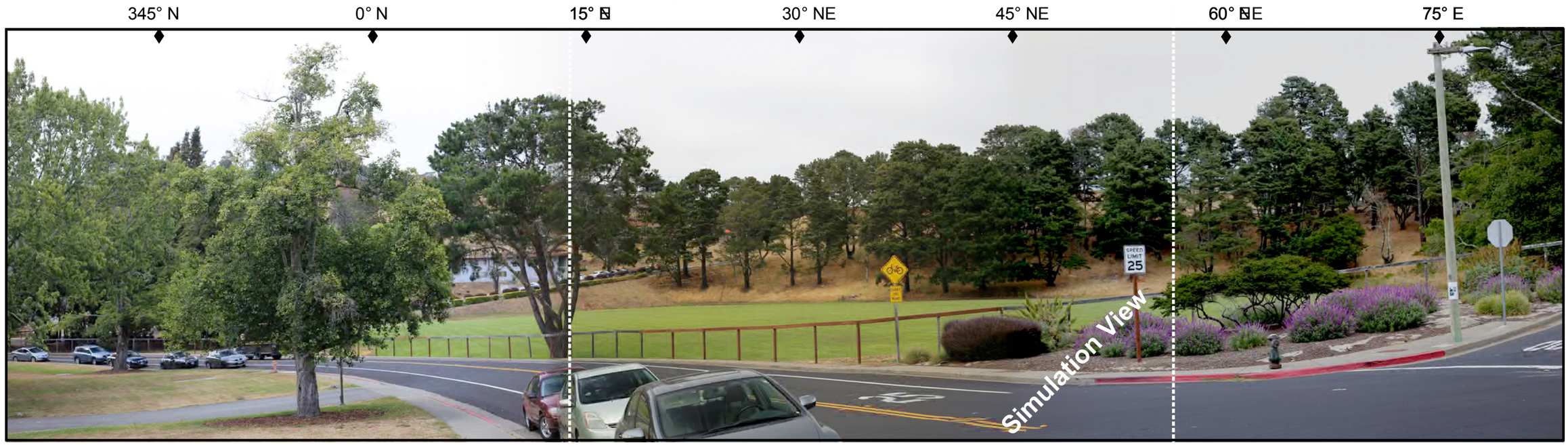
Source: Adapted by Ascent Environmental in 2022.

ATTACHMENT B

Panoramic Views from Selected KOPs used in Simulations



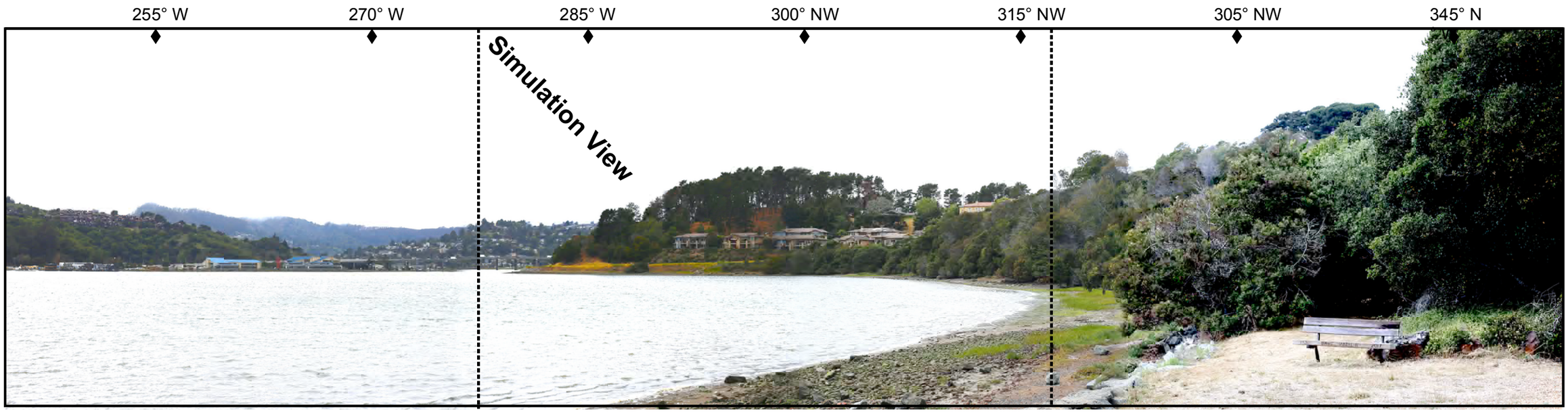
KOP #2: Chapel Road (Photo date: June 16,2021)



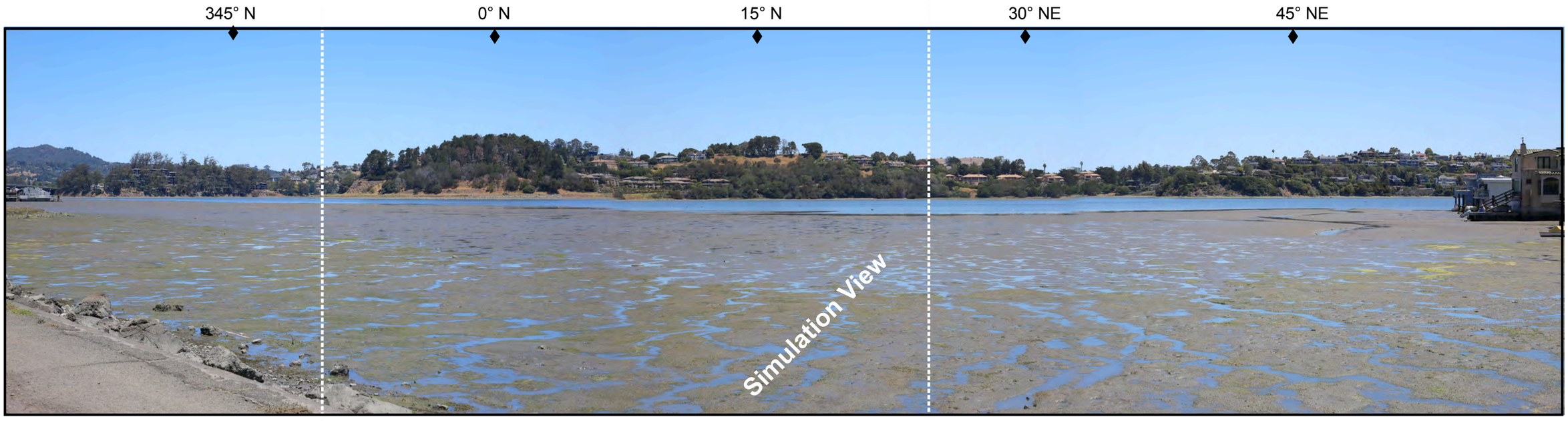
KOP #3: Seminary Drive (Photo date: June 21,2021)

KOP #8: Seminary Drive (Photo date: June 15, 2021)

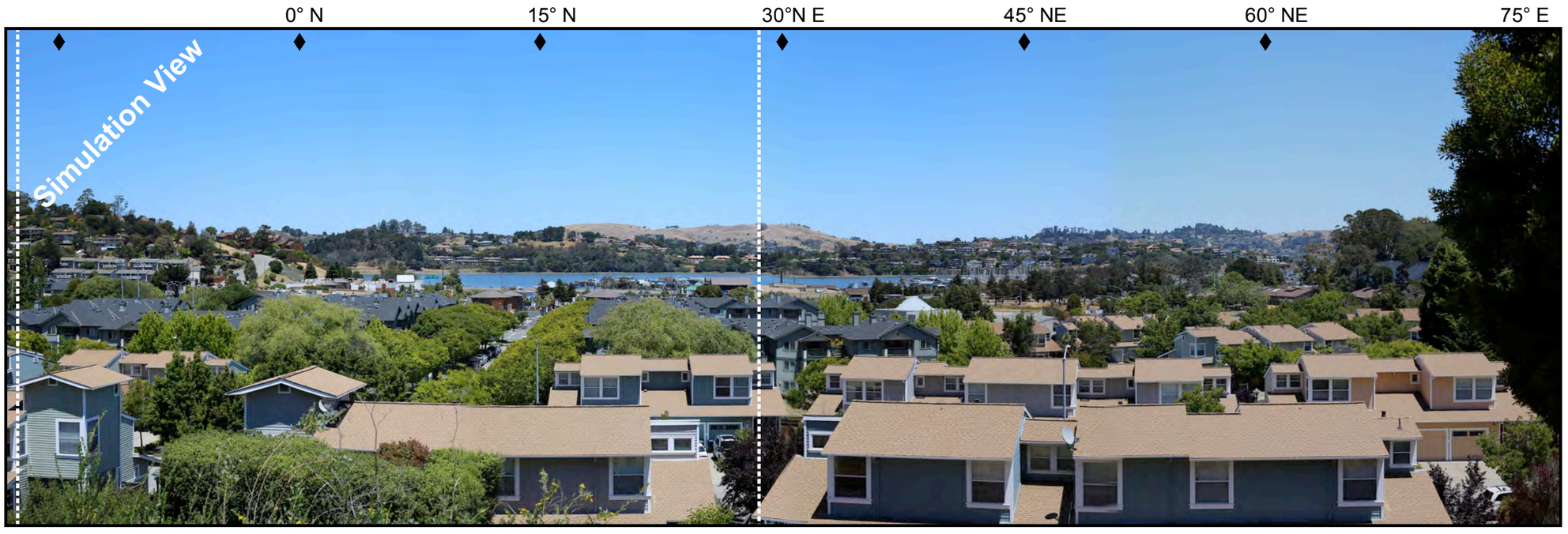
Note: View to project site funneled by vegetation and topography



KOP #10: Brickyard Park (Photo date: June 21, 2021)



KOP #14: San Francisco Bay Trail /Mill Valley – Sausalito Path (Photo date: June 15, 2021)



KOP #17: Drake Avenue, Marin City (Photo date: June 15, 2021)

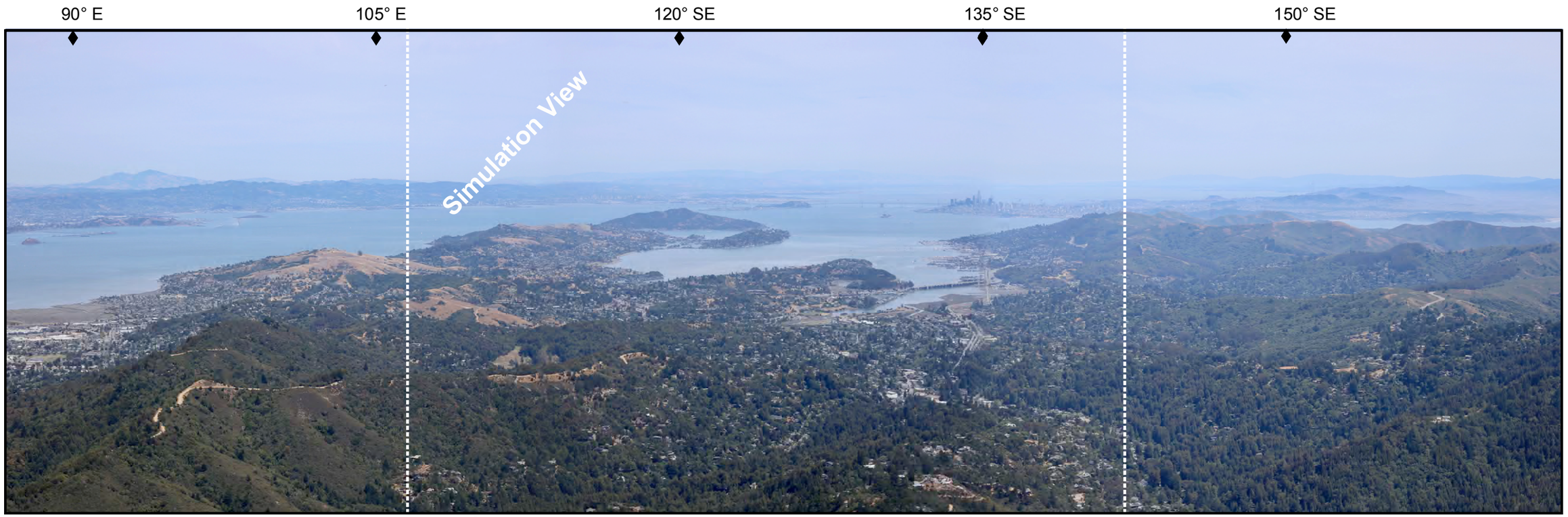
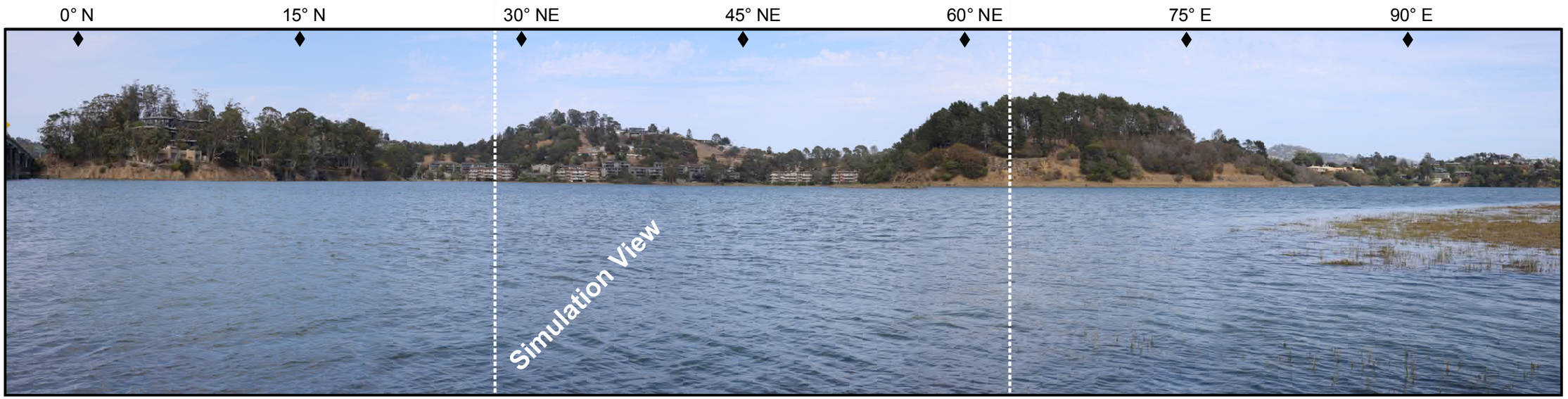


FIGURE X-7: KOP #19 - Mount Tamalpais State Park @ Verna Dunshee Trail overlook (Photo date: June 16, 2021)



KOP #23: Richardson Bay at shoreline public access point adjacent to Shoreline Office Center (Photo date: September 9, 2021)

ATTACHMENT C
Photo Simulations from Selected KOPs

KOP #2a – Existing View from Chapel Road (looking north)

KOP #2b – Simulation of Project 5 without mitigation years after construction s as seen from Chapel Road

KOP #3a – Existing view from Seminary Drive at Gilbert Drive (looking northeast)

KOP #3b – Simulation of Project without mitigation 5 years after construction as seen from Seminary Drive at Gilbert Drive

KOP #8a – Existing view from Seminary Drive west of Chapel Drive (looking west)

KOP #8b – Simulation of Project without mitigation 5 years after construction as seen Seminary Drive west of Chapel Drive

KOP #10a– Existing view from Brickyard Park (looking northwest)

KOP #10b – Simulation of Project without mitigation 5 years after construction as seen from Brickyard Park

KOP #14a - Existing view from San Francisco Bay Trail /Mill Valley – Sausalito Path (looking northeast)

KOP #14b - Simulation of Project without mitigation 5 years after construction as seen from San Francisco Bay Trail

KOP #17a - Existing view from Drake Avenue, Marin City (looking northeast)

KOP #17b - Simulation of Project without mitigation 5 years after construction as seen from Drake Avenue, Marin City (looking north)

KOP #19a - Existing view from Verna Dunshee Trail Overlook, Mount Tamalpais State Park (looking southeast)

KOP #19b - Simulation of Project without mitigation 5 years after construction as seen from Verna Dunshee Trail Overlook, Mount Tamalpais State Park

KOP #23a - Existing view from Richardson Bay adjacent to Shoreline Office Center (looking northeast)

KOP #23b - Simulation of Project without mitigation 5 years after construction as seen from Richardson Bay adjacent to Shoreline Office Center

Appendix C

Air Quality, Greenhouse Gas, and Energy Modeling Results

Construction Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lbs/day										MT/yr					
2023	4	33	35	0.10	0.54	1	1.81	0.14	1	1.31	0.00	1216.01	1216.01	0.38	0.00	1,226.15
2024	15	68	82	0.23	5.99	3	8.53	1.56	2	3.91	0.00	2741.49	2741.49	0.67	0.02	2,765.06
2025	15	38	58	0.17	6.17	1	7.59	1.58	1	2.89	0.00	1969.61	1969.61	0.43	0.02	1,986.65
2026	5	7	14	0.04	2.32	0	2.59	0.62	0	0.87	0.00	460.74	460.74	0.06	0.01	419.80
Annual Average	**9.88**	**36.84**	**47.28**	**0.13**	**3.76**	**1.37**	**5.13**	**0.98**	**1.27**	**2.25**	**0.00**	**1596.96**	**1596.96**	**0.05**	**0.00**	**1599**
Threshold	**54**	**54**	**N/A**	**N/A**	**N/A**	**N/A**	**82**	**N/A**	**N/A**	**82**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**1,100**
Exceed Threshold?	**No**	**No**	**N/A**	**N/A**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**N/A**	**N/A**	**Yes**

Construction Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lbs/day										MT/yr					
2023	2	11	48	0	1	0	1	0	0	0	0	9109	9109	0	0	1,226.15
2024	10	22	104	0	6	0	6	2	0	2	0	2741	2741	1	0	2,765.06
2025	12	14	73	0	6	0	6	2	0	2	0	1970	1970	0	0	1,986.65
2026	5	3	16	0	2	0	2	1	0	1	0	461	461	0	0	465.25
Annual Average	**7.37**	**12.71**	**60.41**	**0.13**	**3.66**	**0.28**	**3.93**	**0.96**	**0.27**	**1.23**	**0.00**	**3570.13**	**3570.13**	**0.05**	**0.00**	**6,443.10**
Threshold	**54**	**54**	**N/A**	**N/A**	**N/A**	**N/A**	**82**	**N/A**	**N/A**	**82**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**1,100**
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**Yes**

For HRA

			Unmitigated								**Mitigated**							
			Total PM2.5 (tons/year)				**Exhaust PM10 (lbs/year)**				**Total PM2.5 (tons/year)**				**Exhaust PM10 (lbs/year)**			
			On-Site	**Off-Site**			**On-Site**	**Off-Site**			**On-Site**	**Off-Site**			**On-Site**	**Off-Site**		
				Hauling	**Vendor**	**Worker**		**Hauling**	**Vendor**	**Worker**		**Hauling**	**Vendor**	**Worker**		**Hauling**	**Vendor**	**Worker**
Academic Area	Existing Admin & Academic		0.022416133	0	0.0006586	0.0236325	0.0241902	0	0.0000831	0.0004272	0.0037795	0	0.0006586	0.0236325	0.0038567	0	0.0000831	0.0004272
	Existing Café		0.017572816	0	0.0000773	0.0144531	0.0189429	0	0.0000070	0.0002600	0.0025787	0	0.0000773	0.0144531	0.0025997	0	0.0000070	0.0002600
	New Admin Building		0.0221060	0	0.0002513	0.0151405	0.0239358	0	0.0000314	0.0002670	0.0047589	0	0.0002513	0.0151405	0.0048531	0	0.0000314	0.0002670
	Existing Library		0.019979553	0	0.0000000	0.0192694	0.0215588	0	0.0000000	0.0003636	0.0030904	0	0.0000000	0.0192694	0.0031529	0	0.0000000	0.0003636
	Sub-Total		0.082074532	0	0.0009872	0.0724955	177.2554837	0	0.2430095	2.6354963	0.0142075	0	0.0009872	0.0724955	28.9248	0	0.2430095	2.6354963
Chapel & Mission Dr.	Chapel & Mission Dr.		0.0381892	0	0.0013891	0.0283098	82.8781848	0	0.3375365	1.0472285	0.0068589	0	0.0013891	0.0283098	14.2025	0	0.3375365	1.0472285
Hodges/Shuck + Reed/Storer/Shuck Planning Area	Hodge Shuck		0.0267	0.0003209	0.0018396	0.0283926	54.0074862	0.1224771	0.4458165	0.9700183	0.0075078	0.0003209	0.0018396	0.0283926	13.9281	0.1224771	0.4458165	0.9700183
Domitory Hill Planning Area	Residential Care Facility		0.029971445	2.08594E-05	0.0000939	0.0241204	61.9245313	0	0.0208594	0.8830469	0.0070748	0	0.0001113	0.0067028	14.6363	0	0.0278125	0.2364063
Seminary Point Planning Area	Seminary point		0.037706333	0.0000544	0.0000939	0.0267890	81.2570000	0.0197778	0.0197778	0.9691111	0.0066948	0.0000544	0.0000939	0.0267890	13.5082	0.0197778	0.0197778	0.9691111
Seminary Playing Field	Landscape and Renovation		0.028914833	0	0.0000000	0.0078317	57.7358172	0	0.0000000	0.2627768	0.0072451	0	0.0000000	0.0078317	12.9699	0	0.0000000	0.2627768
Shuck Drive Knoll Planning Area	Shuck Knoll		0.040613667	0	0.0000939	0.0236493	88.2583333	0	0.0197778	0.8603333	0.0076936	0	0.0000939	0.0236493	15.9013	0	0.0197778	0.8603333
Fitness & Daycare	Fitness & Daycare		0.020035457	0	0.0000906	0.0197078	43.4171279	0	0.0278851	0.6831854	0.0036181	0	0.0000906	0.0197078	7.4174	0	0.0278851	0.0003416
	Sub-Total		0.304205489	2.33326E-05	0.000601908	0.016877866	646.7339645	0.005605444	0.120348547	0.606570981	0.0609006	0.0005265	0.0046056	0.2138785	121.4886	0.1422548	1.1216156	6.9817123
				Total		0.017503106		**Total**		0.732524972		**Total**		0.2190107		**Total**		8.245582757
	Volume		0.304205489	tons/year							Volume	0.0609006	tons/year					
			0.011962939	grams/sec								0.002394927	grams/sec				total	8.245582757
																	aermod length	0.6362
	Mobile		0.017503106	tons/year							Mobile	0.2190107	tons/year					
			0.000688313	grams/sec								0.008612638	grams/sec					

Chapel Hill Planning Area				
	2	one bedroom	2,695	sf
	25	two bedroom	55,943	sf
	13	three bedroom	37,973	sf
		single family		sf
Total	40		96,611	sf
Seminary Point Planning Area				
		one bedroom		sf
	8	two bedroom	10,072	sf
		three bedroom		sf
	6	single family	10,572	sf
Total	14		20,644	sf
Hodges/Shuck Planning Area				
	14	one bedroom	10,794	sf
	44	two bedroom	19,918	sf
	56	three bedroom	32,520	sf
		single family		sf
Total	114		63,232	sf
Reed/Storer/Shuck Planning Area				
		one bedroom		sf
	15	two bedroom		sf
	36	three bedroom	33,568	sf
		single family		sf
Total	51		33,568	sf
Mission Drive Planning Area				
	8	one bedroom		sf
	9	two bedroom		sf
	81	three bedroom		sf
	5	single family		sf
Total	103		0	sf
Shuck Drive Knoll Planning Area				
	0	one bedroom		sf
		two bedroom		sf
	14	three bedroom	20,097	sf
		single family		sf
Total	14		20,097	sf

Total Residential land use based on data request		
Total Sum	**Land use**	**Data Req Value**
24	one bedroom	24
101	two bedroom	101
200	three bedroom	200
11	single family	11

CalEEMod Input

Chapel Hill + MISSION DR				
	10	one bedroom	2695	sf
	34	two bedroom	55943	sf
	94	three bedroom+	37973	sf
	5	Single Family	0	sf
Total	143		96611	sf
Shuck Drive Knoll Planning Area				
	0	one bedroom	0	sf
	0	two bedroom	0	sf
	14	three bedroom+	20097	sf
	0	Single Family	0	sf
Total	14		20097	sf
Seminary Point Planning Area				
	0	one bedroom		sf
	8	two bedroom		sf
	0	three bedroom+		sf
	6	Single Family		sf
Total	14			sf
Hodges/Shuck + Reed/Storer/Shuck Planning Area				
	14	one bedroom	10794	sf
	59	two bedroom	19918	sf
	92	three bedroom+	66088	sf
	0	Single Family	0	sf
Total	165		96,800	sf

3.2 Demolition - 2023

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	3.2000E-003	2.9400E-003	2.9400E-003
Total	3.2000E-003	2.9400E-003	2.9400E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-005	1.0000E-005	4.3000E-004
Total	1.0000E-005	1.0000E-005	4.3000E-004

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	8.2000E-004	7.9000E-004	7.9000E-004
Total	8.2000E-004	7.9000E-004	7.9000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-005	1.0000E-005	4.3000E-004
Total	1.0000E-005	1.0000E-005	4.3000E-004

3.2 Demolition - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	8.9400E-003	8.2200E-003	8.2200E-003
Total	8.9400E-003	8.2200E-003	8.2200E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	1.2800E-003
Total	2.0000E-005	2.0000E-005	1.2900E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	2.3900E-003	2.3100E-003	2.3100E-003
Total	2.3900E-003	2.3100E-003	2.3100E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000

Worker	2.0000E-005	2.0000E-005	1.2800E-003
Total	2.0000E-005	2.0000E-005	1.2900E-003

3.3 Utilities - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	2.0600E-003	1.8900E-003	1.8900E-003
Total	2.0600E-003	1.8900E-003	1.8900E-003

Unmitigated Construction Off-Site

Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-005	1.0000E-005	6.4000E-004
Total	1.0000E-005	1.0000E-005	6.5000E-004

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	3.5000E-004	3.5000E-004	3.5000E-004
Total	3.5000E-004	3.5000E-004	3.5000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-005	1.0000E-005	6.4000E-004
Total	1.0000E-005	1.0000E-005	6.5000E-004

3.4 Structure Retrofit - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	7.5500E-003	7.2200E-003	7.2200E-003
Total	7.5500E-003	7.2200E-003	7.2200E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	1.4000E-004	1.3000E-004	1.1100E-003
Worker	6.0000E-005	6.0000E-005	3.4100E-003
Total	2.0000E-004	1.9000E-004	4.5200E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	1.4600E-003	1.4400E-003	1.4400E-003
Total	1.4600E-003	1.4400E-003	1.4400E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	1.4000E-004	1.3000E-004	1.1100E-003
Worker	6.0000E-005	6.0000E-005	3.4100E-003
Total	2.0000E-004	1.9000E-004	4.5200E-003

3.5 Exterior Finishes - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	0.0152	0.0140	0.0140
Paving	0.0000	0.0000	0.0000
Total	0.0152	0.0140	0.0140

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	2.1000E-004	1.9000E-004	0.0111
Total	2.1000E-004	1.9000E-004	0.0111

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	1.2700E-003	1.2700E-003	1.2700E-003
Paving	0.0000	0.0000	0.0000
Total	1.2700E-003	1.2700E-003	1.2700E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	2.1000E-004	1.9000E-004	0.0111
Total	2.1000E-004	1.9000E-004	0.0111

3.6 Interior Finishes - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.0000E-003	9.2000E-004	9.2000E-004
Total	1.0000E-003	9.2000E-004	9.2000E-004

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-004	9.0000E-005	5.3700E-003
Total	1.0000E-004	9.0000E-005	5.3700E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	5.0000E-005	5.0000E-005	5.0000E-005
Total	5.0000E-005	5.0000E-005	5.0000E-005

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-004	9.0000E-005	5.3700E-003
Total	1.0000E-004	9.0000E-005	5.3700E-003

3.6 Interior Finishes - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	2.8200E-003	2.5900E-003	2.5900E-003
Total	2.8200E-003	2.5900E-003	2.5900E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	3.1000E-004	2.9000E-004	0.0176
Total	3.1000E-004	2.9000E-004	0.0176

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.6000E-004	1.6000E-004	1.6000E-004
Total	1.6000E-004	1.6000E-004	1.6000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	3.1000E-004	2.9000E-004	0.0176
Total	3.1000E-004	2.9000E-004	0.0176

3.2 Demolition - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	3.7900E-003	3.4900E-003	3.4900E-003
Total	3.7900E-003	3.4900E-003	3.4900E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	9.6000E-004
Total	**2.0000E-005**	**2.0000E-005**	**9.7000E-004**

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	9.3000E-004	9.1000E-004	9.1000E-004
Total	9.3000E-004	9.1000E-004	9.1000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	9.6000E-004
Total	2.0000E-005	2.0000E-005	9.7000E-004

3.3 Utilities - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	2.0600E-003	1.8900E-003	1.8900E-003
Total	2.0600E-003	1.8900E-003	1.8900E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-005	1.0000E-005	6.4000E-004
Total	1.0000E-005	1.0000E-005	6.5000E-004

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	3.3000E-004	3.3000E-004	3.3000E-004
Total	3.3000E-004	3.3000E-004	3.3000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-005	1.0000E-005	6.4000E-004
Total	1.0000E-005	1.0000E-005	6.5000E-004

3.4 Structure Retrofit - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category			
Off-Road	5.5500E-003	5.2800E-003	5.2800E-003
Total	5.5500E-003	5.2800E-003	5.2800E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	1.0000E-005	1.0000E-005	1.1000E-004
Worker	4.0000E-005	4.0000E-005	2.1300E-003
Total	5.0000E-005	5.0000E-005	2.2400E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	1.2100E-003	1.2000E-003	1.2000E-003
Total	1.2100E-003	1.2000E-003	1.2000E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	1.0000E-005	1.0000E-005	1.1000E-004
Worker	4.0000E-005	4.0000E-005	2.1300E-003
Total	5.0000E-005	5.0000E-005	2.2400E-003

3.5 Exterior Finishes - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	0.0117	0.0108	0.0108
Paving	0.0000	0.0000	0.0000
Total	0.0117	0.0108	0.0108

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-004	9.0000E-005	5.3300E-003
Total	1.0000E-004	9.0000E-005	5.3300E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	1.0200E-003	1.0200E-003	1.0200E-003
Paving	0.0000	0.0000	0.0000
Total	1.0200E-003	1.0200E-003	1.0200E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-004	9.0000E-005	5.3300E-003
Total	1.0000E-004	9.0000E-005	5.3300E-003

3.6 Interior Finishes - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.2400E-003	1.1400E-003	1.1400E-003
Total	1.2400E-003	1.1400E-003	1.1400E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	6.0000E-005	6.0000E-005	3.3300E-003
Total	6.0000E-005	6.0000E-005	3.3300E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	6.0000E-005	6.0000E-005	6.0000E-005
Total	6.0000E-005	6.0000E-005	6.0000E-005

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	6.0000E-005	6.0000E-005	3.3300E-003
Total	6.0000E-005	6.0000E-005	3.3300E-003

3.6 Interior Finishes - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	2.6200E-003	2.4100E-003	2.4100E-003
Total	2.6200E-003	2.4100E-003	2.4100E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.4000E-004	1.3000E-004	8.1800E-003
Total	1.4000E-004	1.3000E-004	8.1800E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.5000E-004	1.5000E-004	1.5000E-004
Total	1.5000E-004	1.5000E-004	1.5000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.4000E-004	1.3000E-004	8.1800E-003
Total	1.4000E-004	1.3000E-004	8.1800E-003

3.2 Demolition - 2023

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	7.9900E-003	7.3500E-003	7.3500E-003
Total	7.9900E-003	7.3500E-003	7.3500E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	4.0000E-005	4.0000E-005	2.1300E-003
Total	4.0000E-005	4.0000E-005	2.1400E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	2.0900E-003	2.0100E-003	2.0100E-003
Total	2.0900E-003	2.0100E-003	2.0100E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	4.0000E-005	4.0000E-005	2.1300E-003
Total	4.0000E-005	4.0000E-005	2.1400E-003

3.3 Utilities - 2023

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	1.1300E-003	1.0400E-003	1.0400E-003
Total	1.1300E-003	1.0400E-003	1.0400E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-005	1.0000E-005	3.2000E-004
Total	1.0000E-005	1.0000E-005	3.2000E-004

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	1.8000E-004	1.8000E-004	1.8000E-004
Total	1.8000E-004	1.8000E-004	1.8000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-005	1.0000E-005	3.2000E-004
Total	1.0000E-005	1.0000E-005	3.2000E-004

3.3 Utilities - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	1.0300E-003	9.5000E-004	9.5000E-004
Total	1.0300E-003	9.5000E-004	9.5000E-004

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-005	1.0000E-005	3.2000E-004
Total	1.0000E-005	1.0000E-005	3.2000E-004

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	1.8000E-004	1.8000E-004	1.8000E-004
Total	1.8000E-004	1.8000E-004	1.8000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-005	1.0000E-005	3.2000E-004
Total	1.0000E-005	1.0000E-005	3.2000E-004

3.4 Structure Retrofit - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	8.2000E-003	7.7900E-003	7.7900E-003
Total	8.2000E-003	7.7900E-003	7.7900E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	6.0000E-005	5.0000E-005	2.9900E-003
Total	6.0000E-005	5.0000E-005	2.9900E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	1.5900E-003	1.5600E-003	1.5600E-003
Total	1.5900E-003	1.5600E-003	1.5600E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	6.0000E-005	5.0000E-005	2.9900E-003
Total	6.0000E-005	5.0000E-005	2.9900E-003

3.5 Exterior Finishes - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	0.0152	0.0140	0.0140
Total	0.0152	0.0140	0.0140

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	2.1000E-004	1.9000E-004	0.0111
Total	2.1000E-004	1.9000E-004	0.0111

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.2700E-003	1.2700E-003	1.2700E-003
Total	1.2700E-003	1.2700E-003	1.2700E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	2.1000E-004	1.9000E-004	0.0111
Total	2.1000E-004	1.9000E-004	0.0111

3.6 Interior Finishes - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	2.1900E-003	2.0100E-003	2.0100E-003
Total	2.1900E-003	2.0100E-003	2.0100E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.5000E-004	1.3000E-004	7.8500E-003
Total	1.5000E-004	1.3000E-004	7.8500E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.1000E-004	1.1000E-004	1.1000E-004
Total	1.1000E-004	1.1000E-004	1.1000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.5000E-004	1.3000E-004	7.8500E-003
Total	1.5000E-004	1.3000E-004	7.8500E-003

3.6 Interior Finishes - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	2.2100E-003	2.0300E-003	2.0300E-003
Total	2.2100E-003	2.0300E-003	2.0300E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.6000E-004	1.5000E-004	9.2100E-003
Total	1.6000E-004	1.5000E-004	9.2100E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.3000E-004	1.3000E-004	1.3000E-004
Total	1.3000E-004	1.3000E-004	1.3000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.6000E-004	1.5000E-004	9.2100E-003
Total	1.6000E-004	1.5000E-004	9.2100E-003

3.2 Demolition - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	7.0400E-003	6.4700E-003	6.4700E-003
Total	7.0400E-003	6.4700E-003	6.4700E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	1.0200E-003
Total	2.0000E-005	2.0000E-005	1.0300E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	1.4600E-003	1.4200E-003	1.4200E-003
Total	1.4600E-003	1.4200E-003	1.4200E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	1.0200E-003
Total	2.0000E-005	2.0000E-005	1.0300E-003

3.3 Utilities - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	4.3300E-003	3.9900E-003	3.9900E-003
Total	4.3300E-003	3.9900E-003	3.9900E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	9.9000E-004
Total	2.0000E-005	2.0000E-005	1.0000E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	1.1400E-003	1.1000E-003	1.1000E-003
Total	1.1400E-003	1.1000E-003	1.1000E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	9.9000E-004
Total	2.0000E-005	2.0000E-005	1.0000E-003

3.4 Foundations - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	5.3300E-003	5.0200E-003	5.0200E-003
Total	**5.3300E-003**	**5.0200E-003**	**5.0200E-003**

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	2.0000E-005	1.0000E-005	1.3000E-004
Worker	3.0000E-005	3.0000E-005	1.7000E-003
Total	5.0000E-005	4.0000E-005	1.8400E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	1.5200E-003	1.4700E-003	1.4700E-003
Total	1.5200E-003	1.4700E-003	1.4700E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	2.0000E-005	1.0000E-005	1.3000E-004
Worker	3.0000E-005	3.0000E-005	1.7000E-003
Total	5.0000E-005	4.0000E-005	1.8400E-003

3.5 Exterior Finishes - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	0.0106	9.7300E-003	9.7300E-003
Paving	0.0000	0.0000	0.0000
Total	0.0106	9.7300E-003	9.7300E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.5000E-004	1.4000E-004	8.5200E-003
Total	1.5000E-004	1.4000E-004	8.5200E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	9.8000E-004	9.8000E-004	9.8000E-004
Paving	0.0000	0.0000	0.0000
Total	9.8000E-004	9.8000E-004	9.8000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.5000E-004	1.4000E-004	8.5200E-003
Total	1.5000E-004	1.4000E-004	8.5200E-003

3.6 Interior Finishes - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	6.3000E-004	5.8000E-004	5.8000E-004
Total	6.3000E-004	5.8000E-004	5.8000E-004

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	5.0000E-005	4.0000E-005	2.6400E-003
Total	5.0000E-005	4.0000E-005	2.6400E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	4.0000E-005	4.0000E-005	4.0000E-005
Total	4.0000E-005	4.0000E-005	4.0000E-005

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	5.0000E-005	4.0000E-005	2.6400E-003
Total	5.0000E-005	4.0000E-005	2.6400E-003

3.6 Interior Finishes - 2026

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	3.2100E-003	2.9500E-003	2.9500E-003
Total	3.2100E-003	2.9500E-003	2.9500E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	2.2000E-004	2.1000E-004	0.0134
Total	2.2000E-004	2.1000E-004	0.0134

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.8000E-004	1.8000E-004	1.8000E-004
Total	1.8000E-004	1.8000E-004	1.8000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	2.2000E-004	2.1000E-004	0.0134
Total	2.2000E-004	2.1000E-004	0.0134

3.2 Demolition - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	5.3800E-003
Off-Road	0.0345	0.0318	0.0318
Total	0.0345	0.0318	0.0371

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	1.8000E-004	1.7000E-004	9.3000E-004
Vendor	0.0000	0.0000	0.0000
Worker	3.0000E-005	3.0000E-005	1.8200E-003
Total	2.1000E-004	2.0000E-004	2.7500E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	2.4200E-003
Off-Road	5.7800E-003	5.6700E-003	5.6700E-003
Total	5.7800E-003	5.6700E-003	8.0900E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	1.8000E-004	1.7000E-004	9.3000E-004
Vendor	0.0000	0.0000	0.0000
Worker	3.0000E-005	3.0000E-005	1.8200E-003
Total	2.1000E-004	2.0000E-004	2.7500E-003

3.2 Demolition - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	2.1700E-003
Off-Road	0.0119	0.0109	0.0109
Total	0.0119	0.0109	0.0131

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	7.0000E-005	7.0000E-005	3.8000E-004
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-005	1.0000E-005	7.4000E-004
Total	8.0000E-005	8.0000E-005	1.1200E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	9.8000E-004
Off-Road	2.2600E-003	2.2200E-003	2.2200E-003
Total	2.2600E-003	2.2200E-003	3.2000E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	7.0000E-005	7.0000E-005	3.8000E-004
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-005	1.0000E-005	7.4000E-004
Total	8.0000E-005	8.0000E-005	1.1200E-003

3.3 Site Preparation, Grading

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	2.2300E-003	2.0500E-003	2.0500E-003
Total	2.2300E-003	2.0500E-003	2.0500E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	2.2000E-004
Total	0.0000	0.0000	2.2000E-004

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	4.8000E-004	4.6000E-004	4.6000E-004
Total	4.8000E-004	4.6000E-004	4.6000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	2.2000E-004
Total	0.0000	0.0000	2.2000E-004

3.3 Site Preparation, Grading

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	8.9700E-003	8.2500E-003	8.2500E-003
Total	8.9700E-003	8.2500E-003	8.2500E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	1.0500E-003
Total	2.0000E-005	2.0000E-005	1.0500E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	2.1500E-003	2.0900E-003	2.0900E-003
Total	2.1500E-003	2.0900E-003	2.0900E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	1.0500E-003
Total	2.0000E-005	2.0000E-005	1.0500E-003

3.4 Foundation - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	0.0344	0.0317	0.0317
Total	0.0344	0.0317	0.0317

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.2000E-004	1.1000E-004	6.9300E-003
Total	1.2000E-004	1.1000E-004	6.9300E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	8.2700E-003	8.0000E-003	8.0000E-003
Total	8.2700E-003	8.0000E-003	8.0000E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.2000E-004	1.1000E-004	6.9300E-003
Total	1.2000E-004	1.1000E-004	6.9300E-003

3.5 Building Construction -

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	4.8300E-003	4.4400E-003	4.4400E-003
Total	4.8300E-003	4.4400E-003	4.4400E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	4.9000E-004	4.6000E-004	4.0100E-003
Worker	3.1000E-004	2.9000E-004	0.0177
Total	8.0000E-004	7.5000E-004	0.0217

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	2.4700E-003	2.3000E-003	2.3000E-003
Total	2.4700E-003	2.3000E-003	2.3000E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	4.9000E-004	4.6000E-004	4.0100E-003
Worker	3.1000E-004	2.9000E-004	0.0177
Total	8.0000E-004	7.5000E-004	0.0217

3.5 Building Construction -

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		MT/yr
Off-Road	4.2200E-003	3.8900E-003	3.8900E-003
Total	**4.2200E-003**	**3.8900E-003**	**3.8900E-003**

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	4.2000E-004	4.0000E-004	3.5000E-003
Worker	2.6000E-004	2.4000E-004	0.0155
Total	6.8000E-004	6.4000E-004	0.0190

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	2.1600E-003	2.0100E-003	2.0100E-003
Total	2.1600E-003	2.0100E-003	2.0100E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	4.2000E-004	4.0000E-004	3.5000E-003
Worker	2.6000E-004	2.4000E-004	0.0155
Total	6.8000E-004	6.4000E-004	0.0190

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		MT/yr
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	3.6400E-003	3.3500E-003	3.3500E-003
Total	3.6400E-003	3.3500E-003	3.3500E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	5.0000E-004	4.6000E-004	0.0285
Total	5.0000E-004	4.6000E-004	0.0285

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.9200E-003	1.7800E-003	1.7800E-003
Total	1.9200E-003	1.7800E-003	1.7800E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	5.0000E-004	4.6000E-004	0.0285
Total	5.0000E-004	4.6000E-004	0.0285

3.6 Architectural Coating - 2026

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		MT/yr
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	5.3300E-003	4.9100E-003	4.9100E-003
Total	5.3300E-003	4.9100E-003	4.9100E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	7.0000E-004	6.5000E-004	0.0417
Total	7.0000E-004	6.5000E-004	0.0417

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	2.8200E-003	2.6100E-003	2.6100E-003
Total	2.8200E-003	2.6100E-003	2.6100E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	7.0000E-004	6.5000E-004	0.0417
Total	7.0000E-004	6.5000E-004	0.0417

3.6 Architectural Coating - 2027

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	2.2000E-004	2.1000E-004	2.1000E-004
Total	2.2000E-004	2.1000E-004	2.1000E-004

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	3.0000E-005	3.0000E-005	1.7500E-003
Total	3.0000E-005	3.0000E-005	1.7500E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.2000E-004	1.1000E-004	1.1000E-004
Total	1.2000E-004	1.1000E-004	1.1000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	3.0000E-005	3.0000E-005	1.7500E-003
Total	3.0000E-005	3.0000E-005	1.7500E-003

3.2 SURVEY, SITE UTILITIES, GRUB &

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	4.5800E-003
Off-Road	0.0235	0.0216	0.0216
Total	0.0235	0.0216	0.0262

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	6.0000E-005	6.0000E-005	3.4100E-003
Total	6.0000E-005	6.0000E-005	3.4200E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	2.0600E-003
Off-Road	4.7500E-003	4.6200E-003	4.6200E-003
Total	4.7500E-003	4.6200E-003	6.6800E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	6.0000E-005	6.0000E-005	3.4100E-003
Total	6.0000E-005	6.0000E-005	3.4200E-003

3.3 CURB & GUTTER, HARDSCAPE &

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	0.0145	0.0136	0.0136
Paving	0.0000	0.0000	0.0000
Total	0.0145	0.0136	0.0136

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	3.0000E-005	3.0000E-005	1.7700E-003
Total	3.0000E-005	3.0000E-005	1.7800E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	4.3500E-003	4.1900E-003	4.1900E-003
Paving	0.0000	0.0000	0.0000
Total	**4.3500E-003**	**4.1900E-003**	**4.1900E-003**

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	3.0000E-005	3.0000E-005	1.7700E-003
Total	3.0000E-005	3.0000E-005	1.7800E-003

3.3 CURB & GUTTER, HARDSCAPE &

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	0.0135	0.0126	0.0126
Paving	0.0000	0.0000	0.0000
Total	0.0135	0.0126	0.0126

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	3.0000E-005	3.0000E-005	1.6400E-003
Total	3.0000E-005	3.0000E-005	1.6500E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	4.0300E-003	3.8800E-003	3.8800E-003
Paving	0.0000	0.0000	0.0000
Total	**4.0300E-003**	**3.8800E-003**	**3.8800E-003**

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	3.0000E-005	3.0000E-005	1.6400E-003
Total	3.0000E-005	3.0000E-005	1.6500E-003

3.4 MISC. SITE FURNISHINGS - 2026

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	4.1200E-003	3.7900E-003	3.7900E-003
Total	4.1200E-003	3.7900E-003	3.7900E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-005	1.0000E-005	6.4000E-004
Total	1.0000E-005	1.0000E-005	6.4000E-004

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	3.5000E-004	3.5000E-004	3.5000E-004
Total	3.5000E-004	3.5000E-004	3.5000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-005	1.0000E-005	6.4000E-004
Total	1.0000E-005	1.0000E-005	6.4000E-004

3.5 IRRIGATION & PLANTING -

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	2.8400E-003	2.6100E-003	2.6100E-003
Total	2.8400E-003	2.6100E-003	2.6100E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	7.0000E-005	7.0000E-005	4.4400E-003
Total	7.0000E-005	7.0000E-005	4.4400E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	1.6000E-004	1.6000E-004	1.6000E-004
Total	1.6000E-004	1.6000E-004	1.6000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	7.0000E-005	7.0000E-005	4.4400E-003
Total	7.0000E-005	7.0000E-005	4.4400E-003

3.5 IRRIGATION & PLANTING -

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	3.0600E-003	2.8200E-003	2.8200E-003
Total	3.0600E-003	2.8200E-003	2.8200E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	8.0000E-005	7.0000E-005	4.7900E-003
Total	8.0000E-005	7.0000E-005	4.7900E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	1.8000E-004	1.8000E-004	1.8000E-004
Total	1.8000E-004	1.8000E-004	1.8000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	8.0000E-005	7.0000E-005	4.7900E-003
Total	8.0000E-005	7.0000E-005	4.7900E-003

3.2 Demolition - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	6.8000E-004	6.3000E-004	6.3000E-004
Total	6.8000E-004	6.3000E-004	6.3000E-004

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	6.0000E-005
Total	0.0000	0.0000	6.0000E-005

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	1.2000E-004	1.1000E-004	1.1000E-004
Total	1.2000E-004	1.1000E-004	1.1000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	6.0000E-005
Total	0.0000	0.0000	6.0000E-005

3.2 Demolition - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	5.2800E-003	4.8600E-003	4.8600E-003
Total	5.2800E-003	4.8600E-003	4.8600E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-005	1.0000E-005	5.8000E-004
Total	1.0000E-005	1.0000E-005	5.9000E-004

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	1.0000E-003	9.8000E-004	9.8000E-004
Total	1.0000E-003	9.8000E-004	9.8000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-005	1.0000E-005	5.8000E-004
Total	1.0000E-005	1.0000E-005	5.9000E-004

3.3 Utilities, Grading and Paving -

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		MT/yr
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	5.5300E-003	5.0900E-003	5.0900E-003
Total	5.5300E-003	5.0900E-003	5.0900E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	9.6000E-004
Total	2.0000E-005	2.0000E-005	9.7000E-004

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	1.4700E-003	1.4200E-003	1.4200E-003
Total	1.4700E-003	1.4200E-003	1.4200E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	9.6000E-004
Total	2.0000E-005	2.0000E-005	9.7000E-004

3.4 Foundation - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		MT/yr
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	5.3300E-003	5.0200E-003	5.0200E-003
Total	5.3300E-003	5.0200E-003	5.0200E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	3.0000E-005	3.0000E-005	1.7000E-003
Total	3.0000E-005	3.0000E-005	1.7100E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	2.4300E-003	2.3900E-003	2.3900E-003
Total	2.4300E-003	2.3900E-003	2.3900E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	3.0000E-005	3.0000E-005	1.7000E-003
Total	3.0000E-005	3.0000E-005	1.7100E-003

3.5 Structure and Exterior

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	0.0106	9.7300E-003	9.7300E-003
Total	0.0106	9.7300E-003	9.7300E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	4.0000E-005	4.0000E-005	3.2000E-004
Worker	1.1000E-004	1.0000E-004	6.3900E-003
Total	1.5000E-004	1.4000E-004	6.7100E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	9.8000E-004	9.8000E-004	9.8000E-004
Total	**9.8000E-004**	**9.8000E-004**	**9.8000E-004**

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	4.0000E-005	4.0000E-005	3.2000E-004
Worker	1.1000E-004	1.0000E-004	6.3900E-003
Total	1.5000E-004	1.4000E-004	6.7100E-003

3.6 Interior Finishes - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		MT/yr
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.9000E-003	1.7500E-003	1.7500E-003
Total	**1.9000E-003**	**1.7500E-003**	**1.7500E-003**

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.1000E-004	1.0000E-004	5.9500E-003
Total	1.1000E-004	1.0000E-004	5.9500E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.1000E-004	1.1000E-004	1.1000E-004
Total	**1.1000E-004**	**1.1000E-004**	**1.1000E-004**

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.1000E-004	1.0000E-004	5.9500E-003
Total	1.1000E-004	1.0000E-004	5.9500E-003

3.6 Interior Finishes - 2026

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		MT/yr
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.1600E-003	1.0700E-003	1.0700E-003
Total	**1.1600E-003**	**1.0700E-003**	**1.0700E-003**

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	6.0000E-005	6.0000E-005	3.6400E-003
Total	6.0000E-005	6.0000E-005	3.6400E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	7.0000E-005	7.0000E-005	7.0000E-005
Total	**7.0000E-005**	**7.0000E-005**	**7.0000E-005**

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	6.0000E-005	6.0000E-005	3.6400E-003
Total	6.0000E-005	6.0000E-005	3.6400E-003

3.2 Demolition - 2023

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	0.0261	0.0240	0.0240
Total	0.0261	0.0240	0.0240

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	2.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	3.0000E-005	2.0000E-005	1.2800E-003
Total	3.0000E-005	2.0000E-005	1.3000E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	4.7200E-003	4.5800E-003	4.5800E-003
Total	4.7200E-003	4.5800E-003	4.5800E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	2.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	3.0000E-005	2.0000E-005	1.2800E-003
Total	3.0000E-005	2.0000E-005	1.3000E-003

3.3 Site Preparation, Grading

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total	
Category	tons/yr			MT/yr
Fugitive Dust	0.0000	0.0000	0.0000	
Off-Road	0.0247	0.0227	0.0227	
Total	0.0247	0.0227	0.0227	

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	2.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	4.0000E-005	4.0000E-005	2.1800E-003
Total	4.0000E-005	4.0000E-005	2.2000E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	5.4200E-003	5.2100E-003	5.2100E-003
Total	5.4200E-003	5.2100E-003	5.2100E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	2.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	4.0000E-005	4.0000E-005	2.1800E-003
Total	4.0000E-005	4.0000E-005	2.2000E-003

3.4 Foundation - 2023

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		MT/yr
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	0.0121	0.0111	0.0111
Total	0.0121	0.0111	0.0111

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	4.0000E-005	3.0000E-005	1.8700E-003
Total	4.0000E-005	3.0000E-005	1.8800E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	2.8900E-003	2.7600E-003	2.7600E-003
Total	2.8900E-003	2.7600E-003	2.7600E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	4.0000E-005	3.0000E-005	1.8700E-003
Total	4.0000E-005	3.0000E-005	1.8800E-003

3.4 Foundation - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		MT/yr
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	0.0204	0.0187	0.0187
Total	0.0204	0.0187	0.0187

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	6.0000E-005	6.0000E-005	3.4700E-003
Total	6.0000E-005	6.0000E-005	3.4800E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	5.1300E-003	4.9100E-003	4.9100E-003
Total	5.1300E-003	4.9100E-003	4.9100E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	6.0000E-005	6.0000E-005	3.4700E-003
Total	6.0000E-005	6.0000E-005	3.4800E-003

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		MT/yr
Off-Road	0.0289	0.0266	0.0266
Total	0.0289	0.0266	0.0266

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	3.0000E-005	3.0000E-005	2.6000E-004
Worker	3.9000E-004	3.6000E-004	0.0211
Total	4.2000E-004	3.9000E-004	0.0213

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	2.4100E-003	2.4100E-003	2.4100E-003
Total	**2.4100E-003**	**2.4100E-003**	**2.4100E-003**

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	3.0000E-005	3.0000E-005	2.6000E-004
Worker	3.9000E-004	3.6000E-004	0.0211
Total	4.2000E-004	3.9000E-004	0.0213

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		MT/yr
Off-Road	1.3700E-003	1.2600E-003	1.2600E-003
Total	1.3700E-003	1.2600E-003	1.2600E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	1.0000E-005
Worker	2.0000E-005	2.0000E-005	1.1100E-003
Total	2.0000E-005	2.0000E-005	1.1200E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	1.3000E-004	1.3000E-004	1.3000E-004
Total	1.3000E-004	1.3000E-004	1.3000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	1.0000E-005
Worker	2.0000E-005	2.0000E-005	1.1100E-003
Total	2.0000E-005	2.0000E-005	1.1200E-003

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		MT/yr
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.5900E-003	1.4700E-003	1.4700E-003
Total	1.5900E-003	1.4700E-003	1.4700E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.6000E-004	1.5000E-004	8.5700E-003
Total	1.6000E-004	1.5000E-004	8.5700E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	8.0000E-005	8.0000E-005	8.0000E-005
Total	8.0000E-005	8.0000E-005	8.0000E-005

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.6000E-004	1.5000E-004	8.5700E-003
Total	1.6000E-004	1.5000E-004	8.5700E-003

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		MT/yr
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	4.7600E-003	4.3800E-003	4.3800E-003
Total	4.7600E-003	4.3800E-003	4.3800E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	5.3000E-004	4.9000E-004	0.0298
Total	5.3000E-004	4.9000E-004	0.0298

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	2.7000E-004	2.7000E-004	2.7000E-004
Total	2.7000E-004	2.7000E-004	2.7000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	5.3000E-004	4.9000E-004	0.0298
Total	5.3000E-004	4.9000E-004	0.0298

3.2 Demolition - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	6.3000E-004
Off-Road	0.0242	0.0223	0.0223
Total	0.0242	0.0223	0.0229

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	2.0000E-005	2.0000E-005	1.1000E-004
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	1.2800E-003
Total	4.0000E-005	4.0000E-005	1.3900E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	2.8000E-004
Off-Road	4.2300E-003	4.1400E-003	4.1400E-003
Total	4.2300E-003	4.1400E-003	4.4200E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	2.0000E-005	2.0000E-005	1.1000E-004
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	1.2800E-003
Total	4.0000E-005	4.0000E-005	1.3900E-003

3.3 Site Preparation, Grading

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	9.9700E-003	9.1700E-003	9.1700E-003
Total	9.9700E-003	9.1700E-003	9.1700E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	1.2800E-003
Total	2.0000E-005	2.0000E-005	1.2800E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	1.5300E-003	1.4700E-003	1.4700E-003
Total	1.5300E-003	1.4700E-003	1.4700E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	1.2800E-003
Total	2.0000E-005	2.0000E-005	1.2800E-003

3.4 Foundation - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	0.0250	0.0230	0.0230
Total	0.0250	0.0230	0.0230

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	8.0000E-005	7.0000E-005	4.2700E-003
Total	8.0000E-005	7.0000E-005	4.2700E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	6.1000E-003	5.8500E-003	5.8500E-003
Total	6.1000E-003	5.8500E-003	5.8500E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	8.0000E-005	7.0000E-005	4.2700E-003
Total	8.0000E-005	7.0000E-005	4.2700E-003

3.5 Building Construction -

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	0.0115	0.0106	0.0106
Total	0.0115	0.0106	0.0106

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	1.0000E-005	1.0000E-005	1.1000E-004
Worker	1.7000E-004	1.6000E-004	9.1300E-003
Total	1.8000E-004	1.7000E-004	9.2400E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	9.3000E-004	9.3000E-004	9.3000E-004
Total	9.3000E-004	9.3000E-004	9.3000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	1.0000E-005	1.0000E-005	1.1000E-004
Worker	1.7000E-004	1.6000E-004	9.1300E-003
Total	1.8000E-004	1.7000E-004	9.2400E-003

3.5 Building Construction -

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	7.1600E-003	6.5900E-003	6.5900E-003
Total	7.1600E-003	6.5900E-003	6.5900E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	1.0000E-005	1.0000E-005	8.0000E-005
Worker	1.1000E-004	1.0000E-004	6.2200E-003
Total	1.2000E-004	1.1000E-004	6.3000E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	6.4000E-004	6.4000E-004	6.4000E-004
Total	6.4000E-004	6.4000E-004	6.4000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	1.0000E-005	1.0000E-005	8.0000E-005
Worker	1.1000E-004	1.0000E-004	6.2200E-003
Total	**1.2000E-004**	**1.1000E-004**	**6.3000E-003**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.8300E-003	1.6900E-003	1.6900E-003
Total	1.8300E-003	1.6900E-003	1.6900E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	2.3000E-004	2.1000E-004	0.0123
Total	**2.3000E-004**	**2.1000E-004**	**0.0123**

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	9.0000E-005	9.0000E-005	9.0000E-005
Total	9.0000E-005	9.0000E-005	9.0000E-005

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	2.3000E-004	2.1000E-004	0.0123
Total	**2.3000E-004**	**2.1000E-004**	**0.0123**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	2.5100E-003	2.3100E-003	2.3100E-003
Total	2.5100E-003	2.3100E-003	2.3100E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	3.5000E-004	3.2000E-004	0.0197
Total	**3.5000E-004**	**3.2000E-004**	**0.0197**

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.4000E-004	1.4000E-004	1.4000E-004
Total	1.4000E-004	1.4000E-004	1.4000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	3.5000E-004	3.2000E-004	0.0197
Total	**3.5000E-004**	**3.2000E-004**	**0.0197**

3.2 Demolition - 2023

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	0.0228	0.0210	0.0210
Total	0.0228	0.0210	0.0210

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	1.1200E-003
Total	2.0000E-005	2.0000E-005	1.1300E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	4.1300E-003	4.0100E-003	4.0100E-003
Total	4.1300E-003	4.0100E-003	4.0100E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	1.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	1.1200E-003
Total	2.0000E-005	2.0000E-005	1.1300E-003

3.2 Demolition - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	3.0300E-003	2.7900E-003	2.7900E-003
Total	**3.0300E-003**	**2.7900E-003**	**2.7900E-003**

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	1.6000E-004
Total	0.0000	0.0000	1.6000E-004

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	5.7000E-004	5.6000E-004	5.6000E-004
Total	5.7000E-004	5.6000E-004	5.6000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	1.6000E-004
Total	0.0000	0.0000	1.6000E-004

3.3 Site Preparation, Grading

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		MT/yr
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	0.0127	0.0117	0.0117
Total	0.0127	0.0117	0.0117

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	2.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	1.2800E-003
Total	2.0000E-005	2.0000E-005	1.3000E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	3.0700E-003	2.9600E-003	2.9600E-003
Total	3.0700E-003	2.9600E-003	2.9600E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	2.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.0000E-005	1.2800E-003
Total	2.0000E-005	2.0000E-005	1.3000E-003

3.4 Foundation - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		MT/yr
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	0.0250	0.0230	0.0230
Total	0.0250	0.0230	0.0230

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	2.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	8.0000E-005	7.0000E-005	4.2700E-003
Total	8.0000E-005	7.0000E-005	4.2900E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	6.3200E-003	6.0400E-003	6.0400E-003
Total	6.3200E-003	6.0400E-003	6.0400E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	2.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	8.0000E-005	7.0000E-005	4.2700E-003
Total	8.0000E-005	7.0000E-005	4.2900E-003

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		MT/yr
Off-Road	0.0211	0.0194	0.0194
Total	0.0211	0.0194	0.0194

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	2.0000E-005	2.0000E-005	1.9000E-004
Worker	2.8000E-004	2.6000E-004	0.0154
Total	3.0000E-004	2.8000E-004	0.0155

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	1.7600E-003	1.7600E-003	1.7600E-003
Total	1.7600E-003	1.7600E-003	1.7600E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	2.0000E-005	2.0000E-005	1.9000E-004
Worker	2.8000E-004	2.6000E-004	0.0154
Total	3.0000E-004	2.8000E-004	0.0155

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		MT/yr
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	3.7400E-003	3.4400E-003	3.4400E-003
Total	3.7400E-003	3.4400E-003	3.4400E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	3.7000E-004	3.4000E-004	0.0201
Total	3.7000E-004	3.4000E-004	0.0201

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.8000E-004	1.8000E-004	1.8000E-004
Total	1.8000E-004	1.8000E-004	1.8000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	3.7000E-004	3.4000E-004	0.0201
Total	3.7000E-004	3.4000E-004	0.0201

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		MT/yr
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	8.8000E-004	8.1000E-004	8.1000E-004
Total	8.8000E-004	8.1000E-004	8.1000E-004

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-004	9.0000E-005	5.5000E-003
Total	1.0000E-004	9.0000E-005	5.5000E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	5.0000E-005	5.0000E-005	5.0000E-005
Total	5.0000E-005	5.0000E-005	5.0000E-005

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	1.0000E-004	9.0000E-005	5.5000E-003
Total	1.0000E-004	9.0000E-005	5.5000E-003

3.2 Demolition - 2023

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	0.0241	0.0222	0.0222
Total	0.0241	0.0222	0.0222

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	2.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	### ###	2.00E-05	1.1800E-003
Total	### ###	**2.00E-05**	**1.20E-03**

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	4.3700E-003	4.24E-03	4.2400E-003
Total	4.3700E-003	**4.24E-03**	4.2400E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	2.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	2.0000E-005	2.00E-05	1.1800E-003
Total	2.0000E-005	**2.00E-05**	1.2000E-003

3.3 Site Preparation, Grading and Paving - 2023

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	0.0145	0.0134	0.0134
Total	0.0145	0.0134	0.0134

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	2.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	3.0000E-005	2.00E-05	1.2800E-003
Total	**3.00E-05**	**2.00E-05**	1.3000E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	3.1900E-003	3.06E-03	3.0600E-003
Total	3.1900E-003	**3.06E-03**	3.0600E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	2.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	3.0000E-005	2.00E-05	1.2800E-003
Total	3.0000E-005	**2.00E-05**	1.3000E-003

3.4 Foundation - 2023

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	0.0276	0.0254	0.0254
Total	0.0276	0.0254	0.0254

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	2.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	8.0000E-005	8.00E-05	4.2700E-003
Total	**8.00E-05**	**8.00E-05**	4.2900E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Fugitive Dust	0.0000	0.0000	0.0000
Off-Road	6.6000E-003	6.30E-03	6.3000E-003
Total	6.6000E-003	**6.30E-03**	6.3000E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	2.0000E-005
Vendor	0.0000	0.0000	0.0000
Worker	8.0000E-005	8.00E-05	4.2700E-003
Total	8.0000E-005	**8.00E-05**	4.2900E-003

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	4.4100E-003	4.06E-03	4.0600E-003
Total	**4.41E-03**	**4.06E-03**	4.0600E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	7.0000E-005	7.00E-05	5.6000E-004
Worker	6.0000E-005	5.00E-05	2.9900E-003
Total	**1.30E-04**	**1.20E-04**	3.5500E-003

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	### ###	3.40E-04	3.4000E-004
Total	### ###	**3.40E-04**	3.4000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	7.0000E-005	7.00E-05	5.6000E-004
Worker	6.0000E-005	5.00E-05	2.9900E-003
Total	1.3000E-004	**1.20E-04**	3.5500E-003

3.5 Building Construction -

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	0.0193	0.0178	0.0178
Total	0.0193	0.0178	0.0178

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	3.2000E-004	3.10E-04	2.6500E-003
Worker	2.6000E-004	2.40E-04	0.0141
Total	**5.80E-04**	**5.50E-04**	0.0167

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Off-Road	### ###	1.61E-03	1.6100E-003
Total	### ###	**1.61E-03**	1.6100E-003

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	3.2000E-004	3.10E-04	2.6500E-003
Worker	2.6000E-004	2.40E-04	0.0141
Total	5.8000E-004	**5.50E-04**	0.0167

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	3.8500E-003	3.55E-03	3.5500E-003
Total	**3.85E-03**	**3.55E-03**	3.5500E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	4.8000E-004	4.40E-04	0.0259
Total	**4.80E-04**	**4.40E-04**	0.0259

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.9000E-004	1.90E-04	1.9000E-004
Total	1.9000E-004	**1.90E-04**	1.9000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	4.8000E-004	4.40E-04	0.0259
Total	4.8000E-004	**4.40E-04**	0.0259

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	2.0000E-003	1.84E-03	1.8400E-003
Total	**2.00E-03**	**1.84E-03**	1.8400E-003

Unmitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	2.8000E-004	2.60E-04	0.0157
Total	**2.80E-04**	**2.60E-04**	0.0157

Mitigated Construction On-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Archit. Coating	0.0000	0.0000	0.0000
Off-Road	1.1000E-004	1.10E-04	1.1000E-004
Total	1.1000E-004	**1.10E-04**	1.1000E-004

Mitigated Construction Off-Site

	Exhaust PM10	Exhaust PM2.5	PM2.5 Total
Category	tons/yr		
Hauling	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000
Worker	2.8000E-004	2.60E-04	0.0157
Total	2.8000E-004	**2.60E-04**	0.0157

Residential

CHAPEL HILL & MISSION DR — **Construction Start Date:** Monday, April 3, 2023 — **Operational Year:** 2026

Construction Unmitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Unmitigated	2023	0.23	1.85	1.97	0.01	0.04	0.07	0.11	0.01	0.07	0.08	0.00	504.26	504.26	0.15	0.00	508.58
Unmitigated	2024	0.57	0.66	0.94	0.00	0.16	0.02	0.18	0.04	0.02	0.06	0.00	235.08	235.08	0.04	0.01	237.95
Unmitigated	2025	0.30	0.05	0.19	0.00	0.06	0.00	0.06	0.02	0.00	0.02	0.00	48.69	48.69	0.00	0.00	49.10

Construction Mitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Mitigated	2023	0.0988	0.6086	2.631	5.72E-03	0.0378	0.0148	0.0525	0.0101	0.0142	0.0243	0	504.2555	504.2555	0.1531	1.66E-03	508.5781
Mitigated	2024	0.5287	0.2023	1.0069	2.59E-03	0.1558	2.86E-03	0.1587	0.0417	2.79E-03	0.0444	0	235.083	235.083	0.0356	6.64E-03	237.9519
Mitigated	2025	0.2992	0.0145	0.1915	5.30E-04	0.0579	3.90E-04	0.0583	0.0154	3.70E-04	0.0158	0	48.6899	48.6899	3.10E-03	1.12E-03	49.101

RESIDENTIAL CARE FACILITY — **Construction Start Date:** Monday, July 24, 2023 — **Operational Year:** 2026

Construction Unmitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Unmitigated	2023	0.1977	1.6398	1.7133	5.05E-03	0.0198	0.0629	0.0827	5.26E-03	0.0579	0.0632	0	443.8683	443.8683	0.1389	5.10E-04	447.4919
Unmitigated	2024	0.2147	1.3482	1.6644	4.33E-03	0.1231	0.0515	0.1747	0.0328	0.0474	0.0802	0	384.7348	384.7348	0.0962	2.90E-03	388.005
Unmitigated	2025	0.1585	0.1468	0.4309	1.16E-03	0.1143	6.68E-03	0.121	0.0304	6.15E-03	0.0366	0	105.5377	105.5377	9.14E-03	2.23E-03	106.43

Construction Mitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Mitigated	2023	0.0845	0.5225	2.3752	5.05E-03	0.0198	0.0132	0.0329	5.26E-03	0.0127	0.0179	0	443.8677	443.8677	0.1389	5.10E-04	447.4914
Mitigated	2024	0.1228	0.4125	1.9513	4.33E-03	0.1231	8.27E-03	0.1314	0.0328	7.99E-03	0.0408	0	384.7344	384.7344	0.0962	2.90E-03	388.0046
Mitigated	2025	0.1487	0.0389	0.4404	1.16E-03	0.1143	9.50E-04	0.1152	0.0304	9.00E-04	0.0313	0	105.5377	105.5377	9.14E-03	2.23E-03	106.43

SHUCK KNOLL — **Construction Start Date:** Monday, November 13, 2023 — **Operational Year:** 2026

Construction Unmitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Unmitigated	2023	0.07	0.6086	0.5469	0.00177	0.00418	0.0229	0.027	0.00111	0.021	0.0221	0	155.8825	155.8825	0.0494	0.00012	157.1531
Unmitigated	2024	0.3561	1.7259	2.2353	0.00603	0.1527	0.0664	0.2191	0.0406	0.0611	0.1018	0	534.9454	534.9454	0.1382	0.00346	539.4332
Unmitigated	2025	0.0385	0.0202	0.0713	0.00019	0.0203	0.00098	0.0213	0.00541	0.0009	0.00631	0	17.6297	17.6297	0.00126	0.00039	17.7783

Construction Mitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Mitigated	2023	0.0272	0.1458	0.7926	1.77E-03	4.18E-03	4.16E-03	8.34E-03	1.11E-03	4.03E-03	5.15E-03	0	155.8823	155.8823	0.0494	1.20E-04	157.1529
Mitigated	2024	0.2367	0.5815	2.7445	6.03E-03	0.1527	0.0127	0.1654	0.0406	0.0122	0.0529	0	534.9449	534.9449	0.1382	3.46E-03	539.4327
Mitigated	2025	0.0372	5.42E-03	0.0719	1.90E-04	0.0203	1.50E-04	0.0205	5.41E-03	1.40E-04	5.55E-03	0	17.6297	17.6297	1.26E-03	3.90E-04	17.7783

SEMINARY POINT — **Construction Start Date:** Monday, March 4, 2024 — **Operational Year:** 2026

Construction Unmitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Unmitigated	2024	0.3074	1.9067	2.2272	6.25E-03	0.1092	0.0731	0.1824	0.0286	0.0673	0.0959	0	552.7999	552.7999	0.1547	2.50E-03	557.4123
Unmitigated	2025	0.1414	0.2499	0.4787	1.25E-03	0.0959	0.0101	0.1061	0.0255	9.33E-03	0.0349	0	112.9287	112.9287	0.0154	1.95E-03	113.8963

Construction Mitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Mitigated	2024	0.1705	0.6031	2.8913	6.25E-03	0.107	0.0134	0.1204	0.0283	0.013	0.0413	0	552.7993	552.7993	0.1547	2.50E-03	557.4117
Mitigated	2025	0.1267	0.1073	0.5262	1.25E-03	0.0959	1.25E-03	0.0972	0.0255	1.21E-03	0.0267	0	112.9287	112.9287	0.0154	1.95E-03	113.8963

HODGES/SHUCK + REED/STORER/SHUCK — **Construction Start Date:** Monday, October 14, 2024 — **Operational Year:** 2027

Construction Unmitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Unmitigated	2024	0.119	1.0038	0.9581	3.19E-03	0.0459	0.037	0.0829	8.16E-03	0.034	0.0422	0	281.7449	281.7449	0.0868	1.77E-03	284.4431
Unmitigated	2025	0.5614	1.8822	2.7264	8.07E-03	0.2306	0.0653	0.2959	0.06	0.0601	0.1201	0	720.0938	720.0938	0.1768	9.89E-03	727.4592
Unmitigated	2026	0.4815	0.3501	0.813	2.42E-03	0.2223	0.0109	0.2332	0.0594	0.0101	0.0695	0	222.5449	222.5449	0.0177	8.42E-03	225.498
Unmitigated	2027	0.0189	5.21E-03	0.0197	6.00E-05	6.50E-03	2.50E-04	6.75E-03	1.73E-03	2.30E-04	1.96E-03	0	5.1859	5.1859	3.30E-04	1.10E-04	5.2277

Construction Mitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Mitigated	2024	0.0446	0.2512	1.4247	3.19E-03	0.0263	6.48E-03	0.0328	5.20E-03	6.34E-03	0.0115	0	281.7446	281.7446	0.0868	1.77E-03	284.4428
Mitigated	2025	0.4301	0.8287	3.5394	8.07E-03	0.2227	0.0186	0.2413	0.0588	0.0178	0.0766	0	720.0932	720.0932	0.1768	9.89E-03	727.4586
Mitigated	2026	0.4737	0.2708	0.8405	2.42E-03	0.2223	6.36E-03	0.2286	0.0594	5.91E-03	0.0653	0	222.5449	222.5449	0.0177	8.42E-03	225.4979
Mitigated	2027	0.0188	3.32E-03	0.0198	6.00E-05	6.50E-03	1.50E-04	6.65E-03	1.73E-03	1.40E-04	1.86E-03	0	5.1859	5.1859	3.30E-04	1.10E-04	5.2277

EXISTING LIBRARY — **Construction Start Date:** Monday, October 9, 2023 — **Operational Year:** 2026

Construction Unmitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Unmitigated	2023	0.035	0.2704	0.3323	9.50E-04	9.08E-03	9.17E-03	0.0183	2.42E-03	8.44E-03	0.0109	0	83.3172	83.3172	0.0248	2.20E-04	84.0024

Unmitigated	2024	0.1163	0.736	0.8902	2.53E-03	0.0822	0.0271	0.1092	0.0219	0.0251	0.047	0	223.3914	223.3914	0.04	1.70E-03	224.8986
Unmitigated	2025	0.0212	0.0476	0.1384	3.50E-04	0.034	2.37E-03	0.0364	9.06E-03	2.18E-03	0.0112	0	31.7737	31.7737	2.84E-03	6.60E-04	32.0409

Construction Mitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Mitigated	2023	0.0176	0.1511	0.4808	9.50E-04	9.08E-03	2.32E-03	0.0114	2.42E-03	2.24E-03	4.65E-03	0	83.3171	83.3171	0.0248	2.20E-04	84.0023
Mitigated	2024	0.0682	0.2194	1.1208	2.53E-03	0.0822	3.55E-03	0.0857	0.0219	3.49E-03	0.0254	0	223.3912	223.3912	0.04	1.70E-03	224.8984
Mitigated	2025	0.0178	0.0105	0.1398	3.50E-04	0.034	2.90E-04	0.0343	9.06E-03	2.80E-04	9.33E-03	0	31.7737	31.7737	2.84E-03	6.60E-04	32.0409

EXISTING ADMINISTRATION & ACADEMIC BUILDINGS — **Construction Start Date:** Monday, December 18, 2023 — **Operational Year:** 2026

Construction Unmitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Unmitigated	2023	0.0119	0.0962	0.1137	3.30E-04	1.58E-03	3.20E-03	4.79E-03	4.20E-04	2.95E-03	3.37E-03	0	28.6892	28.6892	8.91E-03	4.00E-05	28.9238
Unmitigated	2024	0.2258	1.0205	1.2373	3.53E-03	0.084	0.0353	0.1193	0.0224	0.0328	0.0552	0	312.9141	312.9141	0.0643	3.20E-03	315.4735
Unmitigated	2025	0.3314	0.0648	0.2289	6.20E-04	0.0652	3.13E-03	0.0684	0.0174	2.88E-03	0.0202	0	56.579	56.579	4.05E-03	1.26E-03	57.0561

Construction Mitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Mitigated	2023	5.82E-03	0.056	0.168	3.30E-04	1.58E-03	8.30E-04	2.42E-03	4.20E-04	8.00E-04	1.22E-03	0	28.6892	28.6892	8.91E-03	4.00E-05	28.9237
Mitigated	2024	0.1601	0.4217	1.6211	3.53E-03	0.084	6.07E-03	0.09	0.0224	5.92E-03	0.0283	0	312.9138	312.9138	0.0643	3.20E-03	315.4732
Mitigated	2025	0.327	0.0174	0.2307	6.20E-04	0.0652	4.70E-04	0.0657	0.0174	4.50E-04	0.0178	0	56.579	56.579	4.05E-03	1.26E-03	57.0561

EXISTING CAFÉ — **Construction Start Date:** Monday, February 12, 2024 — **Operational Year:** 2026

Construction Unmitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Unmitigated	2024	0.1054	0.691	0.8186	2.39E-03	0.0461	0.0246	0.0707	0.0123	0.0228	0.0351	0	211.1333	211.1333	0.0478	1.11E-03	212.6599
Unmitigated	2025	0.0517	0.0545	0.14	3.30E-04	0.0303	2.76E-03	0.033	8.05E-03	2.54E-03	0.0106	0	30.2471	30.2471	3.17E-03	5.80E-04	30.5008

Construction Mitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Mitigated	2024	0.0574	0.2412	1.1052	2.39E-03	0.0461	3.80E-03	0.0499	0.0123	3.74E-03	0.016	0	211.1331	211.1331	0.0478	1.11E-03	212.6597
Mitigated	2025	0.0477	0.0105	0.1416	3.30E-04	0.0303	2.90E-04	0.0305	8.05E-03	2.80E-04	8.33E-03	0	30.2471	30.2471	3.17E-03	5.80E-04	30.5008

NEW ADMINISTRATION ADDITION — **Construction Start Date:** Monday, December 30, 2024 — **Operational Year:** 2027

Construction Unmitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Unmitigated	2024	2.06E-03	0.0183	0.0185	5.00E-05	2.40E-04	6.80E-04	9.20E-04	6.00E-05	6.30E-04	6.90E-04	0	4.7427	4.7427	1.48E-03	1.00E-05	4.7817
Unmitigated	2025	0.1584	0.785	1.017	2.90E-03	0.0587	0.0289	0.0876	0.0156	0.0267	0.0424	0	256.197	256.197	0.0614	1.60E-03	258.2078
Unmitigated	2026	0.0376	0.024	0.0605	1.50E-04	0.0135	1.23E-03	0.0147	3.58E-03	1.13E-03	4.71E-03	0	13.1662	13.1662	1.39E-03	2.50E-04	13.2742

Construction Mitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Mitigated	2024	8.50E-04	5.64E-03	0.0257	5.00E-05	2.40E-04	1.20E-04	3.60E-04	6.00E-05	1.10E-04	1.80E-04	0	4.7427	4.7427	1.48E-03	1.00E-05	4.7817
Mitigated	2025	0.1087	0.244	1.2631	2.90E-03	0.0587	6.31E-03	0.065	0.0156	6.17E-03	0.0218	0	256.1968	256.1968	0.0614	1.60E-03	258.2075
Mitigated	2026	0.0358	4.45E-03	0.0612	1.50E-04	0.0135	1.30E-04	0.0136	3.58E-03	1.20E-04	3.71E-03	0	13.1662	13.1662	1.39E-03	2.50E-04	13.2742

NEW FITNESS & DAY CARE CENTER — **Construction Start Date:** Monday, March 10, 2025 — **Operational Year:** 2027

Construction Unmitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Unmitigated	2025	0.1208	0.7703	0.9924	2.81E-03	0.0555	0.0282	0.0837	0.0148	0.0261	0.0408	0	248.2452	248.2452	0.0599	1.27E-03	250.1231
Unmitigated	2026	0.1081	0.0683	0.1945	5.00E-04	0.0495	3.43E-03	0.0529	0.0132	3.16E-03	0.0163	0	45.0761	45.0761	4.05E-03	9.00E-04	

Construction Mitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Mitigated	2025	0.0668	0.2494	1.3149	2.81E-03	0.0555	5.41E-03	0.0609	0.0148	5.26E-03	0.02	0	248.245	248.245	0.0599	1.27E-03	250.1229
Mitigated	2026	0.1031	0.0144	0.1966	5.00E-04	0.0495	4.10E-04	0.0499	0.0132	3.90E-04	0.0136	0	45.0761	45.0761	4.05E-03	9.00E-04	45.4463

LANDSCAPING & GENERAL SITE IMPROVEMENTS — **Construction Start Date:** Monday, May 19, 2025 — **Operational Year:** 2027

Construction Unmitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Unmitigated	2025	0.1331	1.0496	1.3319	3.90E-03	0.0616	0.0381	0.0997	9.69E-03	0.0353	0.045	0	341.6918	341.6918	0.0898	4.00E-04	344.057
Unmitigated	2026	0.0723	0.5342	0.769	2.05E-03	0.0249	0.0206	0.0454	6.62E-03	0.0191	0.0258	0	179.9491	179.9491	0.0377	4.60E-04	181.0281
Unmitigated	2027	0.0111	0.06	0.1172	2.40E-04	0.0177	3.14E-03	0.0209	4.72E-03	2.89E-03	7.61E-03	0	21.6578	21.6578	3.32E-03	3.10E-04	21.8324

Construction Mitigated

	Year	ROG tons/yr	NOx tons/yr	CO tons/yr	SO2 tons/yr	FugitivePM10 tons/yr	ExhaustPM10 tons/yr	PM10 Total tons/yr	FugitivePM2.5 tons/yr	ExhaustPM2.5 tons/yr	PM2.5 Total tons/yr	Bio-CO2 MT/yr	NBio-CO2 MT/yr	TotalCO2 MT/yr	CH4 MT/yr	N2O MT/yr	CO2e MT/yr
Mitigated	2025	0.0586	0.3771	1.9285	3.90E-03	0.0383	9.19E-03	0.0475	7.17E-03	8.90E-03	0.0161	0	341.6914	341.6914	0.0898	4.00E-04	344.0566
Mitigated	2026	0.0327	0.1707	1.0323	2.05E-03	0.0249	4.66E-03	0.0295	6.62E-03	4.50E-03	0.0111	0	179.9489	179.9489	0.0377	4.60E-04	181.0279
Mitigated	2027	6.29E-03	8.46E-03	0.1191	2.40E-04	0.0177	2.50E-04	0.018	4.72E-03	2.50E-04	4.96E-03	0	21.6577	21.6577	3.32E-03	3.10E-04	21.8324

Marin NCLH - Renovations around Existing Administration & Academic Buildings - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Marin NCLH - Renovations around Existing Administration & Academic Buildings

Marin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	76.40	1000sqft	1.75	76,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2026
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Renovation of Admin and Academic Buildings

Construction Phase - Based on data request response

Off-road Equipment - based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - based on data request response

Off-road Equipment - BAsed on data request response

Off-road Equipment - Based on data request response

Trips and VMT - Based on data request response. Hauling trips are estimated using the number of dump trucks in each phase.

Architectural Coating -

Date: 10/6/2022 1:03 AM

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Woodstoves -

Area Coating - Construction run only

Energy Use - Construction run only

Water And Wastewater - Construction run only

Solid Waste - Construction run only

Construction Off-road Equipment Mitigation - 90% tier 4 construction equipments and watering exposed area twice a day mitigation applied.

Area Mitigation -

Fleet Mix -

Vehicle Trips - Construction run only

Consumer Products - Construction run only

Landscape Equipment - Construction run only

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	38200	0
tblAreaCoating	Area_Nonresidential_Interior	114600	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	10.00	180.00
tblConstructionPhase	NumDays	200.00	80.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	10.00	130.00
tblConstructionPhase	NumDays	2.00	20.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	3.58	0.00
tblEnergyUse	NT24E	4.80	0.00
tblEnergyUse	NT24NG	1.01	0.00
tblEnergyUse	T24E	3.66	0.00
tblEnergyUse	T24NG	18.14	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblOffRoadEquipment	HorsePower	231.00	130.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	63.00	49.00
tblOffRoadEquipment	HorsePower	63.00	130.00
tblOffRoadEquipment	HorsePower	63.00	49.00
tblOffRoadEquipment	HorsePower	9.00	350.00
tblOffRoadEquipment	HorsePower	231.00	367.00
tblOffRoadEquipment	HorsePower	158.00	273.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	89.00	83.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	HorsePower	402.00	430.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	84.00	197.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	49.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	130.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	71.05	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	30.00	40.00
tblTripsAndVMT	WorkerTripNumber	8.00	30.00
tblTripsAndVMT	WorkerTripNumber	24.00	40.00
tblTripsAndVMT	WorkerTripNumber	10.00	80.00
tblTripsAndVMT	WorkerTripNumber	5.00	120.00
tblVehicleTrips	ST_TR	2.21	0.00
tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	WD_TR	9.74	0.00
tblWater	IndoorWaterUseRate	13,578,858.35	0.00
tblWater	OutdoorWaterUseRate	8,322,526.08	0.00

2.0 Emissions Summary

2.1 Overall Construction

Marin NCLH - Renovations around Existing Administration & Academic Buildings - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0119	0.0962	0.1137	3.3000e-004	1.5800e-003	3.2000e-003	4.7900e-003	4.2000e-004	2.9500e-003	3.3700e-003	0.0000	28.6892	28.6892	8.9100e-003	4.0000e-005	28.9238
2024	0.2258	1.0205	1.2373	3.5300e-003	0.0840	0.0353	0.1193	0.0224	0.0328	0.0552	0.0000	312.9141	312.9141	0.0643	3.2000e-003	315.4735
2025	0.3314	0.0648	0.2289	6.2000e-004	0.0652	3.1300e-003	0.0684	0.0174	2.8800e-003	0.0202	0.0000	56.5790	56.5790	4.0500e-003	1.2600e-003	57.0561
Maximum	**0.3314**	**1.0205**	**1.2373**	**3.5300e-003**	**0.0840**	**0.0353**	**0.1193**	**0.0224**	**0.0328**	**0.0552**	**0.0000**	**312.9141**	**312.9141**	**0.0643**	**3.2000e-003**	**315.4735**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	5.8200e-003	0.0560	0.1680	3.3000e-004	1.5800e-003	8.3000e-004	2.4200e-003	4.2000e-004	8.0000e-004	1.2200e-003	0.0000	28.6892	28.6892	8.9100e-003	4.0000e-005	28.9237
2024	0.1601	0.4217	1.6211	3.5300e-003	0.0840	6.0700e-003	0.0900	0.0224	5.9200e-003	0.0283	0.0000	312.9138	312.9138	0.0643	3.2000e-003	315.4732
2025	0.3270	0.0174	0.2307	6.2000e-004	0.0652	4.7000e-004	0.0657	0.0174	4.5000e-004	0.0178	0.0000	56.5790	56.5790	4.0500e-003	1.2600e-003	57.0561
Maximum	**0.3270**	**0.4217**	**1.6211**	**3.5300e-003**	**0.0840**	**6.0700e-003**	**0.0900**	**0.0224**	**5.9200e-003**	**0.0283**	**0.0000**	**312.9138**	**312.9138**	**0.0643**	**3.2000e-003**	**315.4732**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**13.38**	**58.10**	**-27.84**	**0.00**	**0.00**	**82.30**	**17.81**	**0.00**	**81.42**	**39.90**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**12-18-2023**	**3-17-2024**	0.4794	0.2692
2	**3-18-2024**	**6-17-2024**	0.2450	0.1234
3	**6-18-2024**	**9-17-2024**	0.2258	0.0654
4	**9-18-2024**	**12-17-2024**	0.3200	0.1391
5	**12-18-2024**	**3-17-2025**	0.2115	0.1686
6	**3-18-2025**	**6-17-2025**	0.1887	0.1640
7	**6-18-2025**	**9-17-2025**	0.0491	0.0427
		Highest	0.4794	0.2692

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/18/2023	2/9/2024	5	40	

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2	Utilities	Site Preparation	2/12/2024	3/8/2024	5	20	
3	Structure Retrofit	Building Construction	3/11/2024	6/28/2024	5	80	
4	Exterior Finishes	Paving	7/1/2024	12/27/2024	5	130	
5	Interior Finishes	Architectural Coating	11/4/2024	7/11/2025	5	180	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 114,600; Non-Residential Outdoor: 38,200; Striped Parking Area: 0 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	2	8.00	273	0.38
Demolition	Off-Highway Trucks	2	8.00	430	0.38
Demolition	Skid Steer Loaders	4	8.00	74	0.37
Demolition	Skid Steer Loaders	4	8.00	49	0.37
Utilities	Off-Highway Trucks	1	8.00	350	0.38
Utilities	Skid Steer Loaders	1	8.00	74	0.37
Utilities	Tractors/Loaders/Backhoes	1	8.00	104	0.37
Structure Retrofit	Aerial Lifts	1	8.00	49	0.31
Structure Retrofit	Cement and Mortar Mixers	2	8.00	350	0.56
Structure Retrofit	Cranes	1	4.00	130	0.29
Structure Retrofit	Pumps	1	8.00	197	0.74
Structure Retrofit	Skid Steer Loaders	1	8.00	74	0.37
Exterior Finishes	Aerial Lifts	1	8.00	130	0.31
Exterior Finishes	Aerial Lifts	1	8.00	49	0.31
Exterior Finishes	Cranes	1	8.00	367	0.29
Exterior Finishes	Forklifts	1	8.00	83	0.20

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Interior Finishes	Forklifts	1	8.00	83	0.20
Interior Finishes	Skid Steer Loaders	1	8.00	130	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	12	40.00	0.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Utilities	3	30.00	0.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Structure Retrofit	6	40.00	13.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Exterior Finishes	4	80.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Interior Finishes	2	120.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0114	0.0958	0.1093	3.1000e-004		3.2000e-003	3.2000e-003		2.9400e-003	2.9400e-003	0.0000	27.4202	27.4202	8.8700e-003	0.0000	27.6419
Total	**0.0114**	**0.0958**	**0.1093**	**3.1000e-004**		**3.2000e-003**	**3.2000e-003**		**2.9400e-003**	**2.9400e-003**	**0.0000**	**27.4202**	**27.4202**	**8.8700e-003**	**0.0000**	**27.6419**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	8.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0314	0.0314	0.0000	1.0000e-005	0.0330
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	3.7000e-004	4.3200e-003	1.0000e-005	1.5800e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.2376	1.2376	4.0000e-005	3.0000e-005	1.2489
Total	**5.6000e-004**	**4.5000e-004**	**4.3400e-003**	**1.0000e-005**	**1.5900e-003**	**1.0000e-005**	**1.5900e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.2690**	**1.2690**	**4.0000e-005**	**4.0000e-005**	**1.2819**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.2600e-003	0.0555	0.1636	3.1000e-004		8.2000e-004	8.2000e-004		7.9000e-004	7.9000e-004	0.0000	27.4202	27.4202	8.8700e-003	0.0000	27.6419
Total	**5.2600e-003**	**0.0555**	**0.1636**	**3.1000e-004**		**8.2000e-004**	**8.2000e-004**		**7.9000e-004**	**7.9000e-004**	**0.0000**	**27.4202**	**27.4202**	**8.8700e-003**	**0.0000**	**27.6419**

Mitigated Construction Off-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	8.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0314	0.0314	0.0000	1.0000e-005	0.0330
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	3.7000e-004	4.3200e-003	1.0000e-005	1.5800e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.2376	1.2376	4.0000e-005	3.0000e-005	1.2489
Total	**5.6000e-004**	**4.5000e-004**	**4.3400e-003**	**1.0000e-005**	**1.5900e-003**	**1.0000e-005**	**1.5900e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.2690**	**1.2690**	**4.0000e-005**	**4.0000e-005**	**1.2819**

3.2 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0336	0.2731	0.3271	9.4000e-004		8.9400e-003	8.9400e-003		8.2200e-003	8.2200e-003	0.0000	82.2768	82.2768	0.0266	0.0000	82.9420
Total	**0.0336**	**0.2731**	**0.3271**	**9.4000e-004**		**8.9400e-003**	**8.9400e-003**		**8.2200e-003**	**8.2200e-003**	**0.0000**	**82.2768**	**82.2768**	**0.0266**	**0.0000**	**82.9420**

Unmitigated Construction Off-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	2.2000e-004	6.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0926	0.0926	1.0000e-005	1.0000e-005	0.0971
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5700e-003	9.8000e-004	0.0121	4.0000e-005	4.7300e-003	2.0000e-005	4.7500e-003	1.2600e-003	2.0000e-005	1.2800e-003	0.0000	3.5935	3.5935	1.0000e-004	1.0000e-004	3.6251
Total	**1.5700e-003**	**1.2000e-003**	**0.0121**	**4.0000e-005**	**4.7600e-003**	**2.0000e-005**	**4.7800e-003**	**1.2700e-003**	**2.0000e-005**	**1.2900e-003**	**0.0000**	**3.6860**	**3.6860**	**1.1000e-004**	**1.1000e-004**	**3.7222**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0157	0.1657	0.4910	9.4000e-004		2.3900e-003	2.3900e-003		2.3100e-003	2.3100e-003	0.0000	82.2767	82.2767	0.0266	0.0000	82.9419
Total	**0.0157**	**0.1657**	**0.4910**	**9.4000e-004**		**2.3900e-003**	**2.3900e-003**		**2.3100e-003**	**2.3100e-003**	**0.0000**	**82.2767**	**82.2767**	**0.0266**	**0.0000**	**82.9419**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Hauling	0.0000	2.2000e-004	6.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0926	0.0926	1.0000e-005	1.0000e-005	0.0971
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5700e-003	9.8000e-004	0.0121	4.0000e-005	4.7300e-003	2.0000e-005	4.7500e-003	1.2600e-003	2.0000e-005	1.2800e-003	0.0000	3.5935	3.5935	1.0000e-004	1.0000e-004	3.6251
Total	**1.5700e-003**	**1.2000e-003**	**0.0121**	**4.0000e-005**	**4.7600e-003**	**2.0000e-005**	**4.7800e-003**	**1.2700e-003**	**2.0000e-005**	**1.2900e-003**	**0.0000**	**3.6860**	**3.6860**	**1.1000e-004**	**1.1000e-004**	**3.7222**

3.3 Utilities - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.5800e-003	0.0539	0.0680	1.7000e-004		2.0600e-003	2.0600e-003		1.8900e-003	1.8900e-003	0.0000	15.1193	15.1193	4.8900e-003	0.0000	15.2415
Total	**6.5800e-003**	**0.0539**	**0.0680**	**1.7000e-004**	**0.0000**	**2.0600e-003**	**2.0600e-003**	**0.0000**	**1.8900e-003**	**1.8900e-003**	**0.0000**	**15.1193**	**15.1193**	**4.8900e-003**	**0.0000**	**15.2415**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0617	0.0617	0.0000	1.0000e-005	0.0647
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	4.9000e-004	6.0300e-003	2.0000e-005	2.3600e-003	1.0000e-005	2.3800e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	1.7967	1.7967	5.0000e-005	5.0000e-005	1.8125
Total	**7.8000e-004**	**6.4000e-004**	**6.0700e-003**	**2.0000e-005**	**2.3800e-003**	**1.0000e-005**	**2.4000e-003**	**6.3000e-004**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**1.8584**	**1.8584**	**5.0000e-005**	**6.0000e-005**	**1.8773**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4300e-003	0.0200	0.0940	1.7000e-004		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	15.1193	15.1193	4.8900e-003	0.0000	15.2415
Total	**2.4300e-003**	**0.0200**	**0.0940**	**1.7000e-004**	**0.0000**	**3.5000e-004**	**3.5000e-004**	**0.0000**	**3.5000e-004**	**3.5000e-004**	**0.0000**	**15.1193**	**15.1193**	**4.8900e-003**	**0.0000**	**15.2415**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0617	0.0617	0.0000	1.0000e-005	0.0647
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	4.9000e-004	6.0300e-003	2.0000e-005	2.3600e-003	1.0000e-005	2.3800e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	1.7967	1.7967	5.0000e-005	5.0000e-005	1.8125
Total	**7.8000e-004**	**6.4000e-004**	**6.0700e-003**	**2.0000e-005**	**2.3800e-003**	**1.0000e-005**	**2.4000e-003**	**6.3000e-004**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**1.8584**	**1.8584**	**5.0000e-005**	**6.0000e-005**	**1.8773**

3.4 Structure Retrofit - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0269	0.2401	0.2462	8.3000e-004		7.5500e-003	7.5500e-003		7.2200e-003	7.2200e-003	0.0000	72.1383	72.1383	7.5800e-003	0.0000	72.3279
Total	**0.0269**	**0.2401**	**0.2462**	**8.3000e-004**		**7.5500e-003**	**7.5500e-003**		**7.2200e-003**	**7.2200e-003**	**0.0000**	**72.1383**	**72.1383**	**7.5800e-003**	**0.0000**	**72.3279**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.8000e-004	0.0245	8.9700e-003	1.1000e-004	3.4000e-003	1.4000e-004	3.5400e-003	9.8000e-004	1.3000e-004	1.1100e-003	0.0000	10.6998	10.6998	4.1000e-004	1.5100e-003	11.1598
Worker	4.1800e-003	2.6100e-003	0.0322	1.0000e-004	0.0126	6.0000e-005	0.0127	3.3500e-003	6.0000e-005	3.4100e-003	0.0000	9.5826	9.5826	2.7000e-004	2.6000e-004	9.6668
Total	**4.8600e-003**	**0.0271**	**0.0412**	**2.1000e-004**	**0.0160**	**2.0000e-004**	**0.0162**	**4.3300e-003**	**1.9000e-004**	**4.5200e-003**	**0.0000**	**20.2823**	**20.2823**	**6.8000e-004**	**1.7700e-003**	**20.8266**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0107	0.1083	0.3885	8.3000e-004		1.4600e-003	1.4600e-003		1.4400e-003	1.4400e-003	0.0000	72.1382	72.1382	7.5800e-003	0.0000	72.3278
Total	**0.0107**	**0.1083**	**0.3885**	**8.3000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4400e-003**	**1.4400e-003**	**0.0000**	**72.1382**	**72.1382**	**7.5800e-003**	**0.0000**	**72.3278**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Vendor	6.8000e-004	0.0245	8.9700e-003	1.1000e-004	3.4000e-003	1.4000e-004	3.5400e-003	9.8000e-004	1.3000e-004	1.1100e-003	0.0000	10.6998	10.6998	4.1000e-004	1.5100e-003	11.1598
Worker	4.1800e-003	2.6100e-003	0.0322	1.0000e-004	0.0126	6.0000e-005	0.0127	3.3500e-003	6.0000e-005	3.4100e-003	0.0000	9.5826	9.5826	2.7000e-004	2.6000e-004	9.6668
Total	**4.8600e-003**	**0.0271**	**0.0412**	**2.1000e-004**	**0.0160**	**2.0000e-004**	**0.0162**	**4.3300e-003**	**1.9000e-004**	**4.5200e-003**	**0.0000**	**20.2823**	**20.2823**	**6.8000e-004**	**1.7700e-003**	**20.8266**

3.5 Exterior Finishes - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0366	0.3946	0.3591	7.8000e-004		0.0152	0.0152		0.0140	0.0140	0.0000	68.6871	68.6871	0.0222	0.0000	69.2425
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0366**	**0.3946**	**0.3591**	**7.8000e-004**		**0.0152**	**0.0152**		**0.0140**	**0.0140**	**0.0000**	**68.6871**	**68.6871**	**0.0222**	**0.0000**	**69.2425**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0136	8.4700e-003	0.1046	3.4000e-004	0.0410	2.1000e-004	0.0412	0.0109	1.9000e-004	0.0111	0.0000	31.1433	31.1433	8.7000e-004	8.5000e-004	31.4172
Total	**0.0136**	**8.4700e-003**	**0.1046**	**3.4000e-004**	**0.0410**	**2.1000e-004**	**0.0412**	**0.0109**	**1.9000e-004**	**0.0111**	**0.0000**	**31.1433**	**31.1433**	**8.7000e-004**	**8.5000e-004**	**31.4172**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0106	0.0846	0.4102	7.8000e-004		1.2700e-003	1.2700e-003		1.2700e-003	1.2700e-003	0.0000	68.6870	68.6870	0.0222	0.0000	69.2424
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0106**	**0.0846**	**0.4102**	**7.8000e-004**		**1.2700e-003**	**1.2700e-003**		**1.2700e-003**	**1.2700e-003**	**0.0000**	**68.6870**	**68.6870**	**0.0222**	**0.0000**	**69.2424**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0136	8.4700e-003	0.1046	3.4000e-004	0.0410	2.1000e-004	0.0412	0.0109	1.9000e-004	0.0111	0.0000	31.1433	31.1433	8.7000e-004	8.5000e-004	31.4172
Total	**0.0136**	**8.4700e-003**	**0.1046**	**3.4000e-004**	**0.0410**	**2.1000e-004**	**0.0412**	**0.0109**	**1.9000e-004**	**0.0111**	**0.0000**	**31.1433**	**31.1433**	**8.7000e-004**	**8.5000e-004**	**31.4172**

3.6 Interior Finishes - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0930					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8400e-003	0.0173	0.0223	3.0000e-005		1.0000e-003	1.0000e-003		9.2000e-004	9.2000e-004	0.0000	2.6300	2.6300	8.5000e-004	0.0000	2.6513
Total	**0.0948**	**0.0173**	**0.0223**	**3.0000e-005**		**1.0000e-003**	**1.0000e-003**		**9.2000e-004**	**9.2000e-004**	**0.0000**	**2.6300**	**2.6300**	**8.5000e-004**	**0.0000**	**2.6513**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Renovations around Existing Administration & Academic Buildings - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5900e-003	4.1100e-003	0.0507	1.6000e-004	0.0199	1.0000e-004	0.0200	5.2800e-003	9.0000e-005	5.3700e-003	0.0000	15.0925	15.0925	4.2000e-004	4.1000e-004	15.2252
Total	**6.5900e-003**	**4.1100e-003**	**0.0507**	**1.6000e-004**	**0.0199**	**1.0000e-004**	**0.0200**	**5.2800e-003**	**9.0000e-005**	**5.3700e-003**	**0.0000**	**15.0925**	**15.0925**	**4.2000e-004**	**4.1000e-004**	**15.2252**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0930					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7000e-004	1.6000e-003	0.0228	3.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	2.6300	2.6300	8.5000e-004	0.0000	2.6513
Total	**0.0933**	**1.6000e-003**	**0.0228**	**3.0000e-005**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**2.6300**	**2.6300**	**8.5000e-004**	**0.0000**	**2.6513**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Renovations around Existing Administration & Academic Buildings - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5900e-003	4.1100e-003	0.0507	1.6000e-004	0.0199	1.0000e-004	0.0200	5.2800e-003	9.0000e-005	5.3700e-003	0.0000	15.0925	15.0925	4.2000e-004	4.1000e-004	15.2252
Total	**6.5900e-003**	**4.1100e-003**	**0.0507**	**1.6000e-004**	**0.0199**	**1.0000e-004**	**0.0200**	**5.2800e-003**	**9.0000e-005**	**5.3700e-003**	**0.0000**	**15.0925**	**15.0925**	**4.2000e-004**	**4.1000e-004**	**15.2252**

3.6 Interior Finishes - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3054					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5900e-003	0.0527	0.0730	1.0000e-004		2.8200e-003	2.8200e-003		2.5900e-003	2.5900e-003	0.0000	8.6414	8.6414	2.7900e-003	0.0000	8.7113
Total	**0.3110**	**0.0527**	**0.0730**	**1.0000e-004**		**2.8200e-003**	**2.8200e-003**		**2.5900e-003**	**2.5900e-003**	**0.0000**	**8.6414**	**8.6414**	**2.7900e-003**	**0.0000**	**8.7113**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Renovations around Existing Administration & Academic Buildings - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0204	0.0121	0.1559	5.2000e-004	0.0652	3.1000e-004	0.0655	0.0174	2.9000e-004	0.0176	0.0000	47.9375	47.9375	1.2500e-003	1.2600e-003	48.3448
Total	**0.0204**	**0.0121**	**0.1559**	**5.2000e-004**	**0.0652**	**3.1000e-004**	**0.0655**	**0.0174**	**2.9000e-004**	**0.0176**	**0.0000**	**47.9375**	**47.9375**	**1.2500e-003**	**1.2600e-003**	**48.3448**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3054					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	5.2500e-003	0.0748	1.0000e-004		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	8.6414	8.6414	2.7900e-003	0.0000	8.7113
Total	**0.3066**	**5.2500e-003**	**0.0748**	**1.0000e-004**		**1.6000e-004**	**1.6000e-004**		**1.6000e-004**	**1.6000e-004**	**0.0000**	**8.6414**	**8.6414**	**2.7900e-003**	**0.0000**	**8.7113**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Renovations around Existing Administration & Academic Buildings - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0204	0.0121	0.1559	5.2000e-004	0.0652	3.1000e-004	0.0655	0.0174	2.9000e-004	0.0176	0.0000	47.9375	47.9375	1.2500e-003	1.2600e-003	48.3448
Total	**0.0204**	**0.0121**	**0.1559**	**5.2000e-004**	**0.0652**	**3.1000e-004**	**0.0655**	**0.0174**	**2.9000e-004**	**0.0176**	**0.0000**	**47.9375**	**47.9375**	**1.2500e-003**	**1.2600e-003**	**48.3448**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Marin NCLH - Renovations around Existing Administration & Academic Buildings - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.543132	0.061625	0.200801	0.122893	0.023519	0.005568	0.006832	0.003721	0.000658	0.000395	0.027388	0.000726	0.002

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Marin NCLH - Renovations around Existing Administration & Academic Buildings - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

Marin NCLH - Renovations around Existing Administration & Academic Buildings - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	kWh/yr	MT/yr			
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Marin NCLH - Renovations around Existing Administration & Academic Buildings - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					

Marin NCLH - Renovations around Existing Administration & Academic Buildings - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e

Marin NCLH - Renovations around Existing Administration & Academic Buildings - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	Mgal	MT/yr			
General Office Building	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e

Marin NCLH - Renovations around Existing Administration & Academic Buildings - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Marin NCLH - Renovations around Existing Administration & Academic Buildings - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Marin NCLH - Maintenance and Renovations around Cafe - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Marin NCLH - Maintenance and Renovations around Cafe

Marin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Fast Food Restaurant w/o Drive Thru	10.00	1000sqft	0.23	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2026
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Renovations around Cafe

Construction Phase - Based on data request response

Off-road Equipment - based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - based on data request response

Off-road Equipment - BAsed on data request response

Off-road Equipment - Based on data request response

Trips and VMT - Based on data request response. Hauling trips are estimated using the number of dump trucks in each phase

Architectural Coating -

Date: 10/6/2022 12:16 AM

Marin NCLH - Maintenance and Renovations around Cafe - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Woodstoves -

Area Coating - Construction run only

Energy Use - Construction

Water And Wastewater - Construction run only

Solid Waste - Construction run only

Construction Off-road Equipment Mitigation - 90% tier 4 construction equipments and watering exposed area twice a day mitigation applied.

Area Mitigation -

Fleet Mix -

Vehicle Trips - Construction run only

Consumer Products - Construction run only

Landscape Equipment - Construction run only

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	5000	0
tblAreaCoating	Area_Nonresidential_Interior	15000	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Marin NCLH - Maintenance and Renovations around Cafe - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	180.00
tblConstructionPhase	NumDays	100.00	50.00
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	5.00	100.00
tblConstructionPhase	NumDays	1.00	20.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	5.34	0.00
tblEnergyUse	NT24E	20.97	0.00
tblEnergyUse	NT24NG	128.02	0.00
tblEnergyUse	T24E	2.38	0.00
tblEnergyUse	T24NG	39.50	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	63.00	49.00
tblOffRoadEquipment	HorsePower	63.00	130.00
tblOffRoadEquipment	HorsePower	63.00	49.00
tblOffRoadEquipment	HorsePower	9.00	350.00
tblOffRoadEquipment	HorsePower	231.00	367.00
tblOffRoadEquipment	HorsePower	158.00	273.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	402.00	430.00

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tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	84.00	197.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	130.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	115.19	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	15.00	30.00
tblTripsAndVMT	WorkerTripNumber	8.00	30.00
tblTripsAndVMT	WorkerTripNumber	4.00	40.00
tblTripsAndVMT	WorkerTripNumber	10.00	50.00
tblTripsAndVMT	WorkerTripNumber	1.00	60.00
tblVehicleTrips	ST_TR	696.00	0.00
tblVehicleTrips	SU_TR	500.00	0.00
tblVehicleTrips	WD_TR	346.23	0.00
tblWater	IndoorWaterUseRate	3,035,337.12	0.00
tblWater	OutdoorWaterUseRate	193,744.92	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.1054	0.6910	0.8186	2.3900e-003	0.0461	0.0246	0.0707	0.0123	0.0228	0.0351	0.0000	211.1333	211.1333	0.0478	1.1100e-003	212.6599
2025	0.0517	0.0545	0.1400	3.3000e-004	0.0303	2.7600e-003	0.0330	8.0500e-003	2.5400e-003	0.0106	0.0000	30.2471	30.2471	3.1700e-003	5.8000e-004	30.5008
Maximum	**0.1054**	**0.6910**	**0.8186**	**2.3900e-003**	**0.0461**	**0.0246**	**0.0707**	**0.0123**	**0.0228**	**0.0351**	**0.0000**	**211.1333**	**211.1333**	**0.0478**	**1.1100e-003**	**212.6599**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0574	0.2412	1.1052	2.3900e-003	0.0461	3.8000e-003	0.0499	0.0123	3.7400e-003	0.0160	0.0000	211.1331	211.1331	0.0478	1.1100e-003	212.6597
2025	0.0477	0.0105	0.1416	3.3000e-004	0.0303	2.9000e-004	0.0305	8.0500e-003	2.8000e-004	8.3300e-003	0.0000	30.2471	30.2471	3.1700e-003	5.8000e-004	30.5008
Maximum	**0.0574**	**0.2412**	**1.1052**	**2.3900e-003**	**0.0461**	**3.8000e-003**	**0.0499**	**0.0123**	**3.7400e-003**	**0.0160**	**0.0000**	**211.1331**	**211.1331**	**0.0478**	**1.1100e-003**	**212.6597**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**33.13**	**66.24**	**-30.07**	**0.00**	**0.00**	**85.05**	**22.42**	**0.00**	**84.14**	**46.66**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**12-2-2024**	**3-1-2025**	0.0550	0.0301
2	**3-2-2025**	**6-1-2025**	0.0547	0.0300

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3	**6-2-2025**	**9-1-2025**	0.0154	0.0084
		Highest	0.0550	0.0301

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/12/2024	3/22/2024	5	30	
2	Utilities	Site Preparation	3/25/2024	4/19/2024	5	20	
3	Structure Retrofit	Building Construction	4/22/2024	6/28/2024	5	50	
4	Exterior Finishes	Paving	7/1/2024	11/15/2024	5	100	
5	Interior Finishes	Architectural Coating	10/21/2024	6/27/2025	5	180	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 15,000; Non-Residential Outdoor: 5,000; Striped Parking Area: 0 (Architectural

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OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Aerial Lifts	2	8.00	49	0.31
Demolition	Excavators	1	8.00	273	0.38
Demolition	Off-Highway Trucks	1	8.00	430	0.38
Demolition	Skid Steer Loaders	2	8.00	74	0.37
Utilities	Off-Highway Trucks	1	8.00	350	0.38
Utilities	Skid Steer Loaders	1	8.00	74	0.37
Utilities	Tractors/Loaders/Backhoes	1	8.00	104	0.37
Structure Retrofit	Cement and Mortar Mixers	1	8.00	350	0.56
Structure Retrofit	Off-Highway Trucks	1	8.00	350	0.38
Structure Retrofit	Pumps	1	8.00	197	0.74
Structure Retrofit	Skid Steer Loaders	1	8.00	74	0.37
Exterior Finishes	Aerial Lifts	1	8.00	130	0.31
Exterior Finishes	Aerial Lifts	1	8.00	49	0.31
Exterior Finishes	Cranes	1	8.00	367	0.29
Exterior Finishes	Forklifts	1	8.00	83	0.20
Interior Finishes	Forklifts	1	8.00	83	0.20
Interior Finishes	Skid Steer Loaders	1	8.00	130	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	30.00	0.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Utilities	3	30.00	0.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Structure Retrofit	4	40.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Exterior Finishes	4	50.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Interior Finishes	2	60.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0147	0.1277	0.1534	4.6000e-004		3.7900e-003	3.7900e-003		3.4900e-003	3.4900e-003	0.0000	40.3737	40.3737	0.0131	0.0000	40.7001
Total	**0.0147**	**0.1277**	**0.1534**	**4.6000e-004**		**3.7900e-003**	**3.7900e-003**		**3.4900e-003**	**3.4900e-003**	**0.0000**	**40.3737**	**40.3737**	**0.0131**	**0.0000**	**40.7001**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0617	0.0617	0.0000	1.0000e-005	0.0647
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1800e-003	7.3000e-004	9.0500e-003	3.0000e-005	3.5400e-003	2.0000e-005	3.5600e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	2.6951	2.6951	7.0000e-005	7.0000e-005	2.7188

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Total	**1.1800e-003**	**8.8000e-004**	**9.0900e-003**	**3.0000e-005**	**3.5600e-003**	**2.0000e-005**	**3.5800e-003**	**9.4000e-004**	**2.0000e-005**	**9.7000e-004**	**0.0000**	**2.7568**	**2.7568**	**7.0000e-005**	**8.0000e-005**	**2.7835**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.1000e-003	0.0782	0.2388	4.6000e-004		9.3000e-004	9.3000e-004		9.1000e-004	9.1000e-004	0.0000	40.3736	40.3736	0.0131	0.0000	40.7001
Total	**7.1000e-003**	**0.0782**	**0.2388**	**4.6000e-004**		**9.3000e-004**	**9.3000e-004**		**9.1000e-004**	**9.1000e-004**	**0.0000**	**40.3736**	**40.3736**	**0.0131**	**0.0000**	**40.7001**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0617	0.0617	0.0000	1.0000e-005	0.0647
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1800e-003	7.3000e-004	9.0500e-003	3.0000e-005	3.5400e-003	2.0000e-005	3.5600e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	2.6951	2.6951	7.0000e-005	7.0000e-005	2.7188
Total	**1.1800e-003**	**8.8000e-004**	**9.0900e-003**	**3.0000e-005**	**3.5600e-003**	**2.0000e-005**	**3.5800e-003**	**9.4000e-004**	**2.0000e-005**	**9.7000e-004**	**0.0000**	**2.7568**	**2.7568**	**7.0000e-005**	**8.0000e-005**	**2.7835**

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3.3 Utilities - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.5800e-003	0.0539	0.0680	1.7000e-004		2.0600e-003	2.0600e-003		1.8900e-003	1.8900e-003	0.0000	15.1193	15.1193	4.8900e-003	0.0000	15.2415
Total	**6.5800e-003**	**0.0539**	**0.0680**	**1.7000e-004**	**0.0000**	**2.0600e-003**	**2.0600e-003**	**0.0000**	**1.8900e-003**	**1.8900e-003**	**0.0000**	**15.1193**	**15.1193**	**4.8900e-003**	**0.0000**	**15.2415**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0617	0.0617	0.0000	1.0000e-005	0.0647
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	4.9000e-004	6.0300e-003	2.0000e-005	2.3600e-003	1.0000e-005	2.3800e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	1.7967	1.7967	5.0000e-005	5.0000e-005	1.8125
Total	**7.8000e-004**	**6.4000e-004**	**6.0700e-003**	**2.0000e-005**	**2.3800e-003**	**1.0000e-005**	**2.4000e-003**	**6.3000e-004**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**1.8584**	**1.8584**	**5.0000e-005**	**6.0000e-005**	**1.8773**

Date: 10/6/2022 12:16 AM

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Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0203	0.0942	1.7000e-004		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004	0.0000	15.1193	15.1193	4.8900e-003	0.0000	15.2415
Total	**2.4200e-003**	**0.0203**	**0.0942**	**1.7000e-004**	**0.0000**	**3.3000e-004**	**3.3000e-004**	**0.0000**	**3.3000e-004**	**3.3000e-004**	**0.0000**	**15.1193**	**15.1193**	**4.8900e-003**	**0.0000**	**15.2415**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0617	0.0617	0.0000	1.0000e-005	0.0647
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	4.9000e-004	6.0300e-003	2.0000e-005	2.3600e-003	1.0000e-005	2.3800e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	1.7967	1.7967	5.0000e-005	5.0000e-005	1.8125
Total	**7.8000e-004**	**6.4000e-004**	**6.0700e-003**	**2.0000e-005**	**2.3800e-003**	**1.0000e-005**	**2.4000e-003**	**6.3000e-004**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**1.8584**	**1.8584**	**5.0000e-005**	**6.0000e-005**	**1.8773**

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3.4 Structure Retrofit - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0234	0.1724	0.1756	7.3000e-004		5.5500e-003	5.5500e-003		5.2800e-003	5.2800e-003	0.0000	63.5991	63.5991	0.0107	0.0000	63.8672
Total	**0.0234**	**0.1724**	**0.1756**	**7.3000e-004**		**5.5500e-003**	**5.5500e-003**		**5.2800e-003**	**5.2800e-003**	**0.0000**	**63.5991**	**63.5991**	**0.0107**	**0.0000**	**63.8672**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-005	2.3500e-003	8.6000e-004	1.0000e-005	3.3000e-004	1.0000e-005	3.4000e-004	9.0000e-005	1.0000e-005	1.1000e-004	0.0000	1.0288	1.0288	4.0000e-005	1.5000e-004	1.0731
Worker	2.6100e-003	1.6300e-003	0.0201	7.0000e-005	7.8800e-003	4.0000e-005	7.9200e-003	2.1000e-003	4.0000e-005	2.1300e-003	0.0000	5.9891	5.9891	1.7000e-004	1.6000e-004	6.0418
Total	**2.6800e-003**	**3.9800e-003**	**0.0210**	**8.0000e-005**	**8.2100e-003**	**5.0000e-005**	**8.2600e-003**	**2.1900e-003**	**5.0000e-005**	**2.2400e-003**	**0.0000**	**7.0179**	**7.0179**	**2.1000e-004**	**3.1000e-004**	**7.1148**

Marin NCLH - Maintenance and Renovations around Cafe - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.8900e-003	0.0631	0.3140	7.3000e-004		1.2100e-003	1.2100e-003		1.2000e-003	1.2000e-003	0.0000	63.5990	63.5990	0.0107	0.0000	63.8671
Total	**8.8900e-003**	**0.0631**	**0.3140**	**7.3000e-004**		**1.2100e-003**	**1.2100e-003**		**1.2000e-003**	**1.2000e-003**	**0.0000**	**63.5990**	**63.5990**	**0.0107**	**0.0000**	**63.8671**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-005	2.3500e-003	8.6000e-004	1.0000e-005	3.3000e-004	1.0000e-005	3.4000e-004	9.0000e-005	1.0000e-005	1.1000e-004	0.0000	1.0288	1.0288	4.0000e-005	1.5000e-004	1.0731
Worker	2.6100e-003	1.6300e-003	0.0201	7.0000e-005	7.8800e-003	4.0000e-005	7.9200e-003	2.1000e-003	4.0000e-005	2.1300e-003	0.0000	5.9891	5.9891	1.7000e-004	1.6000e-004	6.0418
Total	**2.6800e-003**	**3.9800e-003**	**0.0210**	**8.0000e-005**	**8.2100e-003**	**5.0000e-005**	**8.2600e-003**	**2.1900e-003**	**5.0000e-005**	**2.2400e-003**	**0.0000**	**7.0179**	**7.0179**	**2.1000e-004**	**3.1000e-004**	**7.1148**

3.5 Exterior Finishes - 2024

Unmitigated Construction On-Site

Marin NCLH - Maintenance and Renovations around Cafe - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0282	0.3035	0.2762	6.0000e-004		0.0117	0.0117		0.0108	0.0108	0.0000	52.8362	52.8362	0.0171	0.0000	53.2634
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0282**	**0.3035**	**0.2762**	**6.0000e-004**		**0.0117**	**0.0117**		**0.0108**	**0.0108**	**0.0000**	**52.8362**	**52.8362**	**0.0171**	**0.0000**	**53.2634**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5300e-003	4.0700e-003	0.0503	1.6000e-004	0.0197	1.0000e-004	0.0198	5.2400e-003	9.0000e-005	5.3300e-003	0.0000	14.9728	14.9728	4.2000e-004	4.1000e-004	15.1044
Total	**6.5300e-003**	**4.0700e-003**	**0.0503**	**1.6000e-004**	**0.0197**	**1.0000e-004**	**0.0198**	**5.2400e-003**	**9.0000e-005**	**5.3300e-003**	**0.0000**	**14.9728**	**14.9728**	**4.2000e-004**	**4.1000e-004**	**15.1044**

Mitigated Construction On-Site

Marin NCLH - Maintenance and Renovations around Cafe - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2500e-003	0.0655	0.3123	6.0000e-004		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	52.8362	52.8362	0.0171	0.0000	53.2634
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.2500e-003**	**0.0655**	**0.3123**	**6.0000e-004**		**1.0200e-003**	**1.0200e-003**		**1.0200e-003**	**1.0200e-003**	**0.0000**	**52.8362**	**52.8362**	**0.0171**	**0.0000**	**53.2634**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5300e-003	4.0700e-003	0.0503	1.6000e-004	0.0197	1.0000e-004	0.0198	5.2400e-003	9.0000e-005	5.3300e-003	0.0000	14.9728	14.9728	4.2000e-004	4.1000e-004	15.1044
Total	**6.5300e-003**	**4.0700e-003**	**0.0503**	**1.6000e-004**	**0.0197**	**1.0000e-004**	**0.0198**	**5.2400e-003**	**9.0000e-005**	**5.3300e-003**	**0.0000**	**14.9728**	**14.9728**	**4.2000e-004**	**4.1000e-004**	**15.1044**

3.6 Interior Finishes - 2024

Unmitigated Construction On-Site

Date: 10/6/2022 12:16 AM

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0151					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2800e-003	0.0214	0.0276	4.0000e-005		1.2400e-003	1.2400e-003		1.1400e-003	1.1400e-003	0.0000	3.2562	3.2562	1.0500e-003	0.0000	3.2825
Total	**0.0173**	**0.0214**	**0.0276**	**4.0000e-005**		**1.2400e-003**	**1.2400e-003**		**1.1400e-003**	**1.1400e-003**	**0.0000**	**3.2562**	**3.2562**	**1.0500e-003**	**0.0000**	**3.2825**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0800e-003	2.5400e-003	0.0314	1.0000e-004	0.0123	6.0000e-005	0.0124	3.2700e-003	6.0000e-005	3.3300e-003	0.0000	9.3430	9.3430	2.6000e-004	2.5000e-004	9.4251
Total	**4.0800e-003**	**2.5400e-003**	**0.0314**	**1.0000e-004**	**0.0123**	**6.0000e-005**	**0.0124**	**3.2700e-003**	**6.0000e-005**	**3.3300e-003**	**0.0000**	**9.3430**	**9.3430**	**2.6000e-004**	**2.5000e-004**	**9.4251**

Mitigated Construction On-Site

Marin NCLH - Maintenance and Renovations around Cafe - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0151					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6000e-004	1.9800e-003	0.0282	4.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	3.2562	3.2562	1.0500e-003	0.0000	3.2825
Total	**0.0155**	**1.9800e-003**	**0.0282**	**4.0000e-005**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**3.2562**	**3.2562**	**1.0500e-003**	**0.0000**	**3.2825**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0800e-003	2.5400e-003	0.0314	1.0000e-004	0.0123	6.0000e-005	0.0124	3.2700e-003	6.0000e-005	3.3300e-003	0.0000	9.3430	9.3430	2.6000e-004	2.5000e-004	9.4251
Total	**4.0800e-003**	**2.5400e-003**	**0.0314**	**1.0000e-004**	**0.0123**	**6.0000e-005**	**0.0124**	**3.2700e-003**	**6.0000e-005**	**3.3300e-003**	**0.0000**	**9.3430**	**9.3430**	**2.6000e-004**	**2.5000e-004**	**9.4251**

3.6 Interior Finishes - 2025

Unmitigated Construction On-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0371					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1900e-003	0.0489	0.0677	9.0000e-005		2.6200e-003	2.6200e-003		2.4100e-003	2.4100e-003	0.0000	8.0152	8.0152	2.5900e-003	0.0000	8.0800
Total	**0.0423**	**0.0489**	**0.0677**	**9.0000e-005**		**2.6200e-003**	**2.6200e-003**		**2.4100e-003**	**2.4100e-003**	**0.0000**	**8.0152**	**8.0152**	**2.5900e-003**	**0.0000**	**8.0800**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.4600e-003	5.6300e-003	0.0723	2.4000e-004	0.0303	1.4000e-004	0.0304	8.0500e-003	1.3000e-004	8.1800e-003	0.0000	22.2319	22.2319	5.8000e-004	5.8000e-004	22.4208
Total	**9.4600e-003**	**5.6300e-003**	**0.0723**	**2.4000e-004**	**0.0303**	**1.4000e-004**	**0.0304**	**8.0500e-003**	**1.3000e-004**	**8.1800e-003**	**0.0000**	**22.2319**	**22.2319**	**5.8000e-004**	**5.8000e-004**	**22.4208**

Mitigated Construction On-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0371					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1200e-003	4.8700e-003	0.0693	9.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	8.0152	8.0152	2.5900e-003	0.0000	8.0800
Total	**0.0382**	**4.8700e-003**	**0.0693**	**9.0000e-005**		**1.5000e-004**	**1.5000e-004**		**1.5000e-004**	**1.5000e-004**	**0.0000**	**8.0152**	**8.0152**	**2.5900e-003**	**0.0000**	**8.0800**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.4600e-003	5.6300e-003	0.0723	2.4000e-004	0.0303	1.4000e-004	0.0304	8.0500e-003	1.3000e-004	8.1800e-003	0.0000	22.2319	22.2319	5.8000e-004	5.8000e-004	22.4208
Total	**9.4600e-003**	**5.6300e-003**	**0.0723**	**2.4000e-004**	**0.0303**	**1.4000e-004**	**0.0304**	**8.0500e-003**	**1.3000e-004**	**8.1800e-003**	**0.0000**	**22.2319**	**22.2319**	**5.8000e-004**	**5.8000e-004**	**22.4208**

4.0 Operational Detail - Mobile

Marin NCLH - Maintenance and Renovations around Cafe - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Fast Food Restaurant w/o Drive Thru	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Fast Food Restaurant w/o Drive Thru	0.543132	0.061625	0.200801	0.122893	0.023519	0.005568	0.006832	0.003721	0.000658	0.000395	0.027388	0.000726	0.002

5.0 Energy Detail

Marin NCLH - Maintenance and Renovations around Cafe - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Fast Food Restaurant w/o Drive Thru	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Marin NCLH - Maintenance and Renovations around Cafe - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Fast Food Restaurant w/o	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant w/o	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant w/o	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

Marin NCLH - Maintenance and Renovations around Cafe - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant w/o	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant w/o	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant w/o	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant w/o	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Marin NCLH - Maintenance and Renovations around Library

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Library	2.20	1000sqft	0.05	2,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2026
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Maintenance building around library

Construction Phase - Based on data request response

Off-road Equipment - based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - based on data request response

Off-road Equipment - BAsed on data request response

Off-road Equipment - Based on data request response

Trips and VMT - Based on data request response. Hauling trips are estimated using the number of dump trucks in each phase.

Architectural Coating -

Date: 10/5/2022 11:59 PM

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Woodstoves -

Area Coating - construction run only

Energy Use - Construction run only

Water And Wastewater - Construction run only

Solid Waste - construction run only

Construction Off-road Equipment Mitigation - 90% tier 4 construction equipments and watering exposed area twice a day mitigation applied

Area Mitigation -

Fleet Mix -

Vehicle Trips - Construction run only

Consumer Products - Construction sun only

Landscape Equipment - Construction run only

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	1100	0
tblAreaCoating	Area_Nonresidential_Interior	3300	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	130.00
tblConstructionPhase	NumDays	5.00	200.00
tblConstructionPhase	NumDays	100.00	70.00
tblConstructionPhase	NumDays	10.00	50.00
tblConstructionPhase	NumDays	1.00	20.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.99	0.00
tblEnergyUse	NT24E	3.36	0.00
tblEnergyUse	NT24NG	6.90	0.00
tblEnergyUse	T24E	1.08	0.00
tblEnergyUse	T24NG	17.67	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblOffRoadEquipment	HorsePower	231.00	544.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	63.00	49.00
tblOffRoadEquipment	HorsePower	63.00	130.00
tblOffRoadEquipment	HorsePower	63.00	49.00
tblOffRoadEquipment	HorsePower	9.00	350.00
tblOffRoadEquipment	HorsePower	231.00	367.00
tblOffRoadEquipment	HorsePower	158.00	273.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	89.00	83.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	HorsePower	402.00	430.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	84.00	197.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	49.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	130.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	2.03	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	15.00	40.00
tblTripsAndVMT	WorkerTripNumber	8.00	30.00
tblTripsAndVMT	WorkerTripNumber	1.00	40.00
tblTripsAndVMT	WorkerTripNumber	0.00	80.00
tblTripsAndVMT	WorkerTripNumber	0.00	80.00
tblVehicleTrips	ST_TR	80.09	0.00
tblVehicleTrips	SU_TR	42.09	0.00
tblVehicleTrips	WD_TR	72.05	0.00
tblWater	IndoorWaterUseRate	68,835.60	0.00
tblWater	OutdoorWaterUseRate	107,665.94	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0350	0.2704	0.3323	9.5000e-004	9.0800e-003	9.1700e-003	0.0183	2.4200e-003	8.4400e-003	0.0109	0.0000	83.3172	83.3172	0.0248	2.2000e-004	84.0024
2024	0.1163	0.7360	0.8902	2.5300e-003	0.0822	0.0271	0.1092	0.0219	0.0251	0.0470	0.0000	223.3914	223.3914	0.0400	1.7000e-003	224.8986
2025	0.0212	0.0476	0.1384	3.5000e-004	0.0340	2.3700e-003	0.0364	9.0600e-003	2.1800e-003	0.0112	0.0000	31.7737	31.7737	2.8400e-003	6.6000e-004	32.0409
Maximum	**0.1163**	**0.7360**	**0.8902**	**2.5300e-003**	**0.0822**	**0.0271**	**0.1092**	**0.0219**	**0.0251**	**0.0470**	**0.0000**	**223.3914**	**223.3914**	**0.0400**	**1.7000e-003**	**224.8986**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0176	0.1511	0.4808	9.5000e-004	9.0800e-003	2.3200e-003	0.0114	2.4200e-003	2.2400e-003	4.6500e-003	0.0000	83.3171	83.3171	0.0248	2.2000e-004	84.0023
2024	0.0682	0.2194	1.1208	2.5300e-003	0.0822	3.5500e-003	0.0857	0.0219	3.4900e-003	0.0254	0.0000	223.3912	223.3912	0.0400	1.7000e-003	224.8984
2025	0.0178	0.0105	0.1398	3.5000e-004	0.0340	2.9000e-004	0.0343	9.0600e-003	2.8000e-004	9.3300e-003	0.0000	31.7737	31.7737	2.8400e-003	6.6000e-004	32.0409
Maximum	**0.0682**	**0.2194**	**1.1208**	**2.5300e-003**	**0.0822**	**3.5500e-003**	**0.0857**	**0.0219**	**3.4900e-003**	**0.0254**	**0.0000**	**223.3912**	**223.3912**	**0.0400**	**1.7000e-003**	**224.8984**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

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Percent Reduction	**39.94**	**63.86**	**-27.95**	**0.00**	**0.00**	**84.04**	**19.79**	**0.00**	**83.19**	**43.07**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	10-9-2023	1-8-2024	0.3158	0.1716
2	1-9-2024	4-8-2024	0.2641	0.1095
3	4-9-2024	7-8-2024	0.2320	0.0686
4	7-9-2024	10-8-2024	0.2563	0.0735
5	10-9-2024	1-8-2025	0.0713	0.0261
6	1-9-2025	4-8-2025	0.0418	0.0176
7	4-9-2025	7-8-2025	0.0235	0.0096
		Highest	0.3158	0.1716

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/9/2023	12/15/2023	5	50	
2	Utilities	Site Preparation	12/18/2023	1/12/2024	5	20	
3	Structure Retrofit	Building Construction	1/15/2024	4/19/2024	5	70	

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4	Exterior Finishes	Architectural Coating	4/22/2024	10/18/2024	5	130	
5	Interior Finishes	Architectural Coating	8/26/2024	5/30/2025	5	200	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 3,300; Non-Residential Outdoor: 1,100; Striped Parking Area: 0 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	1	8.00	273	0.38
Demolition	Off-Highway Trucks	1	8.00	430	0.38
Demolition	Skid Steer Loaders	2	8.00	74	0.37
Demolition	Skid Steer Loaders	2	8.00	49	0.37
Utilities	Off-Highway Trucks	1	8.00	350	0.38
Utilities	Skid Steer Loaders	1	8.00	74	0.37
Utilities	Tractors/Loaders/Backhoes	1	8.00	104	0.37
Structure Retrofit	Aerial Lifts	1	8.00	49	0.31
Structure Retrofit	Cement and Mortar Mixers	2	8.00	350	0.56
Structure Retrofit	Cranes	1	4.00	544	0.29
Structure Retrofit	Pumps	1	8.00	197	0.74
Structure Retrofit	Skid Steer Loaders	1	8.00	74	0.37
Exterior Finishes	Aerial Lifts	1	8.00	130	0.31
Exterior Finishes	Aerial Lifts	1	8.00	49	0.31
Exterior Finishes	Cranes	1	8.00	367	0.29
Exterior Finishes	Forklifts	1	8.00	83	0.20
Interior Finishes	Forklifts	1	8.00	83	0.20
Interior Finishes	Skid Steer Loaders	1	8.00	130	0.37

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	40.00	0.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Utilities	3	30.00	0.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Structure Retrofit	6	40.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Exterior Finishes	4	80.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Interior Finishes	2	80.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0284	0.2394	0.2733	7.8000e-004		7.9900e-003	7.9900e-003		7.3500e-003	7.3500e-003	0.0000	68.5505	68.5505	0.0222	0.0000	69.1048
Total	**0.0284**	**0.2394**	**0.2733**	**7.8000e-004**		**7.9900e-003**	**7.9900e-003**		**7.3500e-003**	**7.3500e-003**	**0.0000**	**68.5505**	**68.5505**	**0.0222**	**0.0000**	**69.1048**

Unmitigated Construction Off-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0628	0.0628	0.0000	1.0000e-005	0.0659
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7900e-003	1.8300e-003	0.0216	7.0000e-005	7.8800e-003	4.0000e-005	7.9200e-003	2.1000e-003	4.0000e-005	2.1300e-003	0.0000	6.1879	6.1879	1.8000e-004	1.7000e-004	6.2445
Total	**2.7900e-003**	**1.9800e-003**	**0.0216**	**7.0000e-005**	**7.9000e-003**	**4.0000e-005**	**7.9400e-003**	**2.1000e-003**	**4.0000e-005**	**2.1400e-003**	**0.0000**	**6.2507**	**6.2507**	**1.8000e-004**	**1.8000e-004**	**6.3104**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0132	0.1387	0.4089	7.8000e-004		2.0900e-003	2.0900e-003		2.0100e-003	2.0100e-003	0.0000	68.5504	68.5504	0.0222	0.0000	69.1047
Total	**0.0132**	**0.1387**	**0.4089**	**7.8000e-004**		**2.0900e-003**	**2.0900e-003**		**2.0100e-003**	**2.0100e-003**	**0.0000**	**68.5504**	**68.5504**	**0.0222**	**0.0000**	**69.1047**

Mitigated Construction Off-Site

Marin NCLH - Maintenance and Renovations around Library - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0628	0.0628	0.0000	1.0000e-005	0.0659
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7900e-003	1.8300e-003	0.0216	7.0000e-005	7.8800e-003	4.0000e-005	7.9200e-003	2.1000e-003	4.0000e-005	2.1300e-003	0.0000	6.1879	6.1879	1.8000e-004	1.7000e-004	6.2445
Total	**2.7900e-003**	**1.9800e-003**	**0.0216**	**7.0000e-005**	**7.9000e-003**	**4.0000e-005**	**7.9400e-003**	**2.1000e-003**	**4.0000e-005**	**2.1400e-003**	**0.0000**	**6.2507**	**6.2507**	**1.8000e-004**	**1.8000e-004**	**6.3104**

3.3 Utilities - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3800e-003	0.0287	0.0342	9.0000e-005		1.1300e-003	1.1300e-003		1.0400e-003	1.0400e-003	0.0000	7.5565	7.5565	2.4400e-003	0.0000	7.6176
Total	**3.3800e-003**	**0.0287**	**0.0342**	**9.0000e-005**	**0.0000**	**1.1300e-003**	**1.1300e-003**	**0.0000**	**1.0400e-003**	**1.0400e-003**	**0.0000**	**7.5565**	**7.5565**	**2.4400e-003**	**0.0000**	**7.6176**

Unmitigated Construction Off-Site

Marin NCLH - Maintenance and Renovations around Library - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	8.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0314	0.0314	0.0000	1.0000e-005	0.0330
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	2.7000e-004	3.2400e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9282	0.9282	3.0000e-005	3.0000e-005	0.9367
Total	**4.2000e-004**	**3.5000e-004**	**3.2600e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9596**	**0.9596**	**3.0000e-005**	**4.0000e-005**	**0.9696**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2200e-003	0.0101	0.0470	9.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	7.5565	7.5565	2.4400e-003	0.0000	7.6176
Total	**1.2200e-003**	**0.0101**	**0.0470**	**9.0000e-005**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**7.5565**	**7.5565**	**2.4400e-003**	**0.0000**	**7.6176**

Mitigated Construction Off-Site

Marin NCLH - Maintenance and Renovations around Library - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	8.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0314	0.0314	0.0000	1.0000e-005	0.0330
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	2.7000e-004	3.2400e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9282	0.9282	3.0000e-005	3.0000e-005	0.9367
Total	**4.2000e-004**	**3.5000e-004**	**3.2600e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9596**	**0.9596**	**3.0000e-005**	**4.0000e-005**	**0.9696**

3.3 Utilities - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2900e-003	0.0270	0.0340	9.0000e-005		1.0300e-003	1.0300e-003		9.5000e-004	9.5000e-004	0.0000	7.5596	7.5596	2.4400e-003	0.0000	7.6208
Total	**3.2900e-003**	**0.0270**	**0.0340**	**9.0000e-005**	**0.0000**	**1.0300e-003**	**1.0300e-003**	**0.0000**	**9.5000e-004**	**9.5000e-004**	**0.0000**	**7.5596**	**7.5596**	**2.4400e-003**	**0.0000**	**7.6208**

Unmitigated Construction Off-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	7.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0309	0.0309	0.0000	0.0000	0.0324
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	2.4000e-004	3.0200e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.8984	0.8984	2.0000e-005	2.0000e-005	0.9063
Total	**3.9000e-004**	**3.1000e-004**	**3.0400e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9292**	**0.9292**	**2.0000e-005**	**2.0000e-005**	**0.9386**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2200e-003	9.9900e-003	0.0470	9.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	7.5596	7.5596	2.4400e-003	0.0000	7.6208
Total	**1.2200e-003**	**9.9900e-003**	**0.0470**	**9.0000e-005**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**7.5596**	**7.5596**	**2.4400e-003**	**0.0000**	**7.6208**

Mitigated Construction Off-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	7.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0309	0.0309	0.0000	0.0000	0.0324
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	2.4000e-004	3.0200e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.8984	0.8984	2.0000e-005	2.0000e-005	0.9063
Total	**3.9000e-004**	**3.1000e-004**	**3.0400e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9292**	**0.9292**	**2.0000e-005**	**2.0000e-005**	**0.9386**

3.4 Structure Retrofit - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0284	0.2595	0.2385	9.1000e-004		8.2000e-003	8.2000e-003		7.7900e-003	7.7900e-003	0.0000	78.8866	78.8866	0.0117	0.0000	79.1799
Total	**0.0284**	**0.2595**	**0.2385**	**9.1000e-004**		**8.2000e-003**	**8.2000e-003**		**7.7900e-003**	**7.7900e-003**	**0.0000**	**78.8866**	**78.8866**	**0.0117**	**0.0000**	**79.1799**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6600e-003	2.2800e-003	0.0282	9.0000e-005	0.0110	6.0000e-005	0.0111	2.9300e-003	5.0000e-005	2.9900e-003	0.0000	8.3847	8.3847	2.3000e-004	2.3000e-004	8.4585
Total	**3.6600e-003**	**2.2800e-003**	**0.0282**	**9.0000e-005**	**0.0110**	**6.0000e-005**	**0.0111**	**2.9300e-003**	**5.0000e-005**	**2.9900e-003**	**0.0000**	**8.3847**	**8.3847**	**2.3000e-004**	**2.3000e-004**	**8.4585**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0116	0.1043	0.4039	9.1000e-004		1.5900e-003	1.5900e-003		1.5600e-003	1.5600e-003	0.0000	78.8865	78.8865	0.0117	0.0000	79.1798
Total	**0.0116**	**0.1043**	**0.4039**	**9.1000e-004**		**1.5900e-003**	**1.5900e-003**		**1.5600e-003**	**1.5600e-003**	**0.0000**	**78.8865**	**78.8865**	**0.0117**	**0.0000**	**79.1798**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6600e-003	2.2800e-003	0.0282	9.0000e-005	0.0110	6.0000e-005	0.0111	2.9300e-003	5.0000e-005	2.9900e-003	0.0000	8.3847	8.3847	2.3000e-004	2.3000e-004	8.4585
Total	**3.6600e-003**	**2.2800e-003**	**0.0282**	**9.0000e-005**	**0.0110**	**6.0000e-005**	**0.0111**	**2.9300e-003**	**5.0000e-005**	**2.9900e-003**	**0.0000**	**8.3847**	**8.3847**	**2.3000e-004**	**2.3000e-004**	**8.4585**

3.5 Exterior Finishes - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0115					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0366	0.3946	0.3591	7.8000e-004		0.0152	0.0152		0.0140	0.0140	0.0000	68.6871	68.6871	0.0222	0.0000	69.2425
Total	**0.0481**	**0.3946**	**0.3591**	**7.8000e-004**		**0.0152**	**0.0152**		**0.0140**	**0.0140**	**0.0000**	**68.6871**	**68.6871**	**0.0222**	**0.0000**	**69.2425**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0136	8.4700e-003	0.1046	3.4000e-004	0.0410	2.1000e-004	0.0412	0.0109	1.9000e-004	0.0111	0.0000	31.1433	31.1433	8.7000e-004	8.5000e-004	31.4172
Total	**0.0136**	**8.4700e-003**	**0.1046**	**3.4000e-004**	**0.0410**	**2.1000e-004**	**0.0412**	**0.0109**	**1.9000e-004**	**0.0111**	**0.0000**	**31.1433**	**31.1433**	**8.7000e-004**	**8.5000e-004**	**31.4172**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0115					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0106	0.0846	0.4102	7.8000e-004		1.2700e-003	1.2700e-003		1.2700e-003	1.2700e-003	0.0000	68.6870	68.6870	0.0222	0.0000	69.2424
Total	**0.0220**	**0.0846**	**0.4102**	**7.8000e-004**		**1.2700e-003**	**1.2700e-003**		**1.2700e-003**	**1.2700e-003**	**0.0000**	**68.6870**	**68.6870**	**0.0222**	**0.0000**	**69.2424**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0136	8.4700e-003	0.1046	3.4000e-004	0.0410	2.1000e-004	0.0412	0.0109	1.9000e-004	0.0111	0.0000	31.1433	31.1433	8.7000e-004	8.5000e-004	31.4172
Total	**0.0136**	**8.4700e-003**	**0.1046**	**3.4000e-004**	**0.0410**	**2.1000e-004**	**0.0412**	**0.0109**	**1.9000e-004**	**0.0111**	**0.0000**	**31.1433**	**31.1433**	**8.7000e-004**	**8.5000e-004**	**31.4172**

3.6 Interior Finishes - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0400e-003	0.0379	0.0489	7.0000e-005		2.1900e-003	2.1900e-003		2.0100e-003	2.0100e-003	0.0000	5.7610	5.7610	1.8600e-003	0.0000	5.8075
Total	**9.3200e-003**	**0.0379**	**0.0489**	**7.0000e-005**		**2.1900e-003**	**2.1900e-003**		**2.0100e-003**	**2.0100e-003**	**0.0000**	**5.7610**	**5.7610**	**1.8600e-003**	**0.0000**	**5.8075**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.6200e-003	6.0000e-003	0.0740	2.4000e-004	0.0290	1.5000e-004	0.0291	7.7100e-003	1.3000e-004	7.8500e-003	0.0000	22.0399	22.0399	6.1000e-004	6.0000e-004	22.2337
Total	**9.6200e-003**	**6.0000e-003**	**0.0740**	**2.4000e-004**	**0.0290**	**1.5000e-004**	**0.0291**	**7.7100e-003**	**1.3000e-004**	**7.8500e-003**	**0.0000**	**22.0399**	**22.0399**	**6.1000e-004**	**6.0000e-004**	**22.2337**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.1000e-004	3.5000e-003	0.0498	7.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	5.7609	5.7609	1.8600e-003	0.0000	5.8075
Total	**6.0900e-003**	**3.5000e-003**	**0.0498**	**7.0000e-005**		**1.1000e-004**	**1.1000e-004**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**5.7609**	**5.7609**	**1.8600e-003**	**0.0000**	**5.8075**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.6200e-003	6.0000e-003	0.0740	2.4000e-004	0.0290	1.5000e-004	0.0291	7.7100e-003	1.3000e-004	7.8500e-003	0.0000	22.0399	22.0399	6.1000e-004	6.0000e-004	22.2337
Total	**9.6200e-003**	**6.0000e-003**	**0.0740**	**2.4000e-004**	**0.0290**	**1.5000e-004**	**0.0291**	**7.7100e-003**	**1.3000e-004**	**7.8500e-003**	**0.0000**	**22.0399**	**22.0399**	**6.1000e-004**	**6.0000e-004**	**22.2337**

3.6 Interior Finishes - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	6.1900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3800e-003	0.0412	0.0571	8.0000e-005		2.2100e-003	2.2100e-003		2.0300e-003	2.0300e-003	0.0000	6.7629	6.7629	2.1900e-003	0.0000	6.8175
Total	**0.0106**	**0.0412**	**0.0571**	**8.0000e-005**		**2.2100e-003**	**2.2100e-003**		**2.0300e-003**	**2.0300e-003**	**0.0000**	**6.7629**	**6.7629**	**2.1900e-003**	**0.0000**	**6.8175**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0106	6.3300e-003	0.0813	2.7000e-004	0.0340	1.6000e-004	0.0342	9.0600e-003	1.5000e-004	9.2100e-003	0.0000	25.0109	25.0109	6.5000e-004	6.6000e-004	25.2234
Total	**0.0106**	**6.3300e-003**	**0.0813**	**2.7000e-004**	**0.0340**	**1.6000e-004**	**0.0342**	**9.0600e-003**	**1.5000e-004**	**9.2100e-003**	**0.0000**	**25.0109**	**25.0109**	**6.5000e-004**	**6.6000e-004**	**25.2234**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	6.1900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.5000e-004	4.1100e-003	0.0585	8.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	6.7628	6.7628	2.1900e-003	0.0000	6.8175
Total	**7.1400e-003**	**4.1100e-003**	**0.0585**	**8.0000e-005**		**1.3000e-004**	**1.3000e-004**		**1.3000e-004**	**1.3000e-004**	**0.0000**	**6.7628**	**6.7628**	**2.1900e-003**	**0.0000**	**6.8175**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0106	6.3300e-003	0.0813	2.7000e-004	0.0340	1.6000e-004	0.0342	9.0600e-003	1.5000e-004	9.2100e-003	0.0000	25.0109	25.0109	6.5000e-004	6.6000e-004	25.2234
Total	**0.0106**	**6.3300e-003**	**0.0813**	**2.7000e-004**	**0.0340**	**1.6000e-004**	**0.0342**	**9.0600e-003**	**1.5000e-004**	**9.2100e-003**	**0.0000**	**25.0109**	**25.0109**	**6.5000e-004**	**6.6000e-004**	**25.2234**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Library	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Library	0.543132	0.061625	0.200801	0.122893	0.023519	0.005568	0.006832	0.003721	0.000658	0.000395	0.027388	0.000726	0.002

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Library	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Library	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

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	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Library	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Library	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Library	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Library	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Library	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Library	0	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Maintenance and Renovations around Library - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Marin NCLH - Chapel Hill & Mission Drive (Residential)

Marin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	138.00	Dwelling Unit	3.63	96,611.00	395
Single Family Housing	5.00	Dwelling Unit	1.62	9,000.00	14

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2026
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -
Land Use - Based on PD
Construction Phase - Based on data request
Off-road Equipment - based on data request response
Off-road Equipment - Based on data request response
Off-road Equipment - Based on data request response
Off-road Equipment - Based on data request response
Off-road Equipment - Based on data request response
Trips and VMT - Based on data request response. Hauling trips are estimated using the number of dump trucks in each phase
Demolition -
Architectural Coating -
Woodstoves - Construction run only
Area Coating - Construction run only
Energy Use - Construction run only
Water And Wastewater - Construction run only
Solid Waste - Construction run only
Construction Off-road Equipment Mitigation - 90% tier 4 construction equipments and watering exposed area twice a day mitigation applied.
Area Mitigation -
Fleet Mix -

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Vehicle Trips - Construction run only

Consumer Products - Construction run only

Landscape Equipment - Construction run only

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Residential_Exterior	71287	0
tblAreaCoating	Area_Residential_Interior	213862	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	37.00
tblConstructionPhase	NumDays	10.00	40.00

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstructionPhase	NumDays	20.00	80.00
tblConstructionPhase	NumDays	230.00	200.00
tblConstructionPhase	NumDays	20.00	260.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	741.44	0.00
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	NT24E	6,155.97	0.00
tblEnergyUse	NT24NG	2,615.00	0.00
tblEnergyUse	NT24NG	2,615.00	0.00
tblEnergyUse	T24E	90.83	0.00
tblEnergyUse	T24E	45.71	0.00
tblEnergyUse	T24NG	5,828.01	0.00
tblEnergyUse	T24NG	35,976.14	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	20.70	0.00
tblFireplaces	NumberGas	1.25	0.00
tblFireplaces	NumberNoFireplace	5.52	0.00
tblFireplaces	NumberNoFireplace	0.40	0.00
tblFireplaces	NumberWood	23.46	0.00
tblFireplaces	NumberWood	2.15	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	LandUseSquareFeet	138,000.00	96,611.00
tblOffRoadEquipment	HorsePower	158.00	273.00
tblOffRoadEquipment	HorsePower	402.00	430.00
tblOffRoadEquipment	HorsePower	80.00	249.00
tblOffRoadEquipment	HorsePower	367.00	304.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	9.00	350.00

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	132.00	225.00
tblOffRoadEquipment	HorsePower	80.00	130.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	9.00	350.00
tblOffRoadEquipment	HorsePower	158.00	24.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	402.00	197.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	63.00	130.00
tblOffRoadEquipment	HorsePower	63.00	49.00
tblOffRoadEquipment	HorsePower	231.00	367.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	65.00	130.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	63.48	0.00
tblSolidWaste	SolidWasteGenerationRate	5.88	0.00
tblTripsAndVMT	HaulingTripNumber	461.00	6.00
tblTripsAndVMT	HaulingTripNumber	0.00	6.00
tblTripsAndVMT	HaulingTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	25.00	30.00
tblTripsAndVMT	WorkerTripNumber	28.00	30.00
tblTripsAndVMT	WorkerTripNumber	35.00	50.00
tblTripsAndVMT	WorkerTripNumber	101.00	80.00
tblTripsAndVMT	WorkerTripNumber	20.00	150.00

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	ST_TR	4.91	0.00
tblVehicleTrips	ST_TR	9.54	0.00
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	SU_TR	8.55	0.00
tblVehicleTrips	WD_TR	5.44	0.00
tblVehicleTrips	WD_TR	9.44	0.00
tblWater	IndoorWaterUseRate	8,991,255.54	0.00
tblWater	IndoorWaterUseRate	325,770.13	0.00
tblWater	OutdoorWaterUseRate	5,668,400.23	0.00
tblWater	OutdoorWaterUseRate	205,376.82	0.00
tblWoodstoves	NumberCatalytic	2.76	0.00
tblWoodstoves	NumberCatalytic	0.20	0.00
tblWoodstoves	NumberNoncatalytic	2.76	0.00
tblWoodstoves	NumberNoncatalytic	0.20	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	21.06	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	956.80	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.2274	1.8534	1.9662	5.7200e-003	0.0378	0.0709	0.1086	0.0101	0.0652	0.0753	0.0000	504.2561	504.2561	0.1531	1.6600e-003	508.5787
2024	0.5674	0.6563	0.9402	2.5900e-003	0.1558	0.0242	0.1800	0.0417	0.0223	0.0640	0.0000	235.0831	235.0831	0.0356	6.6400e-003	237.9520
2025	0.3023	0.0482	0.1902	5.3000e-004	0.0579	2.2800e-003	0.0602	0.0154	2.1000e-003	0.0175	0.0000	48.6899	48.6899	3.1000e-003	1.1200e-003	49.1010
Maximum	**0.5674**	**1.8534**	**1.9662**	**5.7200e-003**	**0.1558**	**0.0709**	**0.1800**	**0.0417**	**0.0652**	**0.0753**	**0.0000**	**504.2561**	**504.2561**	**0.1531**	**6.6400e-003**	**508.5787**

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0988	0.6086	2.6310	5.7200e-003	0.0378	0.0148	0.0525	0.0101	0.0142	0.0243	0.0000	504.2555	504.2555	0.1531	1.6600e-003	508.5781
2024	0.5287	0.2023	1.0069	2.5900e-003	0.1558	2.8600e-003	0.1587	0.0417	2.7900e-003	0.0444	0.0000	235.0830	235.0830	0.0356	6.6400e-003	237.9519
2025	0.2992	0.0145	0.1915	5.3000e-004	0.0579	3.9000e-004	0.0583	0.0154	3.7000e-004	0.0158	0.0000	48.6899	48.6899	3.1000e-003	1.1200e-003	49.1010
Maximum	**0.5287**	**0.6086**	**2.6310**	**5.7200e-003**	**0.1558**	**0.0148**	**0.1587**	**0.0417**	**0.0142**	**0.0444**	**0.0000**	**504.2555**	**504.2555**	**0.1531**	**6.6400e-003**	**508.5781**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**15.54**	**67.73**	**-23.66**	**0.00**	**0.00**	**81.50**	**22.75**	**0.00**	**80.64**	**46.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-3-2023	7-2-2023	0.9674	0.2788
2	7-3-2023	10-2-2023	0.6515	0.2573
3	10-3-2023	1-2-2024	0.4279	0.1597
4	1-3-2024	4-2-2024	0.2516	0.0835
5	4-3-2024	7-2-2024	0.3632	0.1823
6	7-3-2024	10-2-2024	0.3616	0.2517
7	10-3-2024	1-2-2025	0.2406	0.2137
8	1-3-2025	4-2-2025	0.2316	0.2074
9	4-3-2025	7-2-2025	0.1122	0.1004
		Highest	0.9674	0.2788

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/3/2023	5/23/2023	5	37	

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2	Site Preparation, Grading and Paving	Site Preparation	5/29/2023	7/21/2023	5	40	
3	Foundation	Grading	7/24/2023	11/10/2023	5	80	
4	Building Construction	Building Construction	11/13/2023	8/16/2024	5	200	
5	Architectural Coating	Architectural Coating	5/20/2024	5/16/2025	5	260	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 213,862; Residential Outdoor: 71,287; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	2	8.00	273	0.38
Demolition	Off-Highway Trucks	3	8.00	430	0.38
Demolition	Rollers	1	8.00	249	0.38
Demolition	Scrapers	2	8.00	304	0.48
Demolition	Skid Steer Loaders	1	8.00	74	0.37
Demolition	Tractors/Loaders/Backhoes	1	8.00	104	0.37
Site Preparation, Grading and Paving	Cement and Mortar Mixers	2	8.00	350	0.56
Site Preparation, Grading and Paving	Off-Highway Trucks	3	8.00	350	0.38
Site Preparation, Grading and Paving	Paving Equipment	1	8.00	225	0.36
Site Preparation, Grading and Paving	Rollers	1	8.00	130	0.38
Site Preparation, Grading and Paving	Skid Steer Loaders	2	8.00	74	0.37
Site Preparation, Grading and Paving	Tractors/Loaders/Backhoes	2	8.00	104	0.37
Foundation		0	8.00		
Foundation	Cement and Mortar Mixers	4	8.00	350	0.56
Foundation	Excavators	2	8.00	24	0.38
Foundation	Off-Highway Trucks	3	8.00	350	0.38
Foundation	Off-Highway Trucks	1	8.00	197	0.38
Foundation	Skid Steer Loaders	2	8.00	74	0.37
Foundation	Tractors/Loaders/Backhoes	2	8.00	104	0.37
Building Construction	Aerial Lifts	1	8.00	130	0.31
Building Construction	Aerial Lifts	1	8.00	49	0.31
Building Construction	Cranes	1	8.00	367	0.29
Building Construction	Forklifts	1	8.00	83	0.20
Architectural Coating	Forklifts	1	8.00	83	0.20
Architectural Coating	Skid Steer Loaders	1	8.00	130	0.37

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	10	30.00	0.00	6.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation, Grading and Paving	11	30.00	0.00	6.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Foundation	14	50.00	0.00	6.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	80.00	15.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	150.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0725	0.6419	0.5660	1.8400e-003		0.0241	0.0241		0.0222	0.0222	0.0000	161.1815	161.1815	0.0521	0.0000	162.4847
Total	**0.0725**	**0.6419**	**0.5660**	**1.8400e-003**	**0.0000**	**0.0241**	**0.0241**	**0.0000**	**0.0222**	**0.0222**	**0.0000**	**161.1815**	**161.1815**	**0.0521**	**0.0000**	**162.4847**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.5000e-004	1.3000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1884	0.1884	1.0000e-005	3.0000e-005	0.1977
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Worker	1.5500e-003	1.0100e-003	0.0120	4.0000e-005	4.3700e-003	2.0000e-005	4.4000e-003	1.1600e-003	2.0000e-005	1.1800e-003	0.0000	3.4343	3.4343	1.0000e-004	1.0000e-004	3.4657
Total	**1.5600e-003**	**1.4600e-003**	**0.0121**	**4.0000e-005**	**4.4200e-003**	**2.0000e-005**	**4.45E-03**	**1.1700e-003**	**2.00E-05**	**1.20E-03**	**0.0000**	**3.6227**	**3.6227**	**1.1000e-004**	**1.3000e-004**	**3.6634**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0272	0.1527	0.8257	1.8400e-003		4.3700e-003	4.3700e-003		4.2400e-003	4.2400e-003	0.0000	161.1813	161.1813	0.0521	0.0000	162.4845
Total	**0.0272**	**0.1527**	**0.8257**	**1.8400e-003**	**0.0000**	**4.3700e-003**	**4.3700e-003**	**0.0000**	**4.24E-03**	**4.2400e-003**	**0.0000**	**161.1813**	**161.1813**	**0.0521**	**0.0000**	**162.4845**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.5000e-004	1.3000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1884	0.1884	1.0000e-005	3.0000e-005	0.1977
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5500e-003	1.0100e-003	0.0120	4.0000e-005	4.3700e-003	2.0000e-005	4.4000e-003	1.1600e-003	2.0000e-005	1.1800e-003	0.0000	3.4343	3.4343	1.0000e-004	1.0000e-004	3.4657
Total	**1.5600e-003**	**1.4600e-003**	**0.0121**	**4.0000e-005**	**4.4200e-003**	**2.0000e-005**	**4.4500e-003**	**1.1700e-003**	**2.0000e-005**	**1.2000e-003**	**0.0000**	**3.6227**	**3.6227**	**1.1000e-004**	**1.3000e-004**	**3.6634**

3.3 Site Preparation, Grading and Paving - 2023

Unmitigated Construction On-Site

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.3713	0.4146	1.1400e-003		0.0145	0.0145		0.0134	0.0134	0.0000	100.3688	100.3688	0.0325	0.0000	101.1803
Total	**0.0434**	**0.3713**	**0.4146**	**1.1400e-003**	**0.0000**	**0.0145**	**0.0145**	**0.0000**	**0.0134**	**0.0134**	**0.0000**	**100.3688**	**100.3688**	**0.0325**	**0.0000**	**101.1803**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.5000e-004	1.3000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1884	0.1884	1.0000e-005	3.0000e-005	0.1977
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6700e-003	1.1000e-003	0.0130	4.0000e-005	4.7300e-003	3.0000e-005	4.7500e-003	1.2600e-003	2.0000e-005	1.2800e-003	0.0000	3.7127	3.7127	1.1000e-004	1.0000e-004	3.7467
Total	**1.6800e-003**	**1.5500e-003**	**0.0131**	**4.0000e-005**	**4.7800e-003**	**3.00E-05**	**4.8000e-003**	**1.2700e-003**	**2.00E-05**	**1.3000e-003**	**0.0000**	**3.9011**	**3.9011**	**1.2000e-004**	**1.3000e-004**	**3.9444**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0188	0.1362	0.5799	1.1400e-003		3.1900e-003	3.1900e-003		3.0600e-003	3.0600e-003	0.0000	100.3687	100.3687	0.0325	0.0000	101.1802
Total	**0.0188**	**0.1362**	**0.5799**	**1.1400e-003**	**0.0000**	**3.1900e-003**	**3.1900e-003**	**0.0000**	**3.0600e-003**	**3.0600e-003**	**0.0000**	**100.3687**	**100.3687**	**0.0325**	**0.0000**	**101.1802**

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.5000e-004	1.3000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1884	0.1884	1.0000e-005	3.0000e-005	0.1977
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6700e-003	1.1000e-003	0.0130	4.0000e-005	4.7300e-003	3.0000e-005	4.7500e-003	1.2600e-003	2.0000e-005	1.2800e-003	0.0000	3.7127	3.7127	1.1000e-004	1.0000e-004	3.7467
Total	**1.6800e-003**	**1.5500e-003**	**0.0131**	**4.0000e-005**	**4.7800e-003**	**3.0000e-005**	**4.8000e-003**	**1.2700e-003**	**2.0000e-005**	**1.3000e-003**	**0.0000**	**3.9011**	**3.9011**	**1.2000e-004**	**1.3000e-004**	**3.9444**

3.4 Foundation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0883	0.7064	0.7829	2.1600e-003		0.0276	0.0276		0.0254	0.0254	0.0000	189.9647	189.9647	0.0614	0.0000	191.5006
Total	**0.0883**	**0.7064**	**0.7829**	**2.1600e-003**	**0.0000**	**0.0276**	**0.0276**	**0.0000**	**0.0254**	**0.0254**	**0.0000**	**189.9647**	**189.9647**	**0.0614**	**0.0000**	**191.5006**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.5000e-004	1.3000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1884	0.1884	1.0000e-005	3.0000e-005	0.1977

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5700e-003	3.6500e-003	0.0432	1.3000e-004	0.0158	8.0000e-005	0.0158	4.1900e-003	8.0000e-005	4.2700e-003	0.0000	12.3757	12.3757	3.7000e-004	3.5000e-004	12.4891
Total	**5.5800e-003**	**4.1000e-003**	**0.0433**	**1.3000e-004**	**0.0158**	**8.00E-05**	**0.0159**	**4.2000e-003**	**8.00E-05**	**4.2900e-003**	**0.0000**	**12.5641**	**12.5641**	**3.8000e-004**	**3.8000e-004**	**12.6868**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0369	0.2748	1.0115	2.1600e-003		6.6000e-003	6.6000e-003		6.3000e-003	6.3000e-003	0.0000	189.9645	189.9645	0.0614	0.0000	191.5004
Total	**0.0369**	**0.2748**	**1.0115**	**2.1600e-003**	**0.0000**	**6.6000e-003**	**6.6000e-003**	**0.0000**	**6.3000e-003**	**6.3000e-003**	**0.0000**	**189.9645**	**189.9645**	**0.0614**	**0.0000**	**191.5004**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.5000e-004	1.3000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1884	0.1884	1.0000e-005	3.0000e-005	0.1977
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5700e-003	3.6500e-003	0.0432	1.3000e-004	0.0158	8.0000e-005	0.0158	4.1900e-003	8.0000e-005	4.2700e-003	0.0000	12.3757	12.3757	3.7000e-004	3.5000e-004	12.4891
Total	**5.5800e-003**	**4.1000e-003**	**0.0433**	**1.3000e-004**	**0.0158**	**8.0000e-005**	**0.0159**	**4.2000e-003**	**8.0000e-005**	**4.2900e-003**	**0.0000**	**12.5641**	**12.5641**	**3.8000e-004**	**3.8000e-004**	**12.6868**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0102	0.1117	0.0994	2.1000e-004		4.4100e-003	4.4100e-003		4.0600e-003	4.0600e-003	0.0000	18.4995	18.4995	5.9800e-003	0.0000	18.6490
Total	**0.0102**	**0.1117**	**0.0994**	**2.1000e-004**		**4.41E-03**	**4.4100e-003**		**4.06E-03**	**4.0600e-003**	**0.0000**	**18.4995**	**18.4995**	**5.9800e-003**	**0.0000**	**18.6490**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6000e-004	0.0125	4.7100e-003	6.0000e-005	1.7200e-003	7.0000e-005	1.7900e-003	5.0000e-004	7.0000e-005	5.6000e-004	0.0000	5.4907	5.4907	2.1000e-004	7.8000e-004	5.7271
Worker	3.9000e-003	2.5600e-003	0.0302	9.0000e-005	0.0110	6.0000e-005	0.0111	2.9300e-003	5.0000e-005	2.9900e-003	0.0000	8.6630	8.6630	2.6000e-004	2.4000e-004	8.7424
Total	**4.2600e-003**	**0.0150**	**0.0349**	**1.5000e-004**	**0.0128**	**1.30E-04**	**0.0129**	**3.4300e-003**	**1.20E-04**	**3.5500e-003**	**0.0000**	**14.1537**	**14.1537**	**4.7000e-004**	**1.0200e-003**	**14.4694**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.8400e-003	0.0228	0.1105	2.1000e-004		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0.0000	18.4994	18.4994	5.9800e-003	0.0000	18.6490
Total	**2.8400e-003**	**0.0228**	**0.1105**	**2.1000e-004**		**3.4000e-004**	**3.4000e-004**		**3.4000e-004**	**3.4000e-004**	**0.0000**	**18.4994**	**18.4994**	**5.9800e-003**	**0.0000**	**18.6490**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6000e-004	0.0125	4.7100e-003	6.0000e-005	1.7200e-003	7.0000e-005	1.7900e-003	5.0000e-004	7.0000e-005	5.6000e-004	0.0000	5.4907	5.4907	2.1000e-004	7.8000e-004	5.7271
Worker	3.9000e-003	2.5600e-003	0.0302	9.0000e-005	0.0110	6.0000e-005	0.0111	2.9300e-003	5.0000e-005	2.9900e-003	0.0000	8.6630	8.6630	2.6000e-004	2.4000e-004	8.7424
Total	**4.2600e-003**	**0.0150**	**0.0349**	**1.5000e-004**	**0.0128**	**1.3000e-004**	**0.0129**	**3.4300e-003**	**1.2000e-004**	**3.5500e-003**	**0.0000**	**14.1537**	**14.1537**	**4.7000e-004**	**1.0200e-003**	**14.4694**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0465	0.5008	0.4558	9.9000e-004		0.0193	0.0193		0.0178	0.0178	0.0000	87.1798	87.1798	0.0282	0.0000	87.8847
Total	**0.0465**	**0.5008**	**0.4558**	**9.9000e-004**		**0.0193**	**0.0193**		**0.0178**	**0.0178**	**0.0000**	**87.1798**	**87.1798**	**0.0282**	**0.0000**	**87.8847**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6200e-003	0.0582	0.0213	2.6000e-004	8.1000e-003	3.2000e-004	8.4200e-003	2.3400e-003	3.1000e-004	2.6500e-003	0.0000	25.4634	25.4634	9.8000e-004	3.5900e-003	26.5581

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Worker	0.0173	0.0108	0.1327	4.3000e-004	0.0520	2.6000e-004	0.0523	0.0138	2.4000e-004	0.0141	0.0000	39.5281	39.5281	1.1000e-003	1.0700e-003	39.8756
Total	**0.0189**	**0.0690**	**0.1541**	**6.9000e-004**	**0.0601**	**5.80E-04**	**0.0607**	**0.0162**	**5.50E-04**	**0.0167**	**0.0000**	**64.9915**	**64.9915**	**2.0800e-003**	**4.6600e-003**	**66.4337**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0134	0.1073	0.5207	9.9000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003	0.0000	87.1797	87.1797	0.0282	0.0000	87.8846
Total	**0.0134**	**0.1073**	**0.5207**	**9.9000e-004**		**1.6100e-003**	**1.6100e-003**		**1.6100e-003**	**1.6100e-003**	**0.0000**	**87.1797**	**87.1797**	**0.0282**	**0.0000**	**87.8846**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6200e-003	0.0582	0.0213	2.6000e-004	8.1000e-003	3.2000e-004	8.4200e-003	2.3400e-003	3.1000e-004	2.6500e-003	0.0000	25.4634	25.4634	9.8000e-004	3.5900e-003	26.5581
Worker	0.0173	0.0108	0.1327	4.3000e-004	0.0520	2.6000e-004	0.0523	0.0138	2.4000e-004	0.0141	0.0000	39.5281	39.5281	1.1000e-003	1.0700e-003	39.8756
Total	**0.0189**	**0.0690**	**0.1541**	**6.9000e-004**	**0.0601**	**5.8000e-004**	**0.0607**	**0.0162**	**5.5000e-004**	**0.0167**	**0.0000**	**64.9915**	**64.9915**	**2.0800e-003**	**4.6600e-003**	**66.4337**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Archit. Coating	0.4632					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.1200e-003	0.0667	0.0861	1.2000e-004		3.8500e-003	3.8500e-003		3.5500e-003	3.5500e-003	0.0000	10.1443	10.1443	3.2800e-003	0.0000	10.2263
Total	**0.4703**	**0.0667**	**0.0861**	**1.2000e-004**		**3.85E-03**	**3.8500e-003**		**3.55E-03**	**3.5500e-003**	**0.0000**	**10.1443**	**10.1443**	**3.2800e-003**	**0.0000**	**10.2263**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0318	0.0198	0.2444	7.9000e-004	0.0957	4.8000e-004	0.0962	0.0255	4.4000e-004	0.0259	0.0000	72.7676	72.7676	2.0200e-003	1.9800e-003	73.4074
Total	**0.0318**	**0.0198**	**0.2444**	**7.9000e-004**	**0.0957**	**4.80E-04**	**0.0962**	**0.0255**	**4.40E-04**	**0.0259**	**0.0000**	**72.7676**	**72.7676**	**2.0200e-003**	**1.9800e-003**	**73.4074**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4632					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4200e-003	6.1700e-003	0.0877	1.2000e-004		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	10.1443	10.1443	3.2800e-003	0.0000	10.2263
Total	**0.4646**	**6.1700e-003**	**0.0877**	**1.2000e-004**		**1.9000e-004**	**1.9000e-004**		**1.9000e-004**	**1.9000e-004**	**0.0000**	**10.1443**	**10.1443**	**3.2800e-003**	**0.0000**	**10.2263**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0318	0.0198	0.2444	7.9000e-004	0.0957	4.8000e-004	0.0962	0.0255	4.4000e-004	0.0259	0.0000	72.7676	72.7676	2.0200e-003	1.9800e-003	73.4074
Total	**0.0318**	**0.0198**	**0.2444**	**7.9000e-004**	**0.0957**	**4.8000e-004**	**0.0962**	**0.0255**	**4.4000e-004**	**0.0259**	**0.0000**	**72.7676**	**72.7676**	**2.0200e-003**	**1.9800e-003**	**73.4074**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2802					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9700e-003	0.0374	0.0518	7.0000e-005		2.0000e-003	2.0000e-003		1.8400e-003	1.8400e-003	0.0000	6.1367	6.1367	1.9800e-003	0.0000	6.1863
Total	**0.2842**	**0.0374**	**0.0518**	**7.0000e-005**		**2.00E-03**	**2.0000e-003**		**1.84E-03**	**1.8400e-003**	**0.0000**	**6.1367**	**6.1367**	**1.9800e-003**	**0.0000**	**6.1863**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Worker	0.0181	0.0108	0.1384	4.6000e-004	0.0579	2.8000e-004	0.0582	0.0154	2.6000e-004	0.0157	0.0000	42.5533	42.5533	1.1100e-003	1.1200e-003	42.9147
Total	**0.0181**	**0.0108**	**0.1384**	**4.6000e-004**	**0.0579**	**2.80E-04**	**0.0582**	**0.0154**	**2.60E-04**	**0.0157**	**0.0000**	**42.5533**	**42.5533**	**1.1100e-003**	**1.1200e-003**	**42.9147**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2802					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.6000e-004	3.7300e-003	0.0531	7.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	6.1367	6.1367	1.9800e-003	0.0000	6.1863
Total	**0.2811**	**3.7300e-003**	**0.0531**	**7.0000e-005**		**1.1000e-004**	**1.1000e-004**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**6.1367**	**6.1367**	**1.9800e-003**	**0.0000**	**6.1863**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0181	0.0108	0.1384	4.6000e-004	0.0579	2.8000e-004	0.0582	0.0154	2.6000e-004	0.0157	0.0000	42.5533	42.5533	1.1100e-003	1.1200e-003	42.9147
Total	**0.0181**	**0.0108**	**0.1384**	**4.6000e-004**	**0.0579**	**2.8000e-004**	**0.0582**	**0.0154**	**2.6000e-004**	**0.0157**	**0.0000**	**42.5533**	**42.5533**	**1.1100e-003**	**1.1200e-003**	**42.9147**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.543132	0.061625	0.200801	0.122893	0.023519	0.005568	0.006832	0.003721	0.000658	0.000395	0.027388	0.000726	0.002741
Single Family Housing	0.543132	0.061625	0.200801	0.122893	0.023519	0.005568	0.006832	0.003721	0.000658	0.000395	0.027388	0.000726	0.002741

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr											MT/yr					
Apartments Mid Rise	0		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr											MT/yr					
Apartments Mid Rise	0		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Apartments Mid Rise	0		0.0000	0.0000	0.0000	0.0000
Single Family Housing	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Apartments Mid Rise	0		0.0000	0.0000	0.0000	0.0000
Single Family Housing	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Apartments Mid Rise	0 / 0		0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

Land Use	Indoor/Outdoor Use Mgal	tons/yr	Total CO2 MT/yr	CH4	N2O	CO2e
Apartments Mid Rise	0 / 0		0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

Land Use	Waste Disposed tons	Total CO2 MT/yr	CH4	N2O	CO2e
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Chapel Hill & Mission Drive (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Marin NCLH - Fitness Center and Daycare - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Marin NCLH - Fitness Center and Daycare

Marin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Day-Care Center	3.00	1000sqft	0.07	3,000.00	0
Health Club	17.00	1000sqft	0.39	17,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2027
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on PD

Construction Phase - Based on data request response

Off-road Equipment - based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - based on data request response

Off-road Equipment - Based on data request response

Trips and VMT - Based on data request response

Architectural Coating -

Marin NCLH - Fitness Center and Daycare - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Woodstoves -

Area Coating - Construction run only

Energy Use - Construction run only

Water And Wastewater - Construction run only

Solid Waste - Construction run only

Construction Off-road Equipment Mitigation - 90% tier 4 construction equipments and watering exposed area twice a day mitigation applied.

Area Mitigation -

Fleet Mix -

Vehicle Trips - Construction run only

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Consumer Products - Construction run only

Landscape Equipment - Construction run only

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	10000	0
tblAreaCoating	Area_Nonresidential_Interior	30000	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00

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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	188.00
tblConstructionPhase	NumDays	100.00	40.00
tblConstructionPhase	NumDays	10.00	24.00
tblConstructionPhase	NumDays	5.00	100.00
tblConstructionPhase	NumDays	1.00	31.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.51	0.00
tblEnergyUse	LightingElect	2.99	0.00
tblEnergyUse	NT24E	1.27	0.00
tblEnergyUse	NT24E	3.36	0.00
tblEnergyUse	NT24NG	1.62	0.00
tblEnergyUse	NT24NG	6.90	0.00
tblEnergyUse	T24E	0.59	0.00

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tblEnergyUse	T24E	1.08	0.00
tblEnergyUse	T24NG	14.70	0.00
tblEnergyUse	T24NG	17.67	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	63.00	130.00
tblOffRoadEquipment	HorsePower	63.00	49.00
tblOffRoadEquipment	HorsePower	9.00	350.00
tblOffRoadEquipment	HorsePower	9.00	350.00
tblOffRoadEquipment	HorsePower	231.00	367.00
tblOffRoadEquipment	HorsePower	158.00	273.00
tblOffRoadEquipment	HorsePower	158.00	24.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	402.00	430.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	132.00	225.00
tblOffRoadEquipment	HorsePower	84.00	197.00
tblOffRoadEquipment	HorsePower	80.00	249.00
tblOffRoadEquipment	HorsePower	80.00	130.00
tblOffRoadEquipment	HorsePower	367.00	304.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	130.00

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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	3.90	0.00
tblSolidWaste	SolidWasteGenerationRate	96.90	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	18.00	40.00
tblTripsAndVMT	WorkerTripNumber	18.00	30.00
tblTripsAndVMT	WorkerTripNumber	8.00	40.00
tblTripsAndVMT	WorkerTripNumber	10.00	80.00
tblTripsAndVMT	WorkerTripNumber	2.00	80.00
tblVehicleTrips	ST_TR	6.22	0.00
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	SU_TR	5.84	0.00
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	WD_TR	47.62	0.00
tblVehicleTrips	WD_TR	32.93	0.00
tblWater	IndoorWaterUseRate	128,668.70	0.00
tblWater	IndoorWaterUseRate	1,005,433.45	0.00
tblWater	OutdoorWaterUseRate	330,862.38	0.00
tblWater	OutdoorWaterUseRate	616,233.40	0.00

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2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.1208	0.7703	0.9924	2.8100e-003	0.0555	0.0282	0.0837	0.0148	0.0261	0.0408	0.0000	248.2452	248.2452	0.0599	1.2700e-003	250.1231
2026	0.1081	0.0683	0.1945	5.0000e-004	0.0495	3.4300e-003	0.0529	0.0132	3.1600e-003	0.0163	0.0000	45.0761	45.0761	4.0500e-003	9.0000e-004	45.4463
Maximum	**0.1208**	**0.7703**	**0.9924**	**2.8100e-003**	**0.0555**	**0.0282**	**0.0837**	**0.0148**	**0.0261**	**0.0408**	**0.0000**	**248.2452**	**248.2452**	**0.0599**	**1.2700e-003**	**250.1231**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.0668	0.2494	1.3149	2.8100e-003	0.0555	5.4100e-003	0.0609	0.0148	5.2600e-003	0.0200	0.0000	248.2450	248.2450	0.0599	1.2700e-003	250.1229
2026	0.1031	0.0144	0.1966	5.0000e-004	0.0495	4.1000e-004	0.0499	0.0132	3.9000e-004	0.0136	0.0000	45.0761	45.0761	4.0500e-003	9.0000e-004	45.4463
Maximum	**0.1031**	**0.2494**	**1.3149**	**2.8100e-003**	**0.0555**	**5.4100e-003**	**0.0609**	**0.0148**	**5.2600e-003**	**0.0200**	**0.0000**	**248.2450**	**248.2450**	**0.0599**	**1.2700e-003**	**250.1229**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**25.77**	**68.55**	**-27.34**	**0.00**	**0.00**	**81.59**	**18.88**	**0.00**	**80.66**	**41.22**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**3-10-2025**	**6-9-2025**	0.4084	0.1539
2	**6-10-2025**	**9-9-2025**	0.2410	0.0798
3	**9-10-2025**	**12-9-2025**	0.2013	0.0629
4	**12-10-2025**	**3-9-2026**	0.0733	0.0491
5	**3-10-2026**	**6-9-2026**	0.0739	0.0493
6	**6-10-2026**	**9-9-2026**	0.0472	0.0314
		Highest	0.4084	0.1539

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/10/2025	4/10/2025	5	24	

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2	Utilities	Site Preparation	4/4/2025	5/16/2025	5	31	
3	Foundations	Building Construction	5/19/2025	7/11/2025	5	40	
4	Exterior Finishes	Paving	7/14/2025	11/28/2025	5	100	
5	Interior Finishes	Architectural Coating	11/19/2025	8/7/2026	5	188	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 30,000; Non-Residential Outdoor: 10,000; Striped Parking Area: 0 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	1	8.00	273	0.38
Demolition	Off-Highway Trucks	1	8.00	430	0.38
Demolition	Rollers	1	8.00	249	0.38
Demolition	Scrapers	1	8.00	304	0.48
Demolition	Skid Steer Loaders	2	8.00	74	0.37
Demolition	Tractors/Loaders/Backhoes	1	8.00	104	0.37
Utilities	Cement and Mortar Mixers	2	8.00	350	0.56
Utilities	Off-Highway Trucks	1	8.00	350	0.38
Utilities	Paving Equipment	1	8.00	225	0.36
Utilities	Rollers	1	8.00	130	0.38
Utilities	Skid Steer Loaders	1	8.00	74	0.37
Utilities	Tractors/Loaders/Backhoes	1	8.00	104	0.37
Foundations	Cement and Mortar Mixers	2	8.00	350	0.56
Foundations	Excavators	1	8.00	24	0.38
Foundations	Off-Highway Trucks	1	8.00	350	0.38
Foundations	Pumps	1	8.00	197	0.74

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Foundations	Skid Steer Loaders	1	8.00	74	0.37
Foundations	Tractors/Loaders/Backhoes	1	8.00	104	0.37
Exterior Finishes	Aerial Lifts	1	8.00	130	0.31
Exterior Finishes	Aerial Lifts	1	8.00	49	0.31
Exterior Finishes	Cranes	1	8.00	367	0.29
Exterior Finishes	Forklifts	1	8.00	83	0.20
Interior Finishes	Forklifts	1	8.00	83	0.20
Interior Finishes	Skid Steer Loaders	1	8.00	130	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	7	40.00	0.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Utilities	7	30.00	0.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Foundations	7	40.00	3.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Exterior Finishes	4	80.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Interior Finishes	2	80.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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Category	tons/yr										MT/yr					
Off-Road	0.0221	0.1906	0.2081	6.2000e-004		7.0400e-003	7.0400e-003		6.4700e-003	6.4700e-003	0.0000	54.6075	54.6075	0.0177	0.0000	55.0491
Total	**0.0221**	**0.1906**	**0.2081**	**6.2000e-004**		**7.0400e-003**	**7.0400e-003**		**6.4700e-003**	**6.4700e-003**	**0.0000**	**54.6075**	**54.6075**	**0.0177**	**0.0000**	**55.0491**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	2.9000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1208	0.1208	1.0000e-005	2.0000e-005	0.1268
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1800e-003	7.0000e-004	9.0400e-003	3.0000e-005	3.7800e-003	2.0000e-005	3.8000e-003	1.0100e-003	2.0000e-005	1.0200e-003	0.0000	2.7790	2.7790	7.0000e-005	7.0000e-005	2.8026
Total	**1.1800e-003**	**9.9000e-004**	**9.1200e-003**	**3.0000e-005**	**3.8100e-003**	**2.0000e-005**	**3.8400e-003**	**1.0200e-003**	**2.0000e-005**	**1.0300e-003**	**0.0000**	**2.8998**	**2.8998**	**8.0000e-005**	**9.0000e-005**	**2.9294**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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Off-Road	8.8300e-003	0.0629	0.3068	6.2000e-004		1.4600e-003	1.4600e-003		1.4200e-003	1.4200e-003	0.0000	54.6075	54.6075	0.0177	0.0000	55.0490
Total	**8.8300e-003**	**0.0629**	**0.3068**	**6.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4200e-003**	**1.4200e-003**	**0.0000**	**54.6075**	**54.6075**	**0.0177**	**0.0000**	**55.0490**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	2.9000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1208	0.1208	1.0000e-005	2.0000e-005	0.1268
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1800e-003	7.0000e-004	9.0400e-003	3.0000e-005	3.7800e-003	2.0000e-005	3.8000e-003	1.0100e-003	2.0000e-005	1.0200e-003	0.0000	2.7790	2.7790	7.0000e-005	7.0000e-005	2.8026
Total	**1.1800e-003**	**9.9000e-004**	**9.1200e-003**	**3.0000e-005**	**3.8100e-003**	**2.0000e-005**	**3.8400e-003**	**1.0200e-003**	**2.0000e-005**	**1.0300e-003**	**0.0000**	**2.8998**	**2.8998**	**8.0000e-005**	**9.0000e-005**	**2.9294**

3.3 Utilities - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Off-Road	0.0144	0.1143	0.1684	4.4000e-004		4.3300e-003	4.3300e-003		3.9900e-003	3.9900e-003	0.0000	38.6979	38.6979	0.0125	0.0000	39.0108
Total	**0.0144**	**0.1143**	**0.1684**	**4.4000e-004**	**0.0000**	**4.3300e-003**	**4.3300e-003**	**0.0000**	**3.9900e-003**	**3.9900e-003**	**0.0000**	**38.6979**	**38.6979**	**0.0125**	**0.0000**	**39.0108**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0604	0.0604	0.0000	1.0000e-005	0.0634
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1500e-003	6.8000e-004	8.7600e-003	3.0000e-005	3.6600e-003	2.0000e-005	3.6800e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	2.6921	2.6921	7.0000e-005	7.0000e-005	2.7150
Total	**1.1500e-003**	**8.3000e-004**	**8.8000e-003**	**3.0000e-005**	**3.6800e-003**	**2.0000e-005**	**3.7000e-003**	**9.7000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.7526**	**2.7526**	**7.0000e-005**	**8.0000e-005**	**2.7784**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	6.4400e-003	0.0460	0.2433	4.4000e-004		1.1400e-003	1.1400e-003		1.1000e-003	1.1000e-003	0.0000	38.6979	38.6979	0.0125	0.0000	39.0108
Total	**6.4400e-003**	**0.0460**	**0.2433**	**4.4000e-004**	**0.0000**	**1.1400e-003**	**1.1400e-003**	**0.0000**	**1.1000e-003**	**1.1000e-003**	**0.0000**	**38.6979**	**38.6979**	**0.0125**	**0.0000**	**39.0108**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0604	0.0604	0.0000	1.0000e-005	0.0634
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1500e-003	6.8000e-004	8.7600e-003	3.0000e-005	3.6600e-003	2.0000e-005	3.6800e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	2.6921	2.6921	7.0000e-005	7.0000e-005	2.7150
Total	**1.1500e-003**	**8.3000e-004**	**8.8000e-003**	**3.0000e-005**	**3.6800e-003**	**2.0000e-005**	**3.7000e-003**	**9.7000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.7526**	**2.7526**	**7.0000e-005**	**8.0000e-005**	**2.7784**

3.4 Foundations - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0220	0.1611	0.2005	6.7000e-004		5.3300e-003	5.3300e-003		5.0200e-003	5.0200e-003	0.0000	58.2770	58.2770	0.0109	0.0000	58.5501

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Total	**0.0220**	**0.1611**	**0.2005**	**6.7000e-004**		**5.3300e-003**	**5.3300e-003**		**5.0200e-003**	**5.0200e-003**	**0.0000**	**58.2770**	**58.2770**	**0.0109**	**0.0000**	**58.5501**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0604	0.0604	0.0000	1.0000e-005	0.0634
Vendor	8.0000e-005	2.7900e-003	1.0000e-003	1.0000e-005	3.9000e-004	2.0000e-005	4.1000e-004	1.1000e-004	1.0000e-005	1.3000e-004	0.0000	1.2121	1.2121	5.0000e-005	1.7000e-004	1.2642
Worker	1.9700e-003	1.1700e-003	0.0151	5.0000e-005	6.3000e-003	3.0000e-005	6.3300e-003	1.6800e-003	3.0000e-005	1.7000e-003	0.0000	4.6317	4.6317	1.2000e-004	1.2000e-004	4.6710
Total	**2.0500e-003**	**4.1100e-003**	**0.0161**	**6.0000e-005**	**6.7100e-003**	**5.0000e-005**	**6.7600e-003**	**1.7900e-003**	**4.0000e-005**	**1.8400e-003**	**0.0000**	**5.9042**	**5.9042**	**1.7000e-004**	**3.0000e-004**	**5.9986**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.6400e-003	0.0607	0.2997	6.7000e-004		1.5200e-003	1.5200e-003		1.4700e-003	1.4700e-003	0.0000	58.2769	58.2769	0.0109	0.0000	58.5501
Total	**8.6400e-003**	**0.0607**	**0.2997**	**6.7000e-004**		**1.5200e-003**	**1.5200e-003**		**1.4700e-003**	**1.4700e-003**	**0.0000**	**58.2769**	**58.2769**	**0.0109**	**0.0000**	**58.5501**

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Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0604	0.0604	0.0000	1.0000e-005	0.0634
Vendor	8.0000e-005	2.7900e-003	1.0000e-003	1.0000e-005	3.9000e-004	2.0000e-005	4.1000e-004	1.1000e-004	1.0000e-005	1.3000e-004	0.0000	1.2121	1.2121	5.0000e-005	1.7000e-004	1.2642
Worker	1.9700e-003	1.1700e-003	0.0151	5.0000e-005	6.3000e-003	3.0000e-005	6.3300e-003	1.6800e-003	3.0000e-005	1.7000e-003	0.0000	4.6317	4.6317	1.2000e-004	1.2000e-004	4.6710
Total	**2.0500e-003**	**4.1100e-003**	**0.0161**	**6.0000e-005**	**6.7100e-003**	**5.0000e-005**	**6.7600e-003**	**1.7900e-003**	**4.0000e-005**	**1.8400e-003**	**0.0000**	**5.9042**	**5.9042**	**1.7000e-004**	**3.0000e-004**	**5.9986**

3.5 Exterior Finishes - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0266	0.2789	0.2663	6.0000e-004		0.0106	0.0106		9.7300e-003	9.7300e-003	0.0000	52.8278	52.8278	0.0171	0.0000	53.2549
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0266**	**0.2789**	**0.2663**	**6.0000e-004**		**0.0106**	**0.0106**		**9.7300e-003**	**9.7300e-003**	**0.0000**	**52.8278**	**52.8278**	**0.0171**	**0.0000**	**53.2549**

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Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.8500e-003	5.8700e-003	0.0753	2.5000e-004	0.0315	1.5000e-004	0.0317	8.3800e-003	1.4000e-004	8.5200e-003	0.0000	23.1582	23.1582	6.1000e-004	6.1000e-004	23.3550
Total	**9.8500e-003**	**5.8700e-003**	**0.0753**	**2.5000e-004**	**0.0315**	**1.5000e-004**	**0.0317**	**8.3800e-003**	**1.4000e-004**	**8.5200e-003**	**0.0000**	**23.1582**	**23.1582**	**6.1000e-004**	**6.1000e-004**	**23.3550**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.1200e-003	0.0651	0.3156	6.0000e-004		9.8000e-004	9.8000e-004		9.8000e-004	9.8000e-004	0.0000	52.8277	52.8277	0.0171	0.0000	53.2548
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.1200e-003**	**0.0651**	**0.3156**	**6.0000e-004**		**9.8000e-004**	**9.8000e-004**		**9.8000e-004**	**9.8000e-004**	**0.0000**	**52.8277**	**52.8277**	**0.0171**	**0.0000**	**53.2548**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.8500e-003	5.8700e-003	0.0753	2.5000e-004	0.0315	1.5000e-004	0.0317	8.3800e-003	1.4000e-004	8.5200e-003	0.0000	23.1582	23.1582	6.1000e-004	6.1000e-004	23.3550
Total	**9.8500e-003**	**5.8700e-003**	**0.0753**	**2.5000e-004**	**0.0315**	**1.5000e-004**	**0.0317**	**8.3800e-003**	**1.4000e-004**	**8.5200e-003**	**0.0000**	**23.1582**	**23.1582**	**6.1000e-004**	**6.1000e-004**	**23.3550**

3.6 Interior Finishes - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0172					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2600e-003	0.0118	0.0164	2.0000e-005		6.3000e-004	6.3000e-004		5.8000e-004	5.8000e-004	0.0000	1.9412	1.9412	6.3000e-004	0.0000	1.9569
Total	**0.0185**	**0.0118**	**0.0164**	**2.0000e-005**		**6.3000e-004**	**6.3000e-004**		**5.8000e-004**	**5.8000e-004**	**0.0000**	**1.9412**	**1.9412**	**6.3000e-004**	**0.0000**	**1.9569**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0500e-003	1.8200e-003	0.0234	8.0000e-005	9.7700e-003	5.0000e-005	9.8100e-003	2.6000e-003	4.0000e-005	2.6400e-003	0.0000	7.1791	7.1791	1.9000e-004	1.9000e-004	7.2400
Total	**3.0500e-003**	**1.8200e-003**	**0.0234**	**8.0000e-005**	**9.7700e-003**	**5.0000e-005**	**9.8100e-003**	**2.6000e-003**	**4.0000e-005**	**2.6400e-003**	**0.0000**	**7.1791**	**7.1791**	**1.9000e-004**	**1.9000e-004**	**7.2400**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0172					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	1.1800e-003	0.0168	2.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	1.9412	1.9412	6.3000e-004	0.0000	1.9569
Total	**0.0175**	**1.1800e-003**	**0.0168**	**2.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**1.9412**	**1.9412**	**6.3000e-004**	**0.0000**	**1.9569**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0500e-003	1.8200e-003	0.0234	8.0000e-005	9.7700e-003	5.0000e-005	9.8100e-003	2.6000e-003	4.0000e-005	2.6400e-003	0.0000	7.1791	7.1791	1.9000e-004	1.9000e-004	7.2400
Total	**3.0500e-003**	**1.8200e-003**	**0.0234**	**8.0000e-005**	**9.7700e-003**	**5.0000e-005**	**9.8100e-003**	**2.6000e-003**	**4.0000e-005**	**2.6400e-003**	**0.0000**	**7.1791**	**7.1791**	**1.9000e-004**	**1.9000e-004**	**7.2400**

3.6 Interior Finishes - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0871					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.3600e-003	0.0599	0.0830	1.1000e-004		3.2100e-003	3.2100e-003		2.9500e-003	2.9500e-003	0.0000	9.8312	9.8312	3.1800e-003	0.0000	9.9107
Total	**0.0935**	**0.0599**	**0.0830**	**1.1000e-004**		**3.2100e-003**	**3.2100e-003**		**2.9500e-003**	**2.9500e-003**	**0.0000**	**9.8312**	**9.8312**	**3.1800e-003**	**0.0000**	**9.9107**

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Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0147	8.3700e-003	0.1115	3.8000e-004	0.0495	2.2000e-004	0.0497	0.0132	2.1000e-004	0.0134	0.0000	35.2449	35.2449	8.7000e-004	9.0000e-004	35.5356
Total	**0.0147**	**8.3700e-003**	**0.1115**	**3.8000e-004**	**0.0495**	**2.2000e-004**	**0.0497**	**0.0132**	**2.1000e-004**	**0.0134**	**0.0000**	**35.2449**	**35.2449**	**8.7000e-004**	**9.0000e-004**	**35.5356**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0871					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3800e-003	5.9800e-003	0.0850	1.1000e-004		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	9.8312	9.8312	3.1800e-003	0.0000	9.9107
Total	**0.0885**	**5.9800e-003**	**0.0850**	**1.1000e-004**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**9.8312**	**9.8312**	**3.1800e-003**	**0.0000**	**9.9107**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0147	8.3700e-003	0.1115	3.8000e-004	0.0495	2.2000e-004	0.0497	0.0132	2.1000e-004	0.0134	0.0000	35.2449	35.2449	8.7000e-004	9.0000e-004	35.5356
Total	**0.0147**	**8.3700e-003**	**0.1115**	**3.8000e-004**	**0.0495**	**2.2000e-004**	**0.0497**	**0.0132**	**2.1000e-004**	**0.0134**	**0.0000**	**35.2449**	**35.2449**	**8.7000e-004**	**9.0000e-004**	**35.5356**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Marin NCLH - Fitness Center and Daycare - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Day-Care Center	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Day-Care Center	9.50	7.30	7.30	12.70	82.30	5.00	28	58	14
Health Club	9.50	7.30	7.30	16.90	64.10	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Day-Care Center	0.544281	0.061644	0.199793	0.122945	0.023341	0.005632	0.006920	0.003727	0.000656	0.000390	0.027229	0.000725	0.002
Health Club	0.544281	0.061644	0.199793	0.122945	0.023341	0.005632	0.006920	0.003727	0.000656	0.000390	0.027229	0.000725	0.002

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Marin NCLH - Fitness Center and Daycare - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Day-Care Center	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

Marin NCLH - Fitness Center and Daycare - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Day-Care Center	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Day-Care Center	0	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

Marin NCLH - Fitness Center and Daycare - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Day-Care Center	0	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

Marin NCLH - Fitness Center and Daycare - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

Marin NCLH - Fitness Center and Daycare - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Day-Care Center	0 / 0	0.0000	0.0000	0.0000	0.0000
Health Club	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Marin NCLH - Fitness Center and Daycare - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Day-Care Center	0 / 0	0.0000	0.0000	0.0000	0.0000
Health Club	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Marin NCLH - Fitness Center and Daycare - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Day-Care Center	0	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Day-Care Center	0	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Marin NCLH - Fitness Center and Daycare - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential)

Marin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	165.00	Dwelling Unit	4.34	96,800.00	472

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2027
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on PD

Construction Phase - Based on data request response

Off-road Equipment - based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Trips and VMT - Based on data request response

Demolition - Includes demolition of Hodges/Shuck, Reed/Storer/Shuck and Domitory Hill buildings

Architectural Coating -

Date: 10/6/2022 3:28 PM

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Woodstoves - Construction run only

Area Coating - Construction run only

Energy Use - Construction run only

Water And Wastewater - Construction run only

Solid Waste - Construction run only

Construction Off-road Equipment Mitigation - 90% tier 4 construction equipments and watering exposed area twice a day mitigation applied.

Area Mitigation -

Fleet Mix -

Vehicle Trips - Construction run only

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Consumer Products - Construction run only

Landscape Equipment - Construction run only

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Residential_Exterior	65340	0
tblAreaCoating	Area_Residential_Interior	196020	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	18.00	450.00
tblConstructionPhase	NumDays	230.00	390.00
tblConstructionPhase	NumDays	20.00	80.00
tblConstructionPhase	NumDays	8.00	130.00
tblConstructionPhase	NumDays	5.00	40.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	741.44	0.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	NT24NG	2,615.00	0.00
tblEnergyUse	T24E	90.83	0.00
tblEnergyUse	T24NG	5,828.01	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	24.75	0.00
tblFireplaces	NumberNoFireplace	6.60	0.00
tblFireplaces	NumberWood	28.05	0.00

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	LandUseSquareFeet	165,000.00	96,800.00
tblOffRoadEquipment	HorsePower	158.00	273.00
tblOffRoadEquipment	HorsePower	158.00	24.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	63.00	130.00
tblOffRoadEquipment	HorsePower	63.00	49.00
tblOffRoadEquipment	HorsePower	9.00	350.00
tblOffRoadEquipment	HorsePower	9.00	350.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	402.00	430.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	402.00	197.00
tblOffRoadEquipment	HorsePower	132.00	225.00
tblOffRoadEquipment	HorsePower	80.00	249.00
tblOffRoadEquipment	HorsePower	80.00	130.00
tblOffRoadEquipment	HorsePower	367.00	304.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	130.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	75.90	0.00
tblTripsAndVMT	WorkerTripNumber	25.00	30.00
tblTripsAndVMT	WorkerTripNumber	28.00	30.00
tblTripsAndVMT	WorkerTripNumber	35.00	50.00
tblTripsAndVMT	WorkerTripNumber	119.00	80.00
tblTripsAndVMT	WorkerTripNumber	24.00	150.00
tblVehicleTrips	ST_TR	4.91	0.00
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	WD_TR	5.44	0.00
tblWater	IndoorWaterUseRate	10,750,414.23	0.00
tblWater	OutdoorWaterUseRate	6,777,435.06	0.00
tblWoodstoves	NumberCatalytic	3.30	0.00
tblWoodstoves	NumberNoncatalytic	3.30	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Year	tons/yr										MT/yr					
2024	0.1190	1.0038	0.9581	3.1900e-003	0.0459	0.0370	0.0829	8.1600e-003	0.0340	0.0422	0.0000	281.7449	281.7449	0.0868	1.7700e-003	284.4431
2025	0.5614	1.8822	2.7264	8.0700e-003	0.2306	0.0653	0.2959	0.0600	0.0601	0.1201	0.0000	720.0938	720.0938	0.1768	9.8900e-003	727.4592
2026	0.4815	0.3501	0.8130	2.4200e-003	0.2223	0.0109	0.2332	0.0594	0.0101	0.0695	0.0000	222.5449	222.5449	0.0177	8.4200e-003	225.4980
2027	0.0189	5.2100e-003	0.0197	6.0000e-005	6.5000e-003	2.5000e-004	6.7500e-003	1.7300e-003	2.3000e-004	1.9600e-003	0.0000	5.1859	5.1859	3.3000e-004	1.1000e-004	5.2277
Maximum	**0.5614**	**1.8822**	**2.7264**	**8.0700e-003**	**0.2306**	**0.0653**	**0.2959**	**0.0600**	**0.0601**	**0.1201**	**0.0000**	**720.0938**	**720.0938**	**0.1768**	**9.8900e-003**	**727.4592**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0446	0.2512	1.4247	3.1900e-003	0.0263	6.4800e-003	0.0328	5.2000e-003	6.3400e-003	0.0115	0.0000	281.7446	281.7446	0.0868	1.7700e-003	284.4428
2025	0.4301	0.8287	3.5394	8.0700e-003	0.2227	0.0186	0.2413	0.0588	0.0178	0.0766	0.0000	720.0932	720.0932	0.1768	9.8900e-003	727.4586
2026	0.4737	0.2708	0.8405	2.4200e-003	0.2223	6.3600e-003	0.2286	0.0594	5.9100e-003	0.0653	0.0000	222.5449	222.5449	0.0177	8.4200e-003	225.4979
2027	0.0188	3.3200e-003	0.0198	6.0000e-005	6.5000e-003	1.5000e-004	6.6500e-003	1.7300e-003	1.4000e-004	1.8600e-003	0.0000	5.1859	5.1859	3.3000e-004	1.1000e-004	5.2277
Maximum	**0.4737**	**0.8287**	**3.5394**	**8.0700e-003**	**0.2227**	**0.0186**	**0.2413**	**0.0594**	**0.0178**	**0.0766**	**0.0000**	**720.0932**	**720.0932**	**0.1768**	**9.8900e-003**	**727.4586**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Percent Reduction	**18.10**	**58.22**	**-28.94**	**0.00**	**5.43**	**72.15**	**17.66**	**3.22**	**71.06**	**33.53**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	10-14-2024	1-13-2025	1.3355	0.3664
2	1-14-2025	4-13-2025	0.8529	0.3253
3	4-14-2025	7-13-2025	0.7653	0.4026
4	7-14-2025	10-13-2025	0.3540	0.2572
5	10-14-2025	1-13-2026	0.2425	0.2164
6	1-14-2026	4-13-2026	0.2344	0.2089
7	4-14-2026	7-13-2026	0.2332	0.2074
8	7-14-2026	10-13-2026	0.2045	0.1832
9	10-14-2026	1-13-2027	0.1468	0.1345
10	1-14-2027	4-13-2027	0.0032	0.0029
		Highest	1.3355	0.4026

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

1	Demolition	Demolition	10/14/2024	1/31/2025	5	80	
2	Site Preparation, Grading and Paving	Site Preparation	12/23/2024	2/14/2025	5	40	
3	Foundation	Grading	2/3/2025	8/1/2025	5	130	
4	Building Construction	Building Construction	3/17/2025	9/11/2026	5	390	
5	Architectural Coating	Architectural Coating	4/28/2025	1/15/2027	5	450	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 196,020; Residential Outdoor: 65,340; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	2	8.00	273	0.38
Demolition	Off-Highway Trucks	3	8.00	430	0.38
Demolition	Rollers	1	8.00	249	0.38
Demolition	Scrapers	2	8.00	304	0.48
Demolition	Skid Steer Loaders	1	8.00	74	0.37
Demolition	Tractors/Loaders/Backhoes	1	8.00	104	0.37
Site Preparation, Grading and Paving	Cement and Mortar Mixers	2	8.00	350	0.56
Site Preparation, Grading and Paving	Off-Highway Trucks	3	8.00	350	0.38
Site Preparation, Grading and Paving	Paving Equipment	1	8.00	225	0.36
Site Preparation, Grading and Paving	Rollers	1	8.00	130	0.38
Site Preparation, Grading and Paving	Skid Steer Loaders	2	8.00	74	0.37
Site Preparation, Grading and Paving	Tractors/Loaders/Backhoes	2	8.00	104	0.37
Foundation	Cement and Mortar Mixers	4	8.00	350	0.56
Foundation	Excavators	2	8.00	24	0.38
Foundation	Off-Highway Trucks	3	8.00	350	0.38

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Foundation	Off-Highway Trucks	1	8.00	197	0.38
Foundation	Skid Steer Loaders	2	8.00	74	0.37
Foundation	Tractors/Loaders/Backhoes	2	8.00	104	0.37
Building Construction	Aerial Lifts	1	8.00	130	0.31
Building Construction	Aerial Lifts	1	8.00	49	0.31
Building Construction	Forklifts	1	8.00	83	0.20
Architectural Coating	Forklifts	1	8.00	83	0.20
Architectural Coating	Skid Steer Loaders	1	8.00	130	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	10	30.00	0.00	461.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation, Grading and Paving	11	30.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Foundation	14	50.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	80.00	18.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	150.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Fugitive Dust					0.0356	0.0000	0.0356	5.3800e-003	0.0000	5.3800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1089	0.9195	0.8599	2.8300e-003		0.0345	0.0345		0.0318	0.0318	0.0000	248.2914	248.2914	0.0803	0.0000	250.2990
Total	**0.1089**	**0.9195**	**0.8599**	**2.8300e-003**	**0.0356**	**0.0345**	**0.0701**	**5.3800e-003**	**0.0318**	**0.0371**	**0.0000**	**248.2914**	**248.2914**	**0.0803**	**0.0000**	**250.2990**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.6000e-004	0.0244	6.9100e-003	1.0000e-004	2.7700e-003	1.8000e-004	2.9500e-003	7.6000e-004	1.7000e-004	9.3000e-004	0.0000	10.1333	10.1333	6.5000e-004	1.6200e-003	10.6313
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2300e-003	1.3900e-003	0.0172	6.0000e-005	6.7400e-003	3.0000e-005	6.7700e-003	1.7900e-003	3.0000e-005	1.8200e-003	0.0000	5.1207	5.1207	1.4000e-004	1.4000e-004	5.1657
Total	**2.5900e-003**	**0.0258**	**0.0241**	**1.6000e-004**	**9.5100e-003**	**2.1000e-004**	**9.7200e-003**	**2.5500e-003**	**2.0000e-004**	**2.7500e-003**	**0.0000**	**15.2540**	**15.2540**	**7.9000e-004**	**1.7600e-003**	**15.7970**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Fugitive Dust					0.0160	0.0000	0.0160	2.4200e-003	0.0000	2.4200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0387	0.2048	1.2949	2.8300e-003		5.7800e-003	5.7800e-003		5.6700e-003	5.6700e-003	0.0000	248.2911	248.2911	0.0803	0.0000	250.2987
Total	**0.0387**	**0.2048**	**1.2949**	**2.8300e-003**	**0.0160**	**5.7800e-003**	**0.0218**	**2.4200e-003**	**5.6700e-003**	**8.0900e-003**	**0.0000**	**248.2911**	**248.2911**	**0.0803**	**0.0000**	**250.2987**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.6000e-004	0.0244	6.9100e-003	1.0000e-004	2.7700e-003	1.8000e-004	2.9500e-003	7.6000e-004	1.7000e-004	9.3000e-004	0.0000	10.1333	10.1333	6.5000e-004	1.6200e-003	10.6313
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2300e-003	1.3900e-003	0.0172	6.0000e-005	6.7400e-003	3.0000e-005	6.7700e-003	1.7900e-003	3.0000e-005	1.8200e-003	0.0000	5.1207	5.1207	1.4000e-004	1.4000e-004	5.1657
Total	**2.5900e-003**	**0.0258**	**0.0241**	**1.6000e-004**	**9.5100e-003**	**2.1000e-004**	**9.7200e-003**	**2.5500e-003**	**2.0000e-004**	**2.7500e-003**	**0.0000**	**15.2540**	**15.2540**	**7.9000e-004**	**1.7600e-003**	**15.7970**

3.2 Demolition - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Fugitive Dust					0.0143	0.0000	0.0143	2.1700e-003	0.0000	2.1700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0410	0.3188	0.3331	1.1400e-003		0.0119	0.0119		0.0109	0.0109	0.0000	100.1760	100.1760	0.0324	0.0000	100.9860
Total	**0.0410**	**0.3188**	**0.3331**	**1.1400e-003**	**0.0143**	**0.0119**	**0.0262**	**2.1700e-003**	**0.0109**	**0.0131**	**0.0000**	**100.1760**	**100.1760**	**0.0324**	**0.0000**	**100.9860**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.5000e-004	9.6900e-003	2.7700e-003	4.0000e-005	1.1200e-003	7.0000e-005	1.1900e-003	3.1000e-004	7.0000e-005	3.8000e-004	0.0000	4.0039	4.0039	2.6000e-004	6.4000e-004	4.2008
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.5000e-004	5.1000e-004	6.5000e-003	2.0000e-005	2.7200e-003	1.0000e-005	2.7300e-003	7.2000e-004	1.0000e-005	7.4000e-004	0.0000	1.9974	1.9974	5.0000e-005	5.0000e-005	2.0144
Total	**1.0000e-003**	**0.0102**	**9.2700e-003**	**6.0000e-005**	**3.8400e-003**	**8.0000e-005**	**3.9200e-003**	**1.0300e-003**	**8.0000e-005**	**1.1200e-003**	**0.0000**	**6.0013**	**6.0013**	**3.1000e-004**	**6.9000e-004**	**6.2152**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Fugitive Dust					6.4600e-003	0.0000	6.4600e-003	9.8000e-004	0.0000	9.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0155	0.0808	0.5222	1.1400e-003		2.2600e-003	2.2600e-003		2.2200e-003	2.2200e-003	0.0000	100.1759	100.1759	0.0324	0.0000	100.9858
Total	**0.0155**	**0.0808**	**0.5222**	**1.1400e-003**	**6.4600e-003**	**2.2600e-003**	**8.7200e-003**	**9.8000e-004**	**2.2200e-003**	**3.2000e-003**	**0.0000**	**100.1759**	**100.1759**	**0.0324**	**0.0000**	**100.9858**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.5000e-004	9.6900e-003	2.7700e-003	4.0000e-005	1.1200e-003	7.0000e-005	1.1900e-003	3.1000e-004	7.0000e-005	3.8000e-004	0.0000	4.0039	4.0039	2.6000e-004	6.4000e-004	4.2008
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.5000e-004	5.1000e-004	6.5000e-003	2.0000e-005	2.7200e-003	1.0000e-005	2.7300e-003	7.2000e-004	1.0000e-005	7.4000e-004	0.0000	1.9974	1.9974	5.0000e-005	5.0000e-005	2.0144
Total	**1.0000e-003**	**0.0102**	**9.2700e-003**	**6.0000e-005**	**3.8400e-003**	**8.0000e-005**	**3.9200e-003**	**1.0300e-003**	**8.0000e-005**	**1.1200e-003**	**0.0000**	**6.0013**	**6.0013**	**3.1000e-004**	**6.9000e-004**	**6.2152**

3.3 Site Preparation, Grading and Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2400e-003	0.0584	0.0720	2.0000e-004		2.2300e-003	2.2300e-003		2.0500e-003	2.0500e-003	0.0000	17.5707	17.5707	5.6800e-003	0.0000	17.7127
Total	**7.2400e-003**	**0.0584**	**0.0720**	**2.0000e-004**	**0.0000**	**2.2300e-003**	**2.2300e-003**	**0.0000**	**2.0500e-003**	**2.0500e-003**	**0.0000**	**17.5707**	**17.5707**	**5.6800e-003**	**0.0000**	**17.7127**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	1.7000e-004	2.1100e-003	1.0000e-005	8.3000e-004	0.0000	8.3000e-004	2.2000e-004	0.0000	2.2000e-004	0.0000	0.6289	0.6289	2.0000e-005	2.0000e-005	0.6344
Total	**2.7000e-004**	**1.7000e-004**	**2.1100e-003**	**1.0000e-005**	**8.3000e-004**	**0.0000**	**8.3000e-004**	**2.2000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**0.6289**	**0.6289**	**2.0000e-005**	**2.0000e-005**	**0.6344**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9900e-003	0.0205	0.1036	2.0000e-004		4.8000e-004	4.8000e-004		4.6000e-004	4.6000e-004	0.0000	17.5706	17.5706	5.6800e-003	0.0000	17.7127
Total	**2.9900e-003**	**0.0205**	**0.1036**	**2.0000e-004**	**0.0000**	**4.8000e-004**	**4.8000e-004**	**0.0000**	**4.6000e-004**	**4.6000e-004**	**0.0000**	**17.5706**	**17.5706**	**5.6800e-003**	**0.0000**	**17.7127**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	1.7000e-004	2.1100e-003	1.0000e-005	8.3000e-004	0.0000	8.3000e-004	2.2000e-004	0.0000	2.2000e-004	0.0000	0.6289	0.6289	2.0000e-005	2.0000e-005	0.6344
Total	**2.7000e-004**	**1.7000e-004**	**2.1100e-003**	**1.0000e-005**	**8.3000e-004**	**0.0000**	**8.3000e-004**	**2.2000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**0.6289**	**0.6289**	**2.0000e-005**	**2.0000e-005**	**0.6344**

3.3 Site Preparation, Grading and Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0325	0.2425	0.3361	9.4000e-004		8.9700e-003	8.9700e-003		8.2500e-003	8.2500e-003	0.0000	82.8128	82.8128	0.0268	0.0000	83.4824
Total	**0.0325**	**0.2425**	**0.3361**	**9.4000e-004**	**0.0000**	**8.9700e-003**	**8.9700e-003**	**0.0000**	**8.2500e-003**	**8.2500e-003**	**0.0000**	**82.8128**	**82.8128**	**0.0268**	**0.0000**	**83.4824**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	7.3000e-004	9.3200e-003	3.0000e-005	3.9000e-003	2.0000e-005	3.9200e-003	1.0400e-003	2.0000e-005	1.0500e-003	0.0000	2.8658	2.8658	7.0000e-005	8.0000e-005	2.8902
Total	**1.2200e-003**	**7.3000e-004**	**9.3200e-003**	**3.0000e-005**	**3.9000e-003**	**2.0000e-005**	**3.9200e-003**	**1.0400e-003**	**2.0000e-005**	**1.0500e-003**	**0.0000**	**2.8658**	**2.8658**	**7.0000e-005**	**8.0000e-005**	**2.8902**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0140	0.0942	0.4881	9.4000e-004		2.1500e-003	2.1500e-003		2.0900e-003	2.0900e-003	0.0000	82.8127	82.8127	0.0268	0.0000	83.4823
Total	**0.0140**	**0.0942**	**0.4881**	**9.4000e-004**	**0.0000**	**2.1500e-003**	**2.1500e-003**	**0.0000**	**2.0900e-003**	**2.0900e-003**	**0.0000**	**82.8127**	**82.8127**	**0.0268**	**0.0000**	**83.4823**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	7.3000e-004	9.3200e-003	3.0000e-005	3.9000e-003	2.0000e-005	3.9200e-003	1.0400e-003	2.0000e-005	1.0500e-003	0.0000	2.8658	2.8658	7.0000e-005	8.0000e-005	2.8902
Total	**1.2200e-003**	**7.3000e-004**	**9.3200e-003**	**3.0000e-005**	**3.9000e-003**	**2.0000e-005**	**3.9200e-003**	**1.0400e-003**	**2.0000e-005**	**1.0500e-003**	**0.0000**	**2.8658**	**2.8658**	**7.0000e-005**	**8.0000e-005**	**2.8902**

3.4 Foundation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1326	0.9590	1.2480	3.5200e-003		0.0344	0.0344		0.0317	0.0317	0.0000	308.7005	308.7005	0.0998	0.0000	311.1965
Total	**0.1326**	**0.9590**	**1.2480**	**3.5200e-003**	**0.0000**	**0.0344**	**0.0344**	**0.0000**	**0.0317**	**0.0317**	**0.0000**	**308.7005**	**308.7005**	**0.0998**	**0.0000**	**311.1965**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0100e-003	4.7700e-003	0.0612	2.1000e-004	0.0256	1.2000e-004	0.0257	6.8100e-003	1.1000e-004	6.9300e-003	0.0000	18.8161	18.8161	4.9000e-004	5.0000e-004	18.9759
Total	**8.0100e-003**	**4.7700e-003**	**0.0612**	**2.1000e-004**	**0.0256**	**1.2000e-004**	**0.0257**	**6.8100e-003**	**1.1000e-004**	**6.9300e-003**	**0.0000**	**18.8161**	**18.8161**	**4.9000e-004**	**5.0000e-004**	**18.9759**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0523	0.3618	1.6892	3.5200e-003		8.2700e-003	8.2700e-003		8.0000e-003	8.0000e-003	0.0000	308.7002	308.7002	0.0998	0.0000	311.1962
Total	**0.0523**	**0.3618**	**1.6892**	**3.5200e-003**	**0.0000**	**8.2700e-003**	**8.2700e-003**	**0.0000**	**8.0000e-003**	**8.0000e-003**	**0.0000**	**308.7002**	**308.7002**	**0.0998**	**0.0000**	**311.1962**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0100e-003	4.7700e-003	0.0612	2.1000e-004	0.0256	1.2000e-004	0.0257	6.8100e-003	1.1000e-004	6.9300e-003	0.0000	18.8161	18.8161	4.9000e-004	5.0000e-004	18.9759
Total	**8.0100e-003**	**4.7700e-003**	**0.0612**	**2.1000e-004**	**0.0256**	**1.2000e-004**	**0.0257**	**6.8100e-003**	**1.1000e-004**	**6.9300e-003**	**0.0000**	**18.8161**	**18.8161**	**4.9000e-004**	**5.0000e-004**	**18.9759**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Off-Road	0.0127	0.1596	0.1960	3.0000e-004		4.8300e-003	4.8300e-003		4.4400e-003	4.4400e-003	0.0000	26.2966	26.2966	8.5000e-003	0.0000	26.5092
Total	**0.0127**	**0.1596**	**0.1960**	**3.0000e-004**		**4.8300e-003**	**4.8300e-003**		**4.4400e-003**	**4.4400e-003**	**0.0000**	**26.2966**	**26.2966**	**8.5000e-003**	**0.0000**	**26.5092**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3600e-003	0.0869	0.0312	3.8000e-004	0.0123	4.9000e-004	0.0127	3.5400e-003	4.6000e-004	4.0100e-003	0.0000	37.8188	37.8188	1.4600e-003	5.3300e-003	39.4421
Worker	0.0205	0.0122	0.1567	5.3000e-004	0.0655	3.1000e-004	0.0659	0.0174	2.9000e-004	0.0177	0.0000	48.1691	48.1691	1.2600e-003	1.2700e-003	48.5783
Total	**0.0229**	**0.0991**	**0.1879**	**9.1000e-004**	**0.0778**	**8.0000e-004**	**0.0786**	**0.0210**	**7.5000e-004**	**0.0217**	**0.0000**	**85.9879**	**85.9879**	**2.7200e-003**	**6.6000e-003**	**88.0204**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	8.4700e-003	0.1203	0.2256	3.0000e-004		2.4700e-003	2.4700e-003		2.3000e-003	2.3000e-003	0.0000	26.2966	26.2966	8.5000e-003	0.0000	26.5092
Total	**8.4700e-003**	**0.1203**	**0.2256**	**3.0000e-004**		**2.4700e-003**	**2.4700e-003**		**2.3000e-003**	**2.3000e-003**	**0.0000**	**26.2966**	**26.2966**	**8.5000e-003**	**0.0000**	**26.5092**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3600e-003	0.0869	0.0312	3.8000e-004	0.0123	4.9000e-004	0.0127	3.5400e-003	4.6000e-004	4.0100e-003	0.0000	37.8188	37.8188	1.4600e-003	5.3300e-003	39.4421
Worker	0.0205	0.0122	0.1567	5.3000e-004	0.0655	3.1000e-004	0.0659	0.0174	2.9000e-004	0.0177	0.0000	48.1691	48.1691	1.2600e-003	1.2700e-003	48.5783
Total	**0.0229**	**0.0991**	**0.1879**	**9.1000e-004**	**0.0778**	**8.0000e-004**	**0.0786**	**0.0210**	**7.5000e-004**	**0.0217**	**0.0000**	**85.9879**	**85.9879**	**2.7200e-003**	**6.6000e-003**	**88.0204**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0111	0.1397	0.1715	2.6000e-004		4.2200e-003	4.2200e-003		3.8900e-003	3.8900e-003	0.0000	23.0095	23.0095	7.4400e-003	0.0000	23.1956

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**0.0111**	**0.1397**	**0.1715**	**2.6000e-004**		**4.2200e-003**	**4.2200e-003**		**3.8900e-003**	**3.8900e-003**	**0.0000**	**23.0095**	**23.0095**	**7.4400e-003**	**0.0000**	**23.1956**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-003	0.0750	0.0266	3.3000e-004	0.0107	4.2000e-004	0.0111	3.1000e-003	4.0000e-004	3.5000e-003	0.0000	32.4751	32.4751	1.2500e-003	4.5600e-003	33.8666
Worker	0.0170	9.7100e-003	0.1293	4.5000e-004	0.0574	2.6000e-004	0.0576	0.0153	2.4000e-004	0.0155	0.0000	40.8571	40.8571	1.0100e-003	1.0500e-003	41.1942
Total	**0.0190**	**0.0847**	**0.1559**	**7.8000e-004**	**0.0681**	**6.8000e-004**	**0.0688**	**0.0184**	**6.4000e-004**	**0.0190**	**0.0000**	**73.3322**	**73.3322**	**2.2600e-003**	**5.6100e-003**	**75.0608**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.4100e-003	0.1052	0.1974	2.6000e-004		2.1600e-003	2.1600e-003		2.0100e-003	2.0100e-003	0.0000	23.0095	23.0095	7.4400e-003	0.0000	23.1956
Total	**7.4100e-003**	**0.1052**	**0.1974**	**2.6000e-004**		**2.1600e-003**	**2.1600e-003**		**2.0100e-003**	**2.0100e-003**	**0.0000**	**23.0095**	**23.0095**	**7.4400e-003**	**0.0000**	**23.1956**

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-003	0.0750	0.0266	3.3000e-004	0.0107	4.2000e-004	0.0111	3.1000e-003	4.0000e-004	3.5000e-003	0.0000	32.4751	32.4751	1.2500e-003	4.5600e-003	33.8666
Worker	0.0170	9.7100e-003	0.1293	4.5000e-004	0.0574	2.6000e-004	0.0576	0.0153	2.4000e-004	0.0155	0.0000	40.8571	40.8571	1.0100e-003	1.0500e-003	41.1942
Total	**0.0190**	**0.0847**	**0.1559**	**7.8000e-004**	**0.0681**	**6.8000e-004**	**0.0688**	**0.0184**	**6.4000e-004**	**0.0190**	**0.0000**	**73.3322**	**73.3322**	**2.2600e-003**	**5.6100e-003**	**75.0608**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2695					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2100e-003	0.0679	0.0941	1.3000e-004		3.6400e-003	3.6400e-003		3.3500e-003	3.3500e-003	0.0000	11.1462	11.1462	3.6000e-003	0.0000	11.2363
Total	**0.2768**	**0.0679**	**0.0941**	**1.3000e-004**		**3.6400e-003**	**3.6400e-003**		**3.3500e-003**	**3.3500e-003**	**0.0000**	**11.1462**	**11.1462**	**3.6000e-003**	**0.0000**	**11.2363**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0329	0.0196	0.2514	8.4000e-004	0.1052	5.0000e-004	0.1057	0.0280	4.6000e-004	0.0285	0.0000	77.2906	77.2906	2.0200e-003	2.0300e-003	77.9472
Total	**0.0329**	**0.0196**	**0.2514**	**8.4000e-004**	**0.1052**	**5.0000e-004**	**0.1057**	**0.0280**	**4.6000e-004**	**0.0285**	**0.0000**	**77.2906**	**77.2906**	**2.0200e-003**	**2.0300e-003**	**77.9472**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2695					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3900e-003	0.0374	0.0953	1.3000e-004		1.9200e-003	1.9200e-003		1.7800e-003	1.7800e-003	0.0000	11.1462	11.1462	3.6000e-003	0.0000	11.2363
Total	**0.2739**	**0.0374**	**0.0953**	**1.3000e-004**		**1.9200e-003**	**1.9200e-003**		**1.7800e-003**	**1.7800e-003**	**0.0000**	**11.1462**	**11.1462**	**3.6000e-003**	**0.0000**	**11.2363**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0329	0.0196	0.2514	8.4000e-004	0.1052	5.0000e-004	0.1057	0.0280	4.6000e-004	0.0285	0.0000	77.2906	77.2906	2.0200e-003	2.0300e-003	77.9472
Total	**0.0329**	**0.0196**	**0.2514**	**8.4000e-004**	**0.1052**	**5.0000e-004**	**0.1057**	**0.0280**	**4.6000e-004**	**0.0285**	**0.0000**	**77.2906**	**77.2906**	**2.0200e-003**	**2.0300e-003**	**77.9472**

3.6 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3952					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0106	0.0996	0.1380	1.9000e-004		5.3300e-003	5.3300e-003		4.9100e-003	4.9100e-003	0.0000	16.3436	16.3436	5.2900e-003	0.0000	16.4757
Total	**0.4058**	**0.0996**	**0.1380**	**1.9000e-004**		**5.3300e-003**	**5.3300e-003**		**4.9100e-003**	**4.9100e-003**	**0.0000**	**16.3436**	**16.3436**	**5.2900e-003**	**0.0000**	**16.4757**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0457	0.0261	0.3476	1.2000e-003	0.1542	7.0000e-004	0.1549	0.0410	6.5000e-004	0.0417	0.0000	109.8596	109.8596	2.7100e-003	2.8100e-003	110.7659
Total	**0.0457**	**0.0261**	**0.3476**	**1.2000e-003**	**0.1542**	**7.0000e-004**	**0.1549**	**0.0410**	**6.5000e-004**	**0.0417**	**0.0000**	**109.8596**	**109.8596**	**2.7100e-003**	**2.8100e-003**	**110.7659**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3952					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.4300e-003	0.0548	0.1397	1.9000e-004		2.8200e-003	2.8200e-003		2.6100e-003	2.6100e-003	0.0000	16.3435	16.3435	5.2900e-003	0.0000	16.4757
Total	**0.4017**	**0.0548**	**0.1397**	**1.9000e-004**		**2.8200e-003**	**2.8200e-003**		**2.6100e-003**	**2.6100e-003**	**0.0000**	**16.3435**	**16.3435**	**5.2900e-003**	**0.0000**	**16.4757**

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0457	0.0261	0.3476	1.2000e-003	0.1542	7.0000e-004	0.1549	0.0410	6.5000e-004	0.0417	0.0000	109.8596	109.8596	2.7100e-003	2.8100e-003	110.7659
Total	**0.0457**	**0.0261**	**0.3476**	**1.2000e-003**	**0.1542**	**7.0000e-004**	**0.1549**	**0.0410**	**6.5000e-004**	**0.0417**	**0.0000**	**109.8596**	**109.8596**	**2.7100e-003**	**2.8100e-003**	**110.7659**

3.6 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0167					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5000e-004	4.2000e-003	5.8200e-003	1.0000e-005		2.2000e-004	2.2000e-004		2.1000e-004	2.1000e-004	0.0000	0.6888	0.6888	2.2000e-004	0.0000	0.6944
Total	**0.0171**	**4.2000e-003**	**5.8200e-003**	**1.0000e-005**		**2.2000e-004**	**2.2000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**0.6888**	**0.6888**	**2.2000e-004**	**0.0000**	**0.6944**

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8200e-003	1.0100e-003	0.0139	5.0000e-005	6.5000e-003	3.0000e-005	6.5300e-003	1.7300e-003	3.0000e-005	1.7500e-003	0.0000	4.4971	4.4971	1.0000e-004	1.1000e-004	4.5333
Total	**1.8200e-003**	**1.0100e-003**	**0.0139**	**5.0000e-005**	**6.5000e-003**	**3.0000e-005**	**6.5300e-003**	**1.7300e-003**	**3.0000e-005**	**1.7500e-003**	**0.0000**	**4.4971**	**4.4971**	**1.0000e-004**	**1.1000e-004**	**4.5333**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0167					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	2.3100e-003	5.8900e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.1000e-004	1.1000e-004	0.0000	0.6888	0.6888	2.2000e-004	0.0000	0.6944
Total	**0.0169**	**2.3100e-003**	**5.8900e-003**	**1.0000e-005**		**1.2000e-004**	**1.2000e-004**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**0.6888**	**0.6888**	**2.2000e-004**	**0.0000**	**0.6944**

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8200e-003	1.0100e-003	0.0139	5.0000e-005	6.5000e-003	3.0000e-005	6.5300e-003	1.7300e-003	3.0000e-005	1.7500e-003	0.0000	4.4971	4.4971	1.0000e-004	1.1000e-004	4.5333
Total	**1.8200e-003**	**1.0100e-003**	**0.0139**	**5.0000e-005**	**6.5000e-003**	**3.0000e-005**	**6.5300e-003**	**1.7300e-003**	**3.0000e-005**	**1.7500e-003**	**0.0000**	**4.4971**	**4.4971**	**1.0000e-004**	**1.1000e-004**	**4.5333**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.544281	0.061644	0.199793	0.122945	0.023341	0.005632	0.006920	0.003727	0.000656	0.000390	0.027229	0.000725	0.002

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000

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Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	tons	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Marin NCLH - Hodges/Shuck & Reed/Storer/Shuck (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Marin NCLH - Landscaping and Site Improvements

Marin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.00	1000sqft	0.02	1.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2027
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - For landscaping and general site improvements. No new construction for this run.

Construction Phase - Based on data request response

Off-road Equipment - based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - s

Trips and VMT - Based on data request response. Hauling trips are estimated using the number of dump trucks in each phase.

Architectural Coating -

Woodstoves -

Area Coating - Construction run only

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Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Energy Use - Construction run only

Water And Wastewater - Construction run only

Solid Waste - Construction run only

Construction Off-road Equipment Mitigation - 90% tier 4 construction equipments and watering exposed area twice a day mitigation applied.

Area Mitigation -

Fleet Mix -

Off-road Equipment - Based on data request response

Vehicle Trips - Construction run only

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Consumer Products - Construction run only

Landscape Equipment - Construction run only

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Nonresidential_Exterior	1	0
tblAreaCoating	Area_Nonresidential_Interior	2	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintParkingValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	160.00
tblConstructionPhase	NumDays	1.00	80.00
tblConstructionPhase	NumDays	1.00	40.00
tblConstructionPhase	NumDays	1.00	289.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	3.58	0.00

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblEnergyUse	NT24E	4.80	0.00
tblEnergyUse	NT24NG	1.01	0.00
tblEnergyUse	T24E	3.66	0.00
tblEnergyUse	T24NG	18.14	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	LandUseSquareFeet	1,000.00	1.00
tblOffRoadEquipment	HorsePower	9.00	350.00
tblOffRoadEquipment	HorsePower	80.00	130.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	63.00	130.00
tblOffRoadEquipment	HorsePower	231.00	367.00
tblOffRoadEquipment	HorsePower	65.00	130.00
tblOffRoadEquipment	HorsePower	158.00	273.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	402.00	430.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	84.00	197.00
tblOffRoadEquipment	HorsePower	80.00	249.00
tblOffRoadEquipment	HorsePower	367.00	304.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		MISC. SITE FURNISHINGS
tblOffRoadEquipment	PhaseName		MISC. SITE FURNISHINGS
tblOffRoadEquipment	PhaseName		IRRIGATION & PLANTING
tblOffRoadEquipment	PhaseName		MISC. SITE FURNISHINGS
tblOffRoadEquipment	PhaseName		IRRIGATION & PLANTING
tblOffRoadEquipment	PhaseName		CURB & GUTTER, HARDSCAPE & PAVING
tblOffRoadEquipment	PhaseName		CURB & GUTTER, HARDSCAPE & PAVING
tblOffRoadEquipment	PhaseName		CURB & GUTTER, HARDSCAPE & PAVING
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	0.93	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripNumber	18.00	40.00
tblTripsAndVMT	WorkerTripNumber	23.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	15.00
tblTripsAndVMT	WorkerTripNumber	10.00	30.00
tblVehicleTrips	ST_TR	2.21	0.00
tblVehicleTrips	SU_TR	0.70	0.00

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	WD_TR	9.74	0.00
tblWater	IndoorWaterUseRate	177,733.75	0.00
tblWater	OutdoorWaterUseRate	108,933.59	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.1331	1.0496	1.3319	3.9000e-003	0.0616	0.0381	0.0997	9.6900e-003	0.0353	0.0450	0.0000	341.6918	341.6918	0.0898	4.0000e-004	344.0570
2026	0.0723	0.5342	0.7690	2.0500e-003	0.0249	0.0206	0.0454	6.6200e-003	0.0191	0.0258	0.0000	179.9491	179.9491	0.0377	4.6000e-004	181.0281
2027	0.0111	0.0600	0.1172	2.4000e-004	0.0177	3.1400e-003	0.0209	4.7200e-003	2.8900e-003	7.6100e-003	0.0000	21.6578	21.6578	3.3200e-003	3.1000e-004	21.8324
Maximum	**0.1331**	**1.0496**	**1.3319**	**3.9000e-003**	**0.0616**	**0.0381**	**0.0997**	**9.6900e-003**	**0.0353**	**0.0450**	**0.0000**	**341.6918**	**341.6918**	**0.0898**	**4.6000e-004**	**344.0570**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.0586	0.3771	1.9285	3.9000e-003	0.0383	9.1900e-003	0.0475	7.1700e-003	8.9000e-003	0.0161	0.0000	341.6914	341.6914	0.0898	4.0000e-004	344.0566

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2026	0.0327	0.1707	1.0323	2.0500e-003	0.0249	4.6600e-003	0.0295	6.6200e-003	4.5000e-003	0.0111	0.0000	179.9489	179.9489	0.0377	4.6000e-004	181.0279
2027	6.2900e-003	8.4600e-003	0.1191	2.4000e-004	0.0177	2.5000e-004	0.0180	4.7200e-003	2.5000e-004	4.9600e-003	0.0000	21.6577	21.6577	3.3200e-003	3.1000e-004	21.8324
Maximum	**0.0586**	**0.3771**	**1.9285**	**3.9000e-003**	**0.0383**	**9.1900e-003**	**0.0475**	**7.1700e-003**	**8.9000e-003**	**0.0161**	**0.0000**	**341.6914**	**341.6914**	**0.0898**	**4.6000e-004**	**344.0566**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**54.94**	**66.16**	**-38.86**	**0.00**	**22.39**	**77.17**	**42.78**	**11.98**	**76.18**	**58.96**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**5-19-2025**	**8-18-2025**	0.5877	0.2033
2	**8-19-2025**	**11-18-2025**	0.4045	0.1564
3	**11-19-2025**	**2-18-2026**	0.3700	0.1490
4	**2-19-2026**	**5-18-2026**	0.2886	0.1016
5	**5-19-2026**	**8-18-2026**	0.0675	0.0109
6	**8-19-2026**	**11-18-2026**	0.0315	0.0068
7	**11-19-2026**	**2-18-2027**	0.0316	0.0069
8	**2-19-2027**	**5-18-2027**	0.0302	0.0064
9	**5-19-2027**	**8-18-2027**	0.0243	0.0050
		Highest	0.5877	0.2033

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	SURVEY, SITE UTILITIES, GRUB & CLEAR	Site Preparation	5/19/2025	9/5/2025	5	80	
2	CURB & GUTTER, HARDSCAPE & PAVING	Paving	9/8/2025	4/17/2026	5	160	
3	MISC. SITE FURNISHINGS	Site Preparation	4/20/2026	6/12/2026	5	40	
4	IRRIGATION & PLANTING	Site Preparation	6/22/2026	7/29/2027	5	289	

Acres of Grading (Site Preparation Phase): 80

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
IRRIGATION & PLANTING	Skid Steer Loaders	1	8.00	130	0.37
IRRIGATION & PLANTING	Forklifts	1	8.00	83	0.20
SURVEY, SITE UTILITIES, GRUB & CLEAR	Excavators	1	8.00	273	0.38
SURVEY, SITE UTILITIES, GRUB & CLEAR	Off-Highway Trucks	1	8.00	430	0.38
SURVEY, SITE UTILITIES, GRUB & CLEAR	Rollers	1	8.00	249	0.38
SURVEY, SITE UTILITIES, GRUB & CLEAR	Scrapers	1	8.00	304	0.48
SURVEY, SITE UTILITIES, GRUB & CLEAR	Skid Steer Loaders	2	8.00	74	0.37
SURVEY, SITE UTILITIES, GRUB & CLEAR	Tractors/Loaders/Backhoes	1	8.00	104	0.37
CURB & GUTTER, HARDSCAPE & PAVING	Cement and Mortar Mixers	2	8.00	350	0.56
CURB & GUTTER, HARDSCAPE & PAVING	Off-Highway Trucks	2	4.00	350	0.38

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

CURB & GUTTER, HARDSCAPE & PAVING	Pumps	1	8.00	197	0.74
CURB & GUTTER, HARDSCAPE & PAVING	Rollers	1	8.00	130	0.38
CURB & GUTTER, HARDSCAPE & PAVING	Skid Steer Loaders	1	8.00	74	0.37
CURB & GUTTER, HARDSCAPE & PAVING	Tractors/Loaders/Backhoes	2	8.00	104	0.37
MISC. SITE FURNISHINGS	Aerial Lifts	1	8.00	130	0.31
MISC. SITE FURNISHINGS	Cranes	1	8.00	367	0.29
MISC. SITE FURNISHINGS	Forklifts	1	8.00	83	0.20

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
IRRIGATION & PLANTING	4	30.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
SURVEY, SITE UTILITIES, GRUB &	7	40.00	0.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
CURB & GUTTER, HARDSCAPE &	9	20.00	0.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
MISC. SITE FURNISHINGS	3	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 SURVEY, SITE UTILITIES, GRUB & CLEAR - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0424	0.0000	0.0424	4.5800e-003	0.0000	4.5800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	0.0737	0.6353	0.6938	2.0700e-003		0.0235	0.0235		0.0216	0.0216	0.0000	182.0251	182.0251	0.0589	0.0000	183.4968
Total	**0.0737**	**0.6353**	**0.6938**	**2.0700e-003**	**0.0424**	**0.0235**	**0.0659**	**4.5800e-003**	**0.0216**	**0.0262**	**0.0000**	**182.0251**	**182.0251**	**0.0589**	**0.0000**	**183.4968**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	2.9000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1208	0.1208	1.0000e-005	2.0000e-005	0.1268
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9400e-003	2.3500e-003	0.0301	1.0000e-004	0.0126	6.0000e-005	0.0127	3.3500e-003	6.0000e-005	3.4100e-003	0.0000	9.2633	9.2633	2.4000e-004	2.4000e-004	9.3420
Total	**3.9400e-003**	**2.6400e-003**	**0.0302**	**1.0000e-004**	**0.0126**	**6.0000e-005**	**0.0127**	**3.3600e-003**	**6.0000e-005**	**3.4200e-003**	**0.0000**	**9.3841**	**9.3841**	**2.5000e-004**	**2.6000e-004**	**9.4688**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0191	0.0000	0.0191	2.0600e-003	0.0000	2.0600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	0.0294	0.2116	1.0238	2.0700e-003		4.7500e-003	4.7500e-003		4.6200e-003	4.6200e-003	0.0000	182.0248	182.0248	0.0589	0.0000	183.4966
Total	**0.0294**	**0.2116**	**1.0238**	**2.0700e-003**	**0.0191**	**4.7500e-003**	**0.0238**	**2.0600e-003**	**4.6200e-003**	**6.6800e-003**	**0.0000**	**182.0248**	**182.0248**	**0.0589**	**0.0000**	**183.4966**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	2.9000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1208	0.1208	1.0000e-005	2.0000e-005	0.1268
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9400e-003	2.3500e-003	0.0301	1.0000e-004	0.0126	6.0000e-005	0.0127	3.3500e-003	6.0000e-005	3.4100e-003	0.0000	9.2633	9.2633	2.4000e-004	2.4000e-004	9.3420
Total	**3.9400e-003**	**2.6400e-003**	**0.0302**	**1.0000e-004**	**0.0126**	**6.0000e-005**	**0.0127**	**3.3600e-003**	**6.0000e-005**	**3.4200e-003**	**0.0000**	**9.3841**	**9.3841**	**2.5000e-004**	**2.6000e-004**	**9.4688**

3.3 CURB & GUTTER, HARDSCAPE & PAVING - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0534	0.4104	0.5923	1.6700e-003		0.0145	0.0145		0.0136	0.0136	0.0000	145.4146	145.4146	0.0306	0.0000	146.1794

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0534**	**0.4104**	**0.5923**	**1.6700e-003**		**0.0145**	**0.0145**		**0.0136**	**0.0136**	**0.0000**	**145.4146**	**145.4146**	**0.0306**	**0.0000**	**146.1794**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0627	0.0627	0.0000	1.0000e-005	0.0658
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0400e-003	1.2200e-003	0.0156	5.0000e-005	6.5400e-003	3.0000e-005	6.5700e-003	1.7400e-003	3.0000e-005	1.7700e-003	0.0000	4.8053	4.8053	1.3000e-004	1.3000e-004	4.8462
Total	**2.0400e-003**	**1.3700e-003**	**0.0157**	**5.0000e-005**	**6.5600e-003**	**3.0000e-005**	**6.5900e-003**	**1.7400e-003**	**3.0000e-005**	**1.7800e-003**	**0.0000**	**4.8680**	**4.8680**	**1.3000e-004**	**1.4000e-004**	**4.9119**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.1615	0.8588	1.6700e-003		4.3500e-003	4.3500e-003		4.1900e-003	4.1900e-003	0.0000	145.4144	145.4144	0.0306	0.0000	146.1793

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.1615**	**0.8588**	**1.6700e-003**		**4.3500e-003**	**4.3500e-003**		**4.1900e-003**	**4.1900e-003**	**0.0000**	**145.4144**	**145.4144**	**0.0306**	**0.0000**	**146.1793**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0627	0.0627	0.0000	1.0000e-005	0.0658
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0400e-003	1.2200e-003	0.0156	5.0000e-005	6.5400e-003	3.0000e-005	6.5700e-003	1.7400e-003	3.0000e-005	1.7700e-003	0.0000	4.8053	4.8053	1.3000e-004	1.3000e-004	4.8462
Total	**2.0400e-003**	**1.3700e-003**	**0.0157**	**5.0000e-005**	**6.5600e-003**	**3.0000e-005**	**6.5900e-003**	**1.7400e-003**	**3.0000e-005**	**1.7800e-003**	**0.0000**	**4.8680**	**4.8680**	**1.3000e-004**	**1.4000e-004**	**4.9119**

3.3 CURB & GUTTER, HARDSCAPE & PAVING - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0495	0.3807	0.5494	1.5500e-003		0.0135	0.0135		0.0126	0.0126	0.0000	134.9027	134.9027	0.0284	0.0000	135.6123

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0495**	**0.3807**	**0.5494**	**1.5500e-003**		**0.0135**	**0.0135**		**0.0126**	**0.0126**	**0.0000**	**134.9027**	**134.9027**	**0.0284**	**0.0000**	**135.6123**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.4000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0569	0.0569	0.0000	1.0000e-005	0.0597
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-003	1.0300e-003	0.0137	5.0000e-005	6.0700e-003	3.0000e-005	6.0900e-003	1.6100e-003	3.0000e-005	1.6400e-003	0.0000	4.3214	4.3214	1.1000e-004	1.1000e-004	4.3571
Total	**1.8000e-003**	**1.1700e-003**	**0.0137**	**5.0000e-005**	**6.0900e-003**	**3.0000e-005**	**6.1100e-003**	**1.6100e-003**	**3.0000e-005**	**1.6500e-003**	**0.0000**	**4.3783**	**4.3783**	**1.1000e-004**	**1.2000e-004**	**4.4168**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0215	0.1498	0.7967	1.5500e-003		4.0300e-003	4.0300e-003		3.8800e-003	3.8800e-003	0.0000	134.9025	134.9025	0.0284	0.0000	135.6121

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0215**	**0.1498**	**0.7967**	**1.5500e-003**		**4.0300e-003**	**4.0300e-003**		**3.8800e-003**	**3.8800e-003**	**0.0000**	**134.9025**	**134.9025**	**0.0284**	**0.0000**	**135.6121**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.4000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0569	0.0569	0.0000	1.0000e-005	0.0597
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-003	1.0300e-003	0.0137	5.0000e-005	6.0700e-003	3.0000e-005	6.0900e-003	1.6100e-003	3.0000e-005	1.6400e-003	0.0000	4.3214	4.3214	1.1000e-004	1.1000e-004	4.3571
Total	**1.8000e-003**	**1.1700e-003**	**0.0137**	**5.0000e-005**	**6.0900e-003**	**3.0000e-005**	**6.1100e-003**	**1.6100e-003**	**3.0000e-005**	**1.6500e-003**	**0.0000**	**4.3783**	**4.3783**	**1.1000e-004**	**1.2000e-004**	**4.4168**

3.4 MISC. SITE FURNISHINGS - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	9.8200e-003	0.0961	0.0900	2.1000e-004		4.1200e-003	4.1200e-003		3.7900e-003	3.7900e-003	0.0000	18.5788	18.5788	6.0100e-003	0.0000	18.7290
Total	**9.8200e-003**	**0.0961**	**0.0900**	**2.1000e-004**	**0.0000**	**4.1200e-003**	**4.1200e-003**	**0.0000**	**3.7900e-003**	**3.7900e-003**	**0.0000**	**18.5788**	**18.5788**	**6.0100e-003**	**0.0000**	**18.7290**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-004	4.0000e-004	5.3300e-003	2.0000e-005	2.3600e-003	1.0000e-005	2.3700e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	1.6837	1.6837	4.0000e-005	4.0000e-005	1.6976
Total	**7.0000e-004**	**4.0000e-004**	**5.3300e-003**	**2.0000e-005**	**2.3600e-003**	**1.0000e-005**	**2.3700e-003**	**6.3000e-004**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**1.6837**	**1.6837**	**4.0000e-005**	**4.0000e-005**	**1.6976**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	2.6000e-003	0.0113	0.1043	2.1000e-004		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	18.5788	18.5788	6.0100e-003	0.0000	18.7290
Total	**2.6000e-003**	**0.0113**	**0.1043**	**2.1000e-004**	**0.0000**	**3.5000e-004**	**3.5000e-004**	**0.0000**	**3.5000e-004**	**3.5000e-004**	**0.0000**	**18.5788**	**18.5788**	**6.0100e-003**	**0.0000**	**18.7290**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-004	4.0000e-004	5.3300e-003	2.0000e-005	2.3600e-003	1.0000e-005	2.3700e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	1.6837	1.6837	4.0000e-005	4.0000e-005	1.6976
Total	**7.0000e-004**	**4.0000e-004**	**5.3300e-003**	**2.0000e-005**	**2.3600e-003**	**1.0000e-005**	**2.3700e-003**	**6.3000e-004**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**1.6837**	**1.6837**	**4.0000e-005**	**4.0000e-005**	**1.6976**

3.5 IRRIGATION & PLANTING - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	5.6300e-003	0.0531	0.0735	1.0000e-004		2.8400e-003	2.8400e-003		2.6100e-003	2.6100e-003	0.0000	8.7040	8.7040	2.8200e-003	0.0000	8.7744
Total	**5.6300e-003**	**0.0531**	**0.0735**	**1.0000e-004**	**0.0000**	**2.8400e-003**	**2.8400e-003**	**0.0000**	**2.6100e-003**	**2.6100e-003**	**0.0000**	**8.7040**	**8.7040**	**2.8200e-003**	**0.0000**	**8.7744**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8600e-003	2.7800e-003	0.0370	1.3000e-004	0.0164	7.0000e-005	0.0165	4.3700e-003	7.0000e-005	4.4400e-003	0.0000	11.7015	11.7015	2.9000e-004	3.0000e-004	11.7981
Total	**4.8600e-003**	**2.7800e-003**	**0.0370**	**1.3000e-004**	**0.0164**	**7.0000e-005**	**0.0165**	**4.3700e-003**	**7.0000e-005**	**4.4400e-003**	**0.0000**	**11.7015**	**11.7015**	**2.9000e-004**	**3.0000e-004**	**11.7981**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	1.2200e-003	5.2900e-003	0.0753	1.0000e-004		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	8.7040	8.7040	2.8200e-003	0.0000	8.7744
Total	**1.2200e-003**	**5.2900e-003**	**0.0753**	**1.0000e-004**	**0.0000**	**1.6000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**1.6000e-004**	**0.0000**	**8.7040**	**8.7040**	**2.8200e-003**	**0.0000**	**8.7744**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8600e-003	2.7800e-003	0.0370	1.3000e-004	0.0164	7.0000e-005	0.0165	4.3700e-003	7.0000e-005	4.4400e-003	0.0000	11.7015	11.7015	2.9000e-004	3.0000e-004	11.7981
Total	**4.8600e-003**	**2.7800e-003**	**0.0370**	**1.3000e-004**	**0.0164**	**7.0000e-005**	**0.0165**	**4.3700e-003**	**7.0000e-005**	**4.4400e-003**	**0.0000**	**11.7015**	**11.7015**	**2.9000e-004**	**3.0000e-004**	**11.7981**

3.5 IRRIGATION & PLANTING - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	6.0800e-003	0.0573	0.0793	1.1000e-004		3.0600e-003	3.0600e-003		2.8200e-003	2.8200e-003	0.0000	9.3929	9.3929	3.0400e-003	0.0000	9.4688
Total	**6.0800e-003**	**0.0573**	**0.0793**	**1.1000e-004**	**0.0000**	**3.0600e-003**	**3.0600e-003**	**0.0000**	**2.8200e-003**	**2.8200e-003**	**0.0000**	**9.3929**	**9.3929**	**3.0400e-003**	**0.0000**	**9.4688**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9700e-003	2.7500e-003	0.0379	1.3000e-004	0.0177	8.0000e-005	0.0178	4.7200e-003	7.0000e-005	4.7900e-003	0.0000	12.2649	12.2649	2.9000e-004	3.1000e-004	12.3636
Total	**4.9700e-003**	**2.7500e-003**	**0.0379**	**1.3000e-004**	**0.0177**	**8.0000e-005**	**0.0178**	**4.7200e-003**	**7.0000e-005**	**4.7900e-003**	**0.0000**	**12.2649**	**12.2649**	**2.9000e-004**	**3.1000e-004**	**12.3636**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	1.3200e-003	5.7100e-003	0.0812	1.1000e-004		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	9.3928	9.3928	3.0400e-003	0.0000	9.4688
Total	**1.3200e-003**	**5.7100e-003**	**0.0812**	**1.1000e-004**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**9.3928**	**9.3928**	**3.0400e-003**	**0.0000**	**9.4688**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9700e-003	2.7500e-003	0.0379	1.3000e-004	0.0177	8.0000e-005	0.0178	4.7200e-003	7.0000e-005	4.7900e-003	0.0000	12.2649	12.2649	2.9000e-004	3.1000e-004	12.3636
Total	**4.9700e-003**	**2.7500e-003**	**0.0379**	**1.3000e-004**	**0.0177**	**8.0000e-005**	**0.0178**	**4.7200e-003**	**7.0000e-005**	**4.7900e-003**	**0.0000**	**12.2649**	**12.2649**	**2.9000e-004**	**3.1000e-004**	**12.3636**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.544281	0.061644	0.199793	0.122945	0.023341	0.005632	0.006920	0.003727	0.000656	0.000390	0.027229	0.000725	0.002

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	kWh/yr	MT/yr			
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	tons	MT/yr			
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Marin NCLH - Landscaping and Site Improvements - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Marin NCLH - New Administriation Building - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Marin NCLH - New Administriation Building

Marin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	15.80	1000sqft	0.36	15,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2027
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on PD

Construction Phase - Based on data request response

Off-road Equipment - based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Trips and VMT - Based on data request response. Hauling trips are estimated using the number of dump trucks in each phase.

Architectural Coating -

Date: 10/6/2022 1:24 AM

Marin NCLH - New Administriation Building - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Woodstoves -

Area Coating - Construction run only

Energy Use - Construction run only

Water And Wastewater - Contruction run only

Solid Waste - Construction run only

Construction Off-road Equipment Mitigation - 90% tier 4 construction equipments and watering exposed area twice a day mitigation applied.

Area Mitigation -

Fleet Mix -

Vehicle Trips - Copnstruction run only

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Consumer Products - Construction run only

Landscape Equipment - Construction run only

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	7900	0
tblAreaCoating	Area_Nonresidential_Interior	23700	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00

Marin NCLH - New Administriation Building - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	150.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	2.00	40.00
tblConstructionPhase	NumDays	1.00	30.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	3.58	0.00
tblEnergyUse	NT24E	4.80	0.00
tblEnergyUse	NT24NG	1.01	0.00
tblEnergyUse	T24E	3.66	0.00
tblEnergyUse	T24NG	18.14	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblOffRoadEquipment	HorsePower	231.00	367.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	97.00	104.00

Marin NCLH - New Administriation Building - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	63.00	130.00
tblOffRoadEquipment	HorsePower	63.00	49.00
tblOffRoadEquipment	HorsePower	9.00	350.00
tblOffRoadEquipment	HorsePower	9.00	350.00
tblOffRoadEquipment	HorsePower	158.00	273.00
tblOffRoadEquipment	HorsePower	158.00	24.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	402.00	430.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	84.00	197.00
tblOffRoadEquipment	HorsePower	132.00	225.00
tblOffRoadEquipment	HorsePower	80.00	249.00
tblOffRoadEquipment	HorsePower	80.00	130.00
tblOffRoadEquipment	HorsePower	367.00	304.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	130.00
tblOffRoadEquipment	OffRoadEquipmentType	Off-Highway Trucks	Pumps
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Structure and Exterior Finishes
tblOffRoadEquipment	PhaseName		Structure and Exterior Finishes
tblOffRoadEquipment	PhaseName		Foundation
tblOffRoadEquipment	PhaseName		Foundation
tblOffRoadEquipment	PhaseName		Interior Finishes
tblOffRoadEquipment	PhaseName		Foundation
tblOffRoadEquipment	PhaseName		Foundation
tblOffRoadEquipment	PhaseName		Foundation
tblOffRoadEquipment	PhaseName		Interior Finishes
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	14.69	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripNumber	18.00	30.00
tblTripsAndVMT	WorkerTripNumber	20.00	30.00
tblTripsAndVMT	WorkerTripNumber	18.00	40.00
tblTripsAndVMT	WorkerTripNumber	5.00	60.00
tblTripsAndVMT	WorkerTripNumber	1.00	60.00
tblVehicleTrips	ST_TR	2.21	0.00

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tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	WD_TR	9.74	0.00
tblWater	IndoorWaterUseRate	2,808,193.22	0.00
tblWater	OutdoorWaterUseRate	1,721,150.68	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	2.0600e-003	0.0183	0.0185	5.0000e-005	2.4000e-004	6.8000e-004	9.2000e-004	6.0000e-005	6.3000e-004	6.9000e-004	0.0000	4.7427	4.7427	1.4800e-003	1.0000e-005	4.7817
2025	0.1584	0.7850	1.0170	2.9000e-003	0.0587	0.0289	0.0876	0.0156	0.0267	0.0424	0.0000	256.1970	256.1970	0.0614	1.6000e-003	258.2078
2026	0.0376	0.0240	0.0605	1.5000e-004	0.0135	1.2300e-003	0.0147	3.5800e-003	1.1300e-003	4.7100e-003	0.0000	13.1662	13.1662	1.3900e-003	2.5000e-004	13.2742
Maximum	**0.1584**	**0.7850**	**1.0170**	**2.9000e-003**	**0.0587**	**0.0289**	**0.0876**	**0.0156**	**0.0267**	**0.0424**	**0.0000**	**256.1970**	**256.1970**	**0.0614**	**1.6000e-003**	**258.2078**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					

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2024	8.5000e-004	5.6400e-003	0.0257	5.0000e-005	2.4000e-004	1.2000e-004	3.6000e-004	6.0000e-005	1.1000e-004	1.8000e-004	0.0000	4.7427	4.7427	1.4800e-003	1.0000e-005	4.7817
2025	0.1087	0.2440	1.2631	2.9000e-003	0.0587	6.3100e-003	0.0650	0.0156	6.1700e-003	0.0218	0.0000	256.1968	256.1968	0.0614	1.6000e-003	258.2075
2026	0.0358	4.4500e-003	0.0612	1.5000e-004	0.0135	1.3000e-004	0.0136	3.5800e-003	1.2000e-004	3.7100e-003	0.0000	13.1662	13.1662	1.3900e-003	2.5000e-004	13.2742
Maximum	**0.1087**	**0.2440**	**1.2631**	**2.9000e-003**	**0.0587**	**6.3100e-003**	**0.0650**	**0.0156**	**6.1700e-003**	**0.0218**	**0.0000**	**256.1968**	**256.1968**	**0.0614**	**1.6000e-003**	**258.2075**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**26.61**	**69.29**	**-23.18**	**0.00**	**0.00**	**78.73**	**23.52**	**0.00**	**77.54**	**46.20**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**12-30-2024**	**3-29-2025**	0.3968	0.1509
2	**3-30-2025**	**6-29-2025**	0.1132	0.0398
3	**6-30-2025**	**9-29-2025**	0.2085	0.0694
4	**9-30-2025**	**12-29-2025**	0.2111	0.0871
5	**12-30-2025**	**3-29-2026**	0.0632	0.0414
		Highest	0.3968	0.1509

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/30/2024	1/24/2025	5	20	
2	Utilities, Grading and Paving	Site Preparation	1/27/2025	3/7/2025	5	30	
3	Foundation	Grading	3/10/2025	5/2/2025	5	40	
4	Structure and Exterior Finishes	Building Construction	7/14/2025	11/28/2025	5	100	
5	Interior Finishes	Architectural Coating	8/25/2025	3/20/2026	5	150	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 23,700; Non-Residential Outdoor: 7,900; Striped Parking Area: 0 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	1	8.00	273	0.38
Demolition	Off-Highway Trucks	1	8.00	430	0.38
Demolition	Rollers	1	8.00	249	0.38
Demolition	Scrapers	1	8.00	304	0.48
Demolition	Skid Steer Loaders	2	8.00	74	0.37
Demolition	Tractors/Loaders/Backhoes	1	8.00	104	0.37
Utilities, Grading and Paving	Cement and Mortar Mixers	2	8.00	350	0.56
Utilities, Grading and Paving	Off-Highway Trucks	2	8.00	350	0.38
Utilities, Grading and Paving	Paving Equipment	1	8.00	225	0.36
Utilities, Grading and Paving	Rollers	1	8.00	130	0.38
Utilities, Grading and Paving	Skid Steer Loaders	1	8.00	74	0.37

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Utilities, Grading and Paving	Tractors/Loaders/Backhoes	1	8.00	104	0.37
Foundation	Cement and Mortar Mixers	2	8.00	350	0.56
Foundation	Excavators	1	8.00	24	0.38
Foundation	Off-Highway Trucks	1	8.00	350	0.38
Foundation	Pumps	1	8.00	197	0.74
Foundation	Skid Steer Loaders	1	8.00	74	0.37
Foundation	Tractors/Loaders/Backhoes	1	8.00	104	0.37
Structure and Exterior Finishes	Aerial Lifts	1	8.00	130	0.31
Structure and Exterior Finishes	Aerial Lifts	1	8.00	49	0.31
Structure and Exterior Finishes	Cranes	1	8.00	367	0.29
Structure and Exterior Finishes	Forklifts	1	8.00	83	0.20
Interior Finishes	Forklifts	1	8.00	83	0.20
Interior Finishes	Skid Steer Loaders	1	8.00	130	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	7	30.00	0.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Utilities, Grading and Paving	8	30.00	0.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Foundation	7	40.00	0.00	4.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Structure and Exterior Finishes	4	60.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Interior Finishes	2	60.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2024

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.9800e-003	0.0182	0.0179	5.0000e-005		6.8000e-004	6.8000e-004		6.3000e-004	6.3000e-004	0.0000	4.5507	4.5507	1.4700e-003	0.0000	4.5875
Total	**1.9800e-003**	**0.0182**	**0.0179**	**5.0000e-005**		**6.8000e-004**	**6.8000e-004**		**6.3000e-004**	**6.3000e-004**	**0.0000**	**4.5507**	**4.5507**	**1.4700e-003**	**0.0000**	**4.5875**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	3.0000e-005	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0123	0.0123	0.0000	0.0000	0.0130
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	5.0000e-005	6.0000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1797	0.1797	0.0000	0.0000	0.1813
Total	**8.0000e-005**	**8.0000e-005**	**6.1000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1920**	**0.1920**	**0.0000**	**0.0000**	**0.1942**

Mitigated Construction On-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.7000e-004	5.5600e-003	0.0251	5.0000e-005		1.2000e-004	1.2000e-004		1.1000e-004	1.1000e-004	0.0000	4.5507	4.5507	1.4700e-003	0.0000	4.5875
Total	**7.7000e-004**	**5.5600e-003**	**0.0251**	**5.0000e-005**		**1.2000e-004**	**1.2000e-004**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**4.5507**	**4.5507**	**1.4700e-003**	**0.0000**	**4.5875**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	3.0000e-005	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0123	0.0123	0.0000	0.0000	0.0130
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	5.0000e-005	6.0000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1797	0.1797	0.0000	0.0000	0.1813
Total	**8.0000e-005**	**8.0000e-005**	**6.1000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1920**	**0.1920**	**0.0000**	**0.0000**	**0.1942**

3.2 Demolition - 2025

Unmitigated Construction On-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0166	0.1429	0.1561	4.7000e-004		5.2800e-003	5.2800e-003		4.8600e-003	4.8600e-003	0.0000	40.9556	40.9556	0.0133	0.0000	41.2868
Total	**0.0166**	**0.1429**	**0.1561**	**4.7000e-004**		**5.2800e-003**	**5.2800e-003**		**4.8600e-003**	**4.8600e-003**	**0.0000**	**40.9556**	**40.9556**	**0.0133**	**0.0000**	**41.2868**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	2.6000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1088	0.1088	1.0000e-005	2.0000e-005	0.1141
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	4.0000e-004	5.0800e-003	2.0000e-005	2.1300e-003	1.0000e-005	2.1400e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.5632	1.5632	4.0000e-005	4.0000e-005	1.5765
Total	**6.7000e-004**	**6.6000e-004**	**5.1600e-003**	**2.0000e-005**	**2.1600e-003**	**1.0000e-005**	**2.1700e-003**	**5.8000e-004**	**1.0000e-005**	**5.9000e-004**	**0.0000**	**1.6719**	**1.6719**	**5.0000e-005**	**6.0000e-005**	**1.6906**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Off-Road	6.8900e-003	0.0490	0.2260	4.7000e-004		1.0000e-003	1.0000e-003		9.8000e-004	9.8000e-004	0.0000	40.9556	40.9556	0.0133	0.0000	41.2867
Total	**6.8900e-003**	**0.0490**	**0.2260**	**4.7000e-004**		**1.0000e-003**	**1.0000e-003**		**9.8000e-004**	**9.8000e-004**	**0.0000**	**40.9556**	**40.9556**	**0.0133**	**0.0000**	**41.2867**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	2.6000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1088	0.1088	1.0000e-005	2.0000e-005	0.1141
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	4.0000e-004	5.0800e-003	2.0000e-005	2.1300e-003	1.0000e-005	2.1400e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.5632	1.5632	4.0000e-005	4.0000e-005	1.5765
Total	**6.7000e-004**	**6.6000e-004**	**5.1600e-003**	**2.0000e-005**	**2.1600e-003**	**1.0000e-005**	**2.1700e-003**	**5.8000e-004**	**1.0000e-005**	**5.9000e-004**	**0.0000**	**1.6719**	**1.6719**	**5.0000e-005**	**6.0000e-005**	**1.6906**

3.3 Utilities, Grading and Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Marin NCLH - New Administriation Building - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0201	0.1480	0.2046	6.0000e-004		5.5300e-003	5.5300e-003		5.0900e-003	5.0900e-003	0.0000	52.6106	52.6106	0.0170	0.0000	53.0360
Total	**0.0201**	**0.1480**	**0.2046**	**6.0000e-004**	**0.0000**	**5.5300e-003**	**5.5300e-003**	**0.0000**	**5.0900e-003**	**5.0900e-003**	**0.0000**	**52.6106**	**52.6106**	**0.0170**	**0.0000**	**53.0360**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	2.9000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1208	0.1208	1.0000e-005	2.0000e-005	0.1268
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	6.6000e-004	8.4700e-003	3.0000e-005	3.5400e-003	2.0000e-005	3.5600e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	2.6053	2.6053	7.0000e-005	7.0000e-005	2.6274
Total	**1.1100e-003**	**9.5000e-004**	**8.5500e-003**	**3.0000e-005**	**3.5700e-003**	**2.0000e-005**	**3.6000e-003**	**9.5000e-004**	**2.0000e-005**	**9.7000e-004**	**0.0000**	**2.7261**	**2.7261**	**8.0000e-005**	**9.0000e-005**	**2.7542**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Marin NCLH - New Administriation Building - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.4500e-003	0.0598	0.2998	6.0000e-004		1.4700e-003	1.4700e-003		1.4200e-003	1.4200e-003	0.0000	52.6106	52.6106	0.0170	0.0000	53.0360
Total	**9.4500e-003**	**0.0598**	**0.2998**	**6.0000e-004**	**0.0000**	**1.4700e-003**	**1.4700e-003**	**0.0000**	**1.4200e-003**	**1.4200e-003**	**0.0000**	**52.6106**	**52.6106**	**0.0170**	**0.0000**	**53.0360**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	2.9000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1208	0.1208	1.0000e-005	2.0000e-005	0.1268
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	6.6000e-004	8.4700e-003	3.0000e-005	3.5400e-003	2.0000e-005	3.5600e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	2.6053	2.6053	7.0000e-005	7.0000e-005	2.6274
Total	**1.1100e-003**	**9.5000e-004**	**8.5500e-003**	**3.0000e-005**	**3.5700e-003**	**2.0000e-005**	**3.6000e-003**	**9.5000e-004**	**2.0000e-005**	**9.7000e-004**	**0.0000**	**2.7261**	**2.7261**	**8.0000e-005**	**9.0000e-005**	**2.7542**

3.4 Foundation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Marin NCLH - New Administriation Building - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0220	0.1611	0.2005	6.7000e-004		5.3300e-003	5.3300e-003		5.0200e-003	5.0200e-003	0.0000	58.2770	58.2770	0.0109	0.0000	58.5501
Total	**0.0220**	**0.1611**	**0.2005**	**6.7000e-004**	**0.0000**	**5.3300e-003**	**5.3300e-003**	**0.0000**	**5.0200e-003**	**5.0200e-003**	**0.0000**	**58.2770**	**58.2770**	**0.0109**	**0.0000**	**58.5501**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	2.9000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1208	0.1208	1.0000e-005	2.0000e-005	0.1268
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9700e-003	1.1700e-003	0.0151	5.0000e-005	6.3000e-003	3.0000e-005	6.3300e-003	1.6800e-003	3.0000e-005	1.7000e-003	0.0000	4.6317	4.6317	1.2000e-004	1.2000e-004	4.6710
Total	**1.9700e-003**	**1.4600e-003**	**0.0151**	**5.0000e-005**	**6.3300e-003**	**3.0000e-005**	**6.3700e-003**	**1.6900e-003**	**3.0000e-005**	**1.7100e-003**	**0.0000**	**4.7525**	**4.7525**	**1.3000e-004**	**1.4000e-004**	**4.7978**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Marin NCLH - New Administriation Building - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0141	0.0481	0.2310	6.7000e-004		2.4300e-003	2.4300e-003		2.3900e-003	2.3900e-003	0.0000	58.2769	58.2769	0.0109	0.0000	58.5501
Total	**0.0141**	**0.0481**	**0.2310**	**6.7000e-004**	**0.0000**	**2.4300e-003**	**2.4300e-003**	**0.0000**	**2.3900e-003**	**2.3900e-003**	**0.0000**	**58.2769**	**58.2769**	**0.0109**	**0.0000**	**58.5501**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	2.9000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1208	0.1208	1.0000e-005	2.0000e-005	0.1268
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9700e-003	1.1700e-003	0.0151	5.0000e-005	6.3000e-003	3.0000e-005	6.3300e-003	1.6800e-003	3.0000e-005	1.7000e-003	0.0000	4.6317	4.6317	1.2000e-004	1.2000e-004	4.6710
Total	**1.9700e-003**	**1.4600e-003**	**0.0151**	**5.0000e-005**	**6.3300e-003**	**3.0000e-005**	**6.3700e-003**	**1.6900e-003**	**3.0000e-005**	**1.7100e-003**	**0.0000**	**4.7525**	**4.7525**	**1.3000e-004**	**1.4000e-004**	**4.7978**

3.5 Structure and Exterior Finishes - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	0.0266	0.2789	0.2663	6.0000e-004		0.0106	0.0106		9.7300e-003	9.7300e-003	0.0000	52.8278	52.8278	0.0171	0.0000	53.2549
Total	**0.0266**	**0.2789**	**0.2663**	**6.0000e-004**		**0.0106**	**0.0106**		**9.7300e-003**	**9.7300e-003**	**0.0000**	**52.8278**	**52.8278**	**0.0171**	**0.0000**	**53.2549**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9000e-004	6.9700e-003	2.5000e-003	3.0000e-005	9.8000e-004	4.0000e-005	1.0200e-003	2.8000e-004	4.0000e-005	3.2000e-004	0.0000	3.0304	3.0304	1.2000e-004	4.3000e-004	3.1604
Worker	7.3900e-003	4.4000e-003	0.0565	1.9000e-004	0.0236	1.1000e-004	0.0238	6.2900e-003	1.0000e-004	6.3900e-003	0.0000	17.3687	17.3687	4.5000e-004	4.6000e-004	17.5162
Total	**7.5800e-003**	**0.0114**	**0.0590**	**2.2000e-004**	**0.0246**	**1.5000e-004**	**0.0248**	**6.5700e-003**	**1.4000e-004**	**6.7100e-003**	**0.0000**	**20.3990**	**20.3990**	**5.7000e-004**	**8.9000e-004**	**20.6766**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.1200e-003	0.0651	0.3156	6.0000e-004		9.8000e-004	9.8000e-004		9.8000e-004	9.8000e-004	0.0000	52.8277	52.8277	0.0171	0.0000	53.2548

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**8.1200e-003**	**0.0651**	**0.3156**	**6.0000e-004**		**9.8000e-004**	**9.8000e-004**		**9.8000e-004**	**9.8000e-004**	**0.0000**	**52.8277**	**52.8277**	**0.0171**	**0.0000**	**53.2548**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9000e-004	6.9700e-003	2.5000e-003	3.0000e-005	9.8000e-004	4.0000e-005	1.0200e-003	2.8000e-004	4.0000e-005	3.2000e-004	0.0000	3.0304	3.0304	1.2000e-004	4.3000e-004	3.1604
Worker	7.3900e-003	4.4000e-003	0.0565	1.9000e-004	0.0236	1.1000e-004	0.0238	6.2900e-003	1.0000e-004	6.3900e-003	0.0000	17.3687	17.3687	4.5000e-004	4.6000e-004	17.5162
Total	**7.5800e-003**	**0.0114**	**0.0590**	**2.2000e-004**	**0.0246**	**1.5000e-004**	**0.0248**	**6.5700e-003**	**1.4000e-004**	**6.7100e-003**	**0.0000**	**20.3990**	**20.3990**	**5.7000e-004**	**8.9000e-004**	**20.6766**

3.6 Interior Finishes - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0511					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7700e-003	0.0355	0.0492	7.0000e-005		1.9000e-003	1.9000e-003		1.7500e-003	1.7500e-003	0.0000	5.8236	5.8236	1.8800e-003	0.0000	5.8707

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**0.0549**	**0.0355**	**0.0492**	**7.0000e-005**		**1.9000e-003**	**1.9000e-003**		**1.7500e-003**	**1.7500e-003**	**0.0000**	**5.8236**	**5.8236**	**1.8800e-003**	**0.0000**	**5.8707**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8700e-003	4.0900e-003	0.0525	1.8000e-004	0.0220	1.1000e-004	0.0221	5.8500e-003	1.0000e-004	5.9500e-003	0.0000	16.1529	16.1529	4.2000e-004	4.3000e-004	16.2901
Total	**6.8700e-003**	**4.0900e-003**	**0.0525**	**1.8000e-004**	**0.0220**	**1.1000e-004**	**0.0221**	**5.8500e-003**	**1.0000e-004**	**5.9500e-003**	**0.0000**	**16.1529**	**16.1529**	**4.2000e-004**	**4.3000e-004**	**16.2901**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0511					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.2000e-004	3.5400e-003	0.0504	7.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	5.8236	5.8236	1.8800e-003	0.0000	5.8706

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**0.0519**	**3.5400e-003**	**0.0504**	**7.0000e-005**		**1.1000e-004**	**1.1000e-004**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**5.8236**	**5.8236**	**1.8800e-003**	**0.0000**	**5.8706**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8700e-003	4.0900e-003	0.0525	1.8000e-004	0.0220	1.1000e-004	0.0221	5.8500e-003	1.0000e-004	5.9500e-003	0.0000	16.1529	16.1529	4.2000e-004	4.3000e-004	16.2901
Total	**6.8700e-003**	**4.0900e-003**	**0.0525**	**1.8000e-004**	**0.0220**	**1.1000e-004**	**0.0221**	**5.8500e-003**	**1.0000e-004**	**5.9500e-003**	**0.0000**	**16.1529**	**16.1529**	**4.2000e-004**	**4.3000e-004**	**16.2901**

3.6 Interior Finishes - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0313					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3100e-003	0.0218	0.0301	4.0000e-005		1.1600e-003	1.1600e-003		1.0700e-003	1.0700e-003	0.0000	3.5693	3.5693	1.1500e-003	0.0000	3.5981

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**0.0336**	**0.0218**	**0.0301**	**4.0000e-005**		**1.1600e-003**	**1.1600e-003**		**1.0700e-003**	**1.0700e-003**	**0.0000**	**3.5693**	**3.5693**	**1.1500e-003**	**0.0000**	**3.5981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9900e-003	2.2800e-003	0.0304	1.0000e-004	0.0135	6.0000e-005	0.0135	3.5800e-003	6.0000e-005	3.6400e-003	0.0000	9.5969	9.5969	2.4000e-004	2.5000e-004	9.6761
Total	**3.9900e-003**	**2.2800e-003**	**0.0304**	**1.0000e-004**	**0.0135**	**6.0000e-005**	**0.0135**	**3.5800e-003**	**6.0000e-005**	**3.6400e-003**	**0.0000**	**9.5969**	**9.5969**	**2.4000e-004**	**2.5000e-004**	**9.6761**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0313					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0000e-004	2.1700e-003	0.0309	4.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.5693	3.5693	1.1500e-003	0.0000	3.5981

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**0.0318**	**2.1700e-003**	**0.0309**	**4.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**3.5693**	**3.5693**	**1.1500e-003**	**0.0000**	**3.5981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9900e-003	2.2800e-003	0.0304	1.0000e-004	0.0135	6.0000e-005	0.0135	3.5800e-003	6.0000e-005	3.6400e-003	0.0000	9.5969	9.5969	2.4000e-004	2.5000e-004	9.6761
Total	**3.9900e-003**	**2.2800e-003**	**0.0304**	**1.0000e-004**	**0.0135**	**6.0000e-005**	**0.0135**	**3.5800e-003**	**6.0000e-005**	**3.6400e-003**	**0.0000**	**9.5969**	**9.5969**	**2.4000e-004**	**2.5000e-004**	**9.6761**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.544281	0.061644	0.199793	0.122945	0.023341	0.005632	0.006920	0.003727	0.000656	0.000390	0.027229	0.000725	0.002

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	kWh/yr	MT/yr			
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

Marin NCLH - New Administriation Building - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	tons	MT/yr			
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Marin NCLH - Residential Care Facility (Residential)

Marin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	170.00	Dwelling Unit	4.47	267,354.00	486

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2026
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on PD

Construction Phase - Based on data request

Off-road Equipment - based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Trips and VMT - Based on data request response. Hauling trips are estimated using the number of dump trucks in each phase.

Architectural Coating -

Vehicle Trips - Construction run only

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Woodstoves - Construction run only

Consumer Products - Construction run only

Area Coating - Construction run only

Landscape Equipment - Construction run only

Energy Use - Construction run only

Water And Wastewater - Construction run only

Solid Waste - Construction run only

Construction Off-road Equipment Mitigation - 90% tier 4 construction equipments and watering exposed area twice a day mitigation applied.

Area Mitigation -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Residential_Exterior	13565	0
tblAreaCoating	Area_Residential_Interior	40696	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	300.00
tblConstructionPhase	NumDays	100.00	260.00
tblConstructionPhase	NumDays	10.00	40.00
tblConstructionPhase	NumDays	2.00	100.00
tblConstructionPhase	NumDays	1.00	68.00
tblConstructionPhase	PhaseEndDate	1/3/2024	11/21/2025
tblConstructionPhase	PhaseEndDate	12/27/2023	1/17/2025
tblConstructionPhase	PhaseEndDate	8/4/2023	9/15/2023
tblConstructionPhase	PhaseEndDate	8/9/2023	3/29/2024
tblConstructionPhase	PhaseEndDate	8/7/2023	11/10/2023
tblConstructionPhase	PhaseStartDate	12/28/2023	9/30/2024
tblConstructionPhase	PhaseStartDate	8/10/2023	1/22/2024
tblConstructionPhase	PhaseStartDate	8/8/2023	11/13/2023
tblConstructionPhase	PhaseStartDate	8/5/2023	8/9/2023
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	741.44	0.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	NT24NG	2,615.00	0.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblEnergyUse	T24E	90.83	0.00
tblEnergyUse	T24NG	5,828.01	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	2.10	0.00
tblFireplaces	NumberNoFireplace	0.56	0.00
tblFireplaces	NumberWood	2.38	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	LandUseSquareFeet	170,000.00	267,354.00
tblOffRoadEquipment	HorsePower	231.00	367.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	63.00	130.00
tblOffRoadEquipment	HorsePower	63.00	49.00
tblOffRoadEquipment	HorsePower	9.00	350.00
tblOffRoadEquipment	HorsePower	9.00	350.00
tblOffRoadEquipment	HorsePower	158.00	273.00
tblOffRoadEquipment	HorsePower	158.00	24.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	402.00	430.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	402.00	197.00
tblOffRoadEquipment	HorsePower	132.00	225.00
tblOffRoadEquipment	HorsePower	80.00	249.00

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tblOffRoadEquipment	HorsePower	80.00	130.00
tblOffRoadEquipment	HorsePower	367.00	304.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	65.00	130.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Foundation
tblOffRoadEquipment	PhaseName		Foundation
tblOffRoadEquipment	PhaseName		Architectural Coating
tblOffRoadEquipment	PhaseName		Foundation
tblOffRoadEquipment	PhaseName		Foundation
tblOffRoadEquipment	PhaseName		Foundation
tblOffRoadEquipment	PhaseName		Architectural Coating

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	6.44	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	6.00
tblTripsAndVMT	HaulingTripNumber	0.00	6.00
tblTripsAndVMT	HaulingTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	25.00	30.00
tblTripsAndVMT	WorkerTripNumber	28.00	30.00
tblTripsAndVMT	WorkerTripNumber	35.00	50.00
tblTripsAndVMT	WorkerTripNumber	10.00	80.00
tblTripsAndVMT	WorkerTripNumber	2.00	120.00
tblVehicleTrips	ST_TR	4.91	0.00
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	WD_TR	5.44	0.00
tblWater	IndoorWaterUseRate	912,156.36	0.00
tblWater	OutdoorWaterUseRate	575,055.10	0.00
tblWoodstoves	NumberCatalytic	0.28	0.00
tblWoodstoves	NumberNoncatalytic	0.28	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.1 Overall Construction

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.1977	1.6398	1.7133	5.0500e-003	0.0198	0.0629	0.0827	5.2600e-003	0.0579	0.0632	0.0000	443.8683	443.8683	0.1389	5.1000e-004	447.4919
2024	0.2147	1.3482	1.6644	4.3300e-003	0.1231	0.0515	0.1747	0.0328	0.0474	0.0802	0.0000	384.7348	384.7348	0.0962	2.9000e-003	388.0050
2025	0.1585	0.1468	0.4309	1.1600e-003	0.1143	6.6800e-003	0.1210	0.0304	6.1500e-003	0.0366	0.0000	105.5377	105.5377	9.1400e-003	2.2300e-003	106.4300
Maximum	**0.2147**	**1.6398**	**1.7133**	**5.0500e-003**	**0.1231**	**0.0629**	**0.1747**	**0.0328**	**0.0579**	**0.0802**	**0.0000**	**443.8683**	**443.8683**	**0.1389**	**2.9000e-003**	**447.4919**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0845	0.5225	2.3752	5.0500e-003	0.0198	0.0132	0.0329	5.2600e-003	0.0127	0.0179	0.0000	443.8677	443.8677	0.1389	5.1000e-004	447.4914
2024	0.1228	0.4125	1.9513	4.3300e-003	0.1231	8.2700e-003	0.1314	0.0328	7.9900e-003	0.0408	0.0000	384.7344	384.7344	0.0962	2.9000e-003	388.0046
2025	0.1487	0.0389	0.4404	1.1600e-003	0.1143	9.5000e-004	0.1152	0.0304	9.0000e-004	0.0313	0.0000	105.5377	105.5377	9.1400e-003	2.2300e-003	106.4300
Maximum	**0.1487**	**0.5225**	**2.3752**	**5.0500e-003**	**0.1231**	**0.0132**	**0.1314**	**0.0328**	**0.0127**	**0.0408**	**0.0000**	**443.8677**	**443.8677**	**0.1389**	**2.9000e-003**	**447.4914**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	37.65	68.93	-25.16	0.00	0.00	81.53	26.10	0.00	80.67	49.97	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	7-24-2023	10-23-2023	1.3147	0.4051
2	10-24-2023	1-23-2024	0.6476	0.2577
3	1-24-2024	4-23-2024	0.6764	0.2461
4	4-24-2024	7-23-2024	0.2279	0.0599
5	7-24-2024	10-23-2024	0.2514	0.0745
6	10-24-2024	1-23-2025	0.2916	0.1096
7	1-24-2025	4-23-2025	0.0736	0.0494
8	4-24-2025	7-23-2025	0.0731	0.0487
9	7-24-2025	9-30-2025	0.0555	0.0370
		Highest	1.3147	0.4051

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/24/2023	9/15/2023	5	40	
2	Site Preparation, Grading and Paving	Site Preparation	8/9/2023	11/10/2023	5	68	
3	Foundation	Grading	11/13/2023	3/29/2024	5	100	
4	Building Construction	Building Construction	1/22/2024	1/17/2025	5	260	
5	Architectural Coating	Architectural Coating	9/30/2024	11/21/2025	5	300	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 40,696; Residential Outdoor: 13,565; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	2	8.00	273	0.38
Demolition	Off-Highway Trucks	3	8.00	430	0.38
Demolition	Rollers	1	8.00	249	0.38
Demolition	Scrapers	2	8.00	304	0.48
Demolition	Skid Steer Loaders	1	8.00	74	0.37
Demolition	Tractors/Loaders/Backhoes	1	8.00	104	0.37
Site Preparation, Grading and Paving	Cement and Mortar Mixers	2	8.00	350	0.56
Site Preparation, Grading and Paving	Off-Highway Trucks	3	8.00	350	0.38
Site Preparation, Grading and Paving	Paving Equipment	1	8.00	225	0.36
Site Preparation, Grading and Paving	Rollers	1	8.00	130	0.38
Site Preparation, Grading and Paving	Skid Steer Loaders	2	8.00	74	0.37
Site Preparation, Grading and Paving	Tractors/Loaders/Backhoes	2	8.00	104	0.37
Foundation	Cement and Mortar Mixers	4	8.00	350	0.56
Foundation	Excavators	2	8.00	24	0.38

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Foundation	Off-Highway Trucks	3	8.00	350	0.38
Foundation	Off-Highway Trucks	1	8.00	197	0.38
Foundation	Skid Steer Loaders	2	8.00	74	0.37
Foundation	Tractors/Loaders/Backhoes	2	8.00	104	0.37
Building Construction	Aerial Lifts	1	8.00	130	0.31
Building Construction	Aerial Lifts	1	8.00	49	0.31
Building Construction	Cranes	1	8.00	367	0.29
Building Construction	Forklifts	1	8.00	83	0.20
Architectural Coating	Forklifts	1	8.00	83	0.20
Architectural Coating	Skid Steer Loaders	1	8.00	130	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	10	30.00	0.00	6.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation, Grading and Paving	11	30.00	0.00	6.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Foundation	14	50.00	0.00	6.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	80.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	120.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2023

Unmitigated Construction On-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0783	0.6939	0.6119	1.9800e-003		0.0261	0.0261		0.0240	0.0240	0.0000	174.2503	174.2503	0.0564	0.0000	175.6592
Total	**0.0783**	**0.6939**	**0.6119**	**1.9800e-003**		**0.0261**	**0.0261**		**0.0240**	**0.0240**	**0.0000**	**174.2503**	**174.2503**	**0.0564**	**0.0000**	**175.6592**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.5000e-004	1.3000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1884	0.1884	1.0000e-005	3.0000e-005	0.1977
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6700e-003	1.1000e-003	0.0130	4.0000e-005	4.7300e-003	3.0000e-005	4.7500e-003	1.2600e-003	2.0000e-005	1.2800e-003	0.0000	3.7127	3.7127	1.1000e-004	1.0000e-004	3.7467
Total	**1.6800e-003**	**1.5500e-003**	**0.0131**	**4.0000e-005**	**4.7800e-003**	**3.0000e-005**	**4.8000e-003**	**1.2700e-003**	**2.0000e-005**	**1.3000e-003**	**0.0000**	**3.9011**	**3.9011**	**1.2000e-004**	**1.3000e-004**	**3.9444**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Off-Road	0.0294	0.1651	0.8927	1.9800e-003		4.7200e-003	4.7200e-003		4.5800e-003	4.5800e-003	0.0000	174.2501	174.2501	0.0564	0.0000	175.6590
Total	**0.0294**	**0.1651**	**0.8927**	**1.9800e-003**		**4.7200e-003**	**4.7200e-003**		**4.5800e-003**	**4.5800e-003**	**0.0000**	**174.2501**	**174.2501**	**0.0564**	**0.0000**	**175.6590**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.5000e-004	1.3000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1884	0.1884	1.0000e-005	3.0000e-005	0.1977
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6700e-003	1.1000e-003	0.0130	4.0000e-005	4.7300e-003	3.0000e-005	4.7500e-003	1.2600e-003	2.0000e-005	1.2800e-003	0.0000	3.7127	3.7127	1.1000e-004	1.0000e-004	3.7467
Total	**1.6800e-003**	**1.5500e-003**	**0.0131**	**4.0000e-005**	**4.7800e-003**	**3.0000e-005**	**4.8000e-003**	**1.2700e-003**	**2.0000e-005**	**1.3000e-003**	**0.0000**	**3.9011**	**3.9011**	**1.2000e-004**	**1.3000e-004**	**3.9444**

3.3 Site Preparation, Grading and Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0738	0.6313	0.7048	1.9400e-003		0.0247	0.0247		0.0227	0.0227	0.0000	170.6270	170.6270	0.0552	0.0000	172.0066
Total	**0.0738**	**0.6313**	**0.7048**	**1.9400e-003**	**0.0000**	**0.0247**	**0.0247**	**0.0000**	**0.0227**	**0.0227**	**0.0000**	**170.6270**	**170.6270**	**0.0552**	**0.0000**	**172.0066**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.5000e-004	1.3000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1884	0.1884	1.0000e-005	3.0000e-005	0.1977
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8400e-003	1.8600e-003	0.0220	7.0000e-005	8.0300e-003	4.0000e-005	8.0800e-003	2.1400e-003	4.0000e-005	2.1800e-003	0.0000	6.3116	6.3116	1.9000e-004	1.8000e-004	6.3694
Total	**2.8500e-003**	**2.3100e-003**	**0.0222**	**7.0000e-005**	**8.0800e-003**	**4.0000e-005**	**8.1300e-003**	**2.1500e-003**	**4.0000e-005**	**2.2000e-003**	**0.0000**	**6.5000**	**6.5000**	**2.0000e-004**	**2.1000e-004**	**6.5671**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0320	0.2315	0.9858	1.9400e-003		5.4200e-003	5.4200e-003		5.2100e-003	5.2100e-003	0.0000	170.6268	170.6268	0.0552	0.0000	172.0064
Total	**0.0320**	**0.2315**	**0.9858**	**1.9400e-003**	**0.0000**	**5.4200e-003**	**5.4200e-003**	**0.0000**	**5.2100e-003**	**5.2100e-003**	**0.0000**	**170.6268**	**170.6268**	**0.0552**	**0.0000**	**172.0064**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.5000e-004	1.3000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1884	0.1884	1.0000e-005	3.0000e-005	0.1977
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8400e-003	1.8600e-003	0.0220	7.0000e-005	8.0300e-003	4.0000e-005	8.0800e-003	2.1400e-003	4.0000e-005	2.1800e-003	0.0000	6.3116	6.3116	1.9000e-004	1.8000e-004	6.3694
Total	**2.8500e-003**	**2.3100e-003**	**0.0222**	**7.0000e-005**	**8.0800e-003**	**4.0000e-005**	**8.1300e-003**	**2.1500e-003**	**4.0000e-005**	**2.2000e-003**	**0.0000**	**6.5000**	**6.5000**	**2.0000e-004**	**2.1000e-004**	**6.5671**

3.4 Foundation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0386	0.3090	0.3425	9.5000e-004		0.0121	0.0121		0.0111	0.0111	0.0000	83.1096	83.1096	0.0269	0.0000	83.7815
Total	**0.0386**	**0.3090**	**0.3425**	**9.5000e-004**	**0.0000**	**0.0121**	**0.0121**	**0.0000**	**0.0111**	**0.0111**	**0.0000**	**83.1096**	**83.1096**	**0.0269**	**0.0000**	**83.7815**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.6000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0660	0.0660	0.0000	1.0000e-005	0.0692
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4400e-003	1.6000e-003	0.0189	6.0000e-005	6.8900e-003	4.0000e-005	6.9300e-003	1.8300e-003	3.0000e-005	1.8700e-003	0.0000	5.4144	5.4144	1.6000e-004	1.5000e-004	5.4640
Total	**2.4400e-003**	**1.7600e-003**	**0.0189**	**6.0000e-005**	**6.9100e-003**	**4.0000e-005**	**6.9500e-003**	**1.8300e-003**	**3.0000e-005**	**1.8800e-003**	**0.0000**	**5.4803**	**5.4803**	**1.6000e-004**	**1.6000e-004**	**5.5332**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0161	0.1202	0.4425	9.5000e-004		2.8900e-003	2.8900e-003		2.7600e-003	2.7600e-003	0.0000	83.1095	83.1095	0.0269	0.0000	83.7814
Total	**0.0161**	**0.1202**	**0.4425**	**9.5000e-004**	**0.0000**	**2.8900e-003**	**2.8900e-003**	**0.0000**	**2.7600e-003**	**2.7600e-003**	**0.0000**	**83.1095**	**83.1095**	**0.0269**	**0.0000**	**83.7814**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.6000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0660	0.0660	0.0000	1.0000e-005	0.0692
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4400e-003	1.6000e-003	0.0189	6.0000e-005	6.8900e-003	4.0000e-005	6.9300e-003	1.8300e-003	3.0000e-005	1.8700e-003	0.0000	5.4144	5.4144	1.6000e-004	1.5000e-004	5.4640
Total	**2.4400e-003**	**1.7600e-003**	**0.0189**	**6.0000e-005**	**6.9100e-003**	**4.0000e-005**	**6.9500e-003**	**1.8300e-003**	**3.0000e-005**	**1.8800e-003**	**0.0000**	**5.4803**	**5.4803**	**1.6000e-004**	**1.6000e-004**	**5.5332**

3.4 Foundation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0699	0.5394	0.6322	1.7600e-003		0.0204	0.0204		0.0187	0.0187	0.0000	154.3916	154.3916	0.0499	0.0000	155.6399
Total	**0.0699**	**0.5394**	**0.6322**	**1.7600e-003**	**0.0000**	**0.0204**	**0.0204**	**0.0000**	**0.0187**	**0.0187**	**0.0000**	**154.3916**	**154.3916**	**0.0499**	**0.0000**	**155.6399**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	2.9000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1203	0.1203	1.0000e-005	2.0000e-005	0.1262
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2500e-003	2.6500e-003	0.0327	1.1000e-004	0.0128	6.0000e-005	0.0129	3.4100e-003	6.0000e-005	3.4700e-003	0.0000	9.7323	9.7323	2.7000e-004	2.6000e-004	9.8179
Total	**4.2500e-003**	**2.9400e-003**	**0.0328**	**1.1000e-004**	**0.0128**	**6.0000e-005**	**0.0129**	**3.4200e-003**	**6.0000e-005**	**3.4800e-003**	**0.0000**	**9.8526**	**9.8526**	**2.8000e-004**	**2.8000e-004**	**9.9441**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0298	0.2179	0.8211	1.7600e-003		5.1300e-003	5.1300e-003		4.9100e-003	4.9100e-003	0.0000	154.3914	154.3914	0.0499	0.0000	155.6397
Total	**0.0298**	**0.2179**	**0.8211**	**1.7600e-003**	**0.0000**	**5.1300e-003**	**5.1300e-003**	**0.0000**	**4.9100e-003**	**4.9100e-003**	**0.0000**	**154.3914**	**154.3914**	**0.0499**	**0.0000**	**155.6397**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	2.9000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1203	0.1203	1.0000e-005	2.0000e-005	0.1262
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2500e-003	2.6500e-003	0.0327	1.1000e-004	0.0128	6.0000e-005	0.0129	3.4100e-003	6.0000e-005	3.4700e-003	0.0000	9.7323	9.7323	2.7000e-004	2.6000e-004	9.8179
Total	**4.2500e-003**	**2.9400e-003**	**0.0328**	**1.1000e-004**	**0.0128**	**6.0000e-005**	**0.0129**	**3.4200e-003**	**6.0000e-005**	**3.4800e-003**	**0.0000**	**9.8526**	**9.8526**	**2.8000e-004**	**2.8000e-004**	**9.9441**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	0.0695	0.7497	0.6822	1.4900e-003		0.0289	0.0289		0.0266	0.0266	0.0000	130.5055	130.5055	0.0422	0.0000	131.5607
Total	**0.0695**	**0.7497**	**0.6822**	**1.4900e-003**		**0.0289**	**0.0289**		**0.0266**	**0.0266**	**0.0000**	**130.5055**	**130.5055**	**0.0422**	**0.0000**	**131.5607**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6000e-004	5.8100e-003	2.1300e-003	3.0000e-005	8.1000e-004	3.0000e-005	8.4000e-004	2.3000e-004	3.0000e-005	2.6000e-004	0.0000	2.5412	2.5412	1.0000e-004	3.6000e-004	2.6504
Worker	0.0258	0.0161	0.1987	6.5000e-004	0.0778	3.9000e-004	0.0782	0.0207	3.6000e-004	0.0211	0.0000	59.1723	59.1723	1.6400e-003	1.6100e-003	59.6926
Total	**0.0260**	**0.0219**	**0.2008**	**6.8000e-004**	**0.0786**	**4.2000e-004**	**0.0791**	**0.0209**	**3.9000e-004**	**0.0213**	**0.0000**	**61.7135**	**61.7135**	**1.7400e-003**	**1.9700e-003**	**62.3430**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0201	0.1607	0.7795	1.4900e-003		2.4100e-003	2.4100e-003		2.4100e-003	2.4100e-003	0.0000	130.5053	130.5053	0.0422	0.0000	131.5605

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**0.0201**	**0.1607**	**0.7795**	**1.4900e-003**		**2.4100e-003**	**2.4100e-003**		**2.4100e-003**	**2.4100e-003**	**0.0000**	**130.5053**	**130.5053**	**0.0422**	**0.0000**	**131.5605**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6000e-004	5.8100e-003	2.1300e-003	3.0000e-005	8.1000e-004	3.0000e-005	8.4000e-004	2.3000e-004	3.0000e-005	2.6000e-004	0.0000	2.5412	2.5412	1.0000e-004	3.6000e-004	2.6504
Worker	0.0258	0.0161	0.1987	6.5000e-004	0.0778	3.9000e-004	0.0782	0.0207	3.6000e-004	0.0211	0.0000	59.1723	59.1723	1.6400e-003	1.6100e-003	59.6926
Total	**0.0260**	**0.0219**	**0.2008**	**6.8000e-004**	**0.0786**	**4.2000e-004**	**0.0791**	**0.0209**	**3.9000e-004**	**0.0213**	**0.0000**	**61.7135**	**61.7135**	**1.7400e-003**	**1.9700e-003**	**62.3430**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4600e-003	0.0363	0.0346	8.0000e-005		1.3700e-003	1.3700e-003		1.2600e-003	1.2600e-003	0.0000	6.8676	6.8676	2.2200e-003	0.0000	6.9231
Total	**3.4600e-003**	**0.0363**	**0.0346**	**8.0000e-005**		**1.3700e-003**	**1.3700e-003**		**1.2600e-003**	**1.2600e-003**	**0.0000**	**6.8676**	**6.8676**	**2.2200e-003**	**0.0000**	**6.9231**

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	3.0000e-004	1.1000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1313	0.1313	1.0000e-005	2.0000e-005	0.1370
Worker	1.2800e-003	7.6000e-004	9.7900e-003	3.0000e-005	4.1000e-003	2.0000e-005	4.1200e-003	1.0900e-003	2.0000e-005	1.1100e-003	0.0000	3.0106	3.0106	8.0000e-005	8.0000e-005	3.0362
Total	**1.2900e-003**	**1.0600e-003**	**9.9000e-003**	**3.0000e-005**	**4.1400e-003**	**2.0000e-005**	**4.1600e-003**	**1.1000e-003**	**2.0000e-005**	**1.1200e-003**	**0.0000**	**3.1419**	**3.1419**	**9.0000e-005**	**1.0000e-004**	**3.1731**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.0600e-003	8.4600e-003	0.0410	8.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	6.8676	6.8676	2.2200e-003	0.0000	6.9231
Total	**1.0600e-003**	**8.4600e-003**	**0.0410**	**8.0000e-005**		**1.3000e-004**	**1.3000e-004**		**1.3000e-004**	**1.3000e-004**	**0.0000**	**6.8676**	**6.8676**	**2.2200e-003**	**0.0000**	**6.9231**

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	3.0000e-004	1.1000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1313	0.1313	1.0000e-005	2.0000e-005	0.1370
Worker	1.2800e-003	7.6000e-004	9.7900e-003	3.0000e-005	4.1000e-003	2.0000e-005	4.1200e-003	1.0900e-003	2.0000e-005	1.1100e-003	0.0000	3.0106	3.0106	8.0000e-005	8.0000e-005	3.0362
Total	**1.2900e-003**	**1.0600e-003**	**9.9000e-003**	**3.0000e-005**	**4.1400e-003**	**2.0000e-005**	**4.1600e-003**	**1.1000e-003**	**2.0000e-005**	**1.1200e-003**	**0.0000**	**3.1419**	**3.1419**	**9.0000e-005**	**1.0000e-004**	**3.1731**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0316					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9400e-003	0.0276	0.0356	5.0000e-005		1.5900e-003	1.5900e-003		1.4700e-003	1.4700e-003	0.0000	4.1955	4.1955	1.3600e-003	0.0000	4.2294
Total	**0.0345**	**0.0276**	**0.0356**	**5.0000e-005**		**1.5900e-003**	**1.5900e-003**		**1.4700e-003**	**1.4700e-003**	**0.0000**	**4.1955**	**4.1955**	**1.3600e-003**	**0.0000**	**4.2294**

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0105	6.5500e-003	0.0809	2.6000e-004	0.0317	1.6000e-004	0.0318	8.4300e-003	1.5000e-004	8.5700e-003	0.0000	24.0762	24.0762	6.7000e-004	6.5000e-004	24.2879
Total	**0.0105**	**6.5500e-003**	**0.0809**	**2.6000e-004**	**0.0317**	**1.6000e-004**	**0.0318**	**8.4300e-003**	**1.5000e-004**	**8.5700e-003**	**0.0000**	**24.0762**	**24.0762**	**6.7000e-004**	**6.5000e-004**	**24.2879**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0316					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9000e-004	2.5500e-003	0.0363	5.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	4.1955	4.1955	1.3600e-003	0.0000	4.2294
Total	**0.0322**	**2.5500e-003**	**0.0363**	**5.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**	**0.0000**	**4.1955**	**4.1955**	**1.3600e-003**	**0.0000**	**4.2294**

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0105	6.5500e-003	0.0809	2.6000e-004	0.0317	1.6000e-004	0.0318	8.4300e-003	1.5000e-004	8.5700e-003	0.0000	24.0762	24.0762	6.7000e-004	6.5000e-004	24.2879
Total	**0.0105**	**6.5500e-003**	**0.0809**	**2.6000e-004**	**0.0317**	**1.6000e-004**	**0.0318**	**8.4300e-003**	**1.5000e-004**	**8.5700e-003**	**0.0000**	**24.0762**	**24.0762**	**6.7000e-004**	**6.5000e-004**	**24.2879**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1099					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.4400e-003	0.0889	0.1232	1.7000e-004		4.7600e-003	4.7600e-003		4.3800e-003	4.3800e-003	0.0000	14.5902	14.5902	4.7200e-003	0.0000	14.7082
Total	**0.1193**	**0.0889**	**0.1232**	**1.7000e-004**		**4.7600e-003**	**4.7600e-003**		**4.3800e-003**	**4.3800e-003**	**0.0000**	**14.5902**	**14.5902**	**4.7200e-003**	**0.0000**	**14.7082**

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0344	0.0205	0.2632	8.8000e-004	0.1101	5.3000e-004	0.1107	0.0293	4.9000e-004	0.0298	0.0000	80.9380	80.9380	2.1200e-003	2.1300e-003	81.6256
Total	**0.0344**	**0.0205**	**0.2632**	**8.8000e-004**	**0.1101**	**5.3000e-004**	**0.1107**	**0.0293**	**4.9000e-004**	**0.0298**	**0.0000**	**80.9380**	**80.9380**	**2.1200e-003**	**2.1300e-003**	**81.6256**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1099					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	8.8700e-003	0.1262	1.7000e-004		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	14.5902	14.5902	4.7200e-003	0.0000	14.7082
Total	**0.1119**	**8.8700e-003**	**0.1262**	**1.7000e-004**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**14.5902**	**14.5902**	**4.7200e-003**	**0.0000**	**14.7082**

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0344	0.0205	0.2632	8.8000e-004	0.1101	5.3000e-004	0.1107	0.0293	4.9000e-004	0.0298	0.0000	80.9380	80.9380	2.1200e-003	2.1300e-003	81.6256
Total	**0.0344**	**0.0205**	**0.2632**	**8.8000e-004**	**0.1101**	**5.3000e-004**	**0.1107**	**0.0293**	**4.9000e-004**	**0.0298**	**0.0000**	**80.9380**	**80.9380**	**2.1200e-003**	**2.1300e-003**	**81.6256**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.543132	0.061625	0.200801	0.122893	0.023519	0.005568	0.006832	0.003721	0.000658	0.000395	0.027388	0.000726	0.002

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Date: 10/6/2022 2:33 PM

Marin NCLH - Residential Care Facility (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Marin NCLH - Seminary Point Planning Area (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Marin NCLH - Seminary Point Planning Area (Residential)

Marin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	8.00	Dwelling Unit	0.21	10,072.00	23
Single Family Housing	6.00	Dwelling Unit	1.95	10,572.00	17

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2026
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on PD

Construction Phase - Based on data request

Off-road Equipment - based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Trips and VMT - Based on data request response

Demolition -

Date: 10/6/2022 3:38 PM

Marin NCLH - Seminary Point Planning Area (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Architectural Coating -

Woodstoves - Construction run only

Area Coating - Construction run only

Energy Use - Construction run only

Water And Wastewater - Construction run only

Solid Waste - Construction run only

Construction Off-road Equipment Mitigation - 90% tier 4 construction equipments and watering exposed area twice a day mitigation applied.

Area Mitigation -

Fleet Mix -

Vehicle Trips - Construction run only

Consumer Products - Construction run only

Landscape Equipment - Construction run only

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Residential_Exterior	13935	0
tblAreaCoating	Area_Residential_Interior	41804	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Marin NCLH - Seminary Point Planning Area (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	10.00	200.00
tblConstructionPhase	NumDays	220.00	180.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	6.00	80.00
tblConstructionPhase	NumDays	3.00	40.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	741.44	0.00
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	NT24E	6,155.97	0.00
tblEnergyUse	NT24NG	2,615.00	0.00
tblEnergyUse	NT24NG	2,615.00	0.00
tblEnergyUse	T24E	90.83	0.00
tblEnergyUse	T24E	45.71	0.00
tblEnergyUse	T24NG	5,828.01	0.00
tblEnergyUse	T24NG	35,976.14	0.00

Marin NCLH - Seminary Point Planning Area (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	1.20	0.00
tblFireplaces	NumberGas	1.50	0.00
tblFireplaces	NumberNoFireplace	0.32	0.00
tblFireplaces	NumberNoFireplace	0.48	0.00
tblFireplaces	NumberWood	1.36	0.00
tblFireplaces	NumberWood	2.58	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	LandUseSquareFeet	8,000.00	10,072.00
tblLandUse	LandUseSquareFeet	10,800.00	10,572.00
tblOffRoadEquipment	HorsePower	158.00	273.00
tblOffRoadEquipment	HorsePower	402.00	430.00
tblOffRoadEquipment	HorsePower	80.00	249.00
tblOffRoadEquipment	HorsePower	367.00	304.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	9.00	104.00
tblOffRoadEquipment	HorsePower	402.00	74.00
tblOffRoadEquipment	HorsePower	132.00	225.00
tblOffRoadEquipment	HorsePower	80.00	430.00
tblOffRoadEquipment	HorsePower	65.00	24.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	9.00	350.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	HorsePower	158.00	24.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	402.00	197.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	65.00	130.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	3.68	0.00
tblSolidWaste	SolidWasteGenerationRate	7.14	0.00
tblTripsAndVMT	WorkerTripNumber	25.00	30.00
tblTripsAndVMT	WorkerTripNumber	28.00	30.00
tblTripsAndVMT	WorkerTripNumber	35.00	50.00
tblTripsAndVMT	WorkerTripNumber	8.00	80.00
tblTripsAndVMT	WorkerTripNumber	2.00	150.00
tblVehicleTrips	ST_TR	4.91	0.00
tblVehicleTrips	ST_TR	9.54	0.00
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	SU_TR	8.55	0.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	WD_TR	5.44	0.00
tblVehicleTrips	WD_TR	9.44	0.00
tblWater	IndoorWaterUseRate	521,232.20	0.00
tblWater	IndoorWaterUseRate	390,924.15	0.00
tblWater	OutdoorWaterUseRate	328,602.91	0.00
tblWater	OutdoorWaterUseRate	246,452.18	0.00
tblWoodstoves	NumberCatalytic	0.16	0.00
tblWoodstoves	NumberCatalytic	0.24	0.00
tblWoodstoves	NumberNoncatalytic	0.16	0.00
tblWoodstoves	NumberNoncatalytic	0.24	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	21.06	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	956.80	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.3074	1.9067	2.2272	6.2500e-003	0.1092	0.0731	0.1824	0.0286	0.0673	0.0959	0.0000	552.7999	552.7999	0.1547	2.5000e-003	557.4123
2025	0.1414	0.2499	0.4787	1.2500e-003	0.0959	0.0101	0.1061	0.0255	9.3300e-003	0.0349	0.0000	112.9287	112.9287	0.0154	1.9500e-003	113.8963
Maximum	**0.3074**	**1.9067**	**2.2272**	**6.2500e-003**	**0.1092**	**0.0731**	**0.1824**	**0.0286**	**0.0673**	**0.0959**	**0.0000**	**552.7999**	**552.7999**	**0.1547**	**2.5000e-003**	**557.4123**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.1705	0.6031	2.8913	6.2500e-003	0.1070	0.0134	0.1204	0.0283	0.0130	0.0413	0.0000	552.7993	552.7993	0.1547	2.5000e-003	557.4117
2025	0.1267	0.1073	0.5262	1.2500e-003	0.0959	1.2500e-003	0.0972	0.0255	1.2100e-003	0.0267	0.0000	112.9287	112.9287	0.0154	1.9500e-003	113.8963
Maximum	**0.1705**	**0.6031**	**2.8913**	**6.2500e-003**	**0.1070**	**0.0134**	**0.1204**	**0.0283**	**0.0130**	**0.0413**	**0.0000**	**552.7993**	**552.7993**	**0.1547**	**2.5000e-003**	**557.4117**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**33.79**	**67.06**	**-26.29**	**0.00**	**1.11**	**82.36**	**24.57**	**0.63**	**81.44**	**47.99**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**3-4-2024**	**6-3-2024**	0.8778	0.2121
2	**6-4-2024**	**9-3-2024**	0.6434	0.2404
3	**9-4-2024**	**12-3-2024**	0.5494	0.2574
4	**12-4-2024**	**3-3-2025**	0.2896	0.1625
5	**3-4-2025**	**6-3-2025**	0.1770	0.1099
6	**6-4-2025**	**9-3-2025**	0.0175	0.0129
		Highest	0.8778	0.2574

2.2 Overall Operational

Marin NCLH - Seminary Point Planning Area (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/4/2024	4/26/2024	5	40	
2	Site Preparation, Grading and Paving	Site Preparation	4/29/2024	6/21/2024	5	40	
3	Foundation	Grading	6/24/2024	10/11/2024	5	80	
4	Building Construction	Building Construction	8/5/2024	4/11/2025	5	180	
5	Architectural Coating	Architectural Coating	9/16/2024	6/20/2025	5	200	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 41,804; Residential Outdoor: 13,935; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	2	8.00	273	0.38
Demolition	Off-Highway Trucks	3	8.00	430	0.38

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Demolition	Rollers	1	8.00	249	0.38
Demolition	Scrapers	2	8.00	304	0.48
Demolition	Skid Steer Loaders	1	8.00	74	0.37
Demolition	Tractors/Loaders/Backhoes	1	8.00	104	0.37
Site Preparation, Grading and Paving	Cement and Mortar Mixers	2	8.00	104	0.56
Site Preparation, Grading and Paving	Off-Highway Trucks	3	8.00	74	0.38
Site Preparation, Grading and Paving	Paving Equipment	1	8.00	225	0.36
Site Preparation, Grading and Paving	Rollers	1	8.00	430	0.38
Site Preparation, Grading and Paving	Skid Steer Loaders	2	8.00	24	0.37
Site Preparation, Grading and Paving	Tractors/Loaders/Backhoes	2	8.00	104	0.37
Foundation		0	8.00		
Foundation	Cement and Mortar Mixers	4	8.00	350	0.56
Foundation	Excavators	2	8.00	24	0.38
Foundation	Off-Highway Trucks	3	8.00	350	0.38
Foundation	Off-Highway Trucks	1	8.00	197	0.38
Foundation	Skid Steer Loaders	2	8.00	74	0.37
Foundation	Tractors/Loaders/Backhoes	2	8.00	104	0.37
Building Construction	Aerial Lifts	1	8.00	63	0.31
Building Construction	Aerial Lifts	1	8.00	63	0.31
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Architectural Coating	Forklifts	1	8.00	83	0.20
Architectural Coating	Skid Steer Loaders	1	8.00	130	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	10	30.00	0.00	38.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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Site Preparation, Grading and Paving	11	30.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Foundation	14	50.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	80.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	150.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.1600e-003	0.0000	4.1600e-003	6.3000e-004	0.0000	6.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0764	0.6453	0.6034	1.9800e-003		0.0242	0.0242		0.0223	0.0223	0.0000	174.2396	174.2396	0.0564	0.0000	175.6484
Total	**0.0764**	**0.6453**	**0.6034**	**1.9800e-003**	**4.1600e-003**	**0.0242**	**0.0284**	**6.3000e-004**	**0.0223**	**0.0229**	**0.0000**	**174.2396**	**174.2396**	**0.0564**	**0.0000**	**175.6484**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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Category	tons/yr										MT/yr					
Hauling	4.0000e-005	2.8200e-003	8.0000e-004	1.0000e-005	3.2000e-004	2.0000e-005	3.4000e-004	9.0000e-005	2.0000e-005	1.1000e-004	0.0000	1.1723	1.1723	8.0000e-005	1.9000e-004	1.2300
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5700e-003	9.8000e-004	0.0121	4.0000e-005	4.7300e-003	2.0000e-005	4.7500e-003	1.2600e-003	2.0000e-005	1.2800e-003	0.0000	3.5935	3.5935	1.0000e-004	1.0000e-004	3.6251
Total	**1.6100e-003**	**3.8000e-003**	**0.0129**	**5.0000e-005**	**5.0500e-003**	**4.0000e-005**	**5.0900e-003**	**1.3500e-003**	**4.0000e-005**	**1.3900e-003**	**0.0000**	**4.7658**	**4.7658**	**1.8000e-004**	**2.9000e-004**	**4.8550**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.8700e-003	0.0000	1.8700e-003	2.8000e-004	0.0000	2.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0276	0.1505	0.9089	1.9800e-003		4.2300e-003	4.2300e-003		4.1400e-003	4.1400e-003	0.0000	174.2394	174.2394	0.0564	0.0000	175.6482
Total	**0.0276**	**0.1505**	**0.9089**	**1.9800e-003**	**1.8700e-003**	**4.2300e-003**	**6.1000e-003**	**2.8000e-004**	**4.1400e-003**	**4.4200e-003**	**0.0000**	**174.2394**	**174.2394**	**0.0564**	**0.0000**	**175.6482**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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Category	tons/yr										MT/yr					
Hauling	4.0000e-005	2.8200e-003	8.0000e-004	1.0000e-005	3.2000e-004	2.0000e-005	3.4000e-004	9.0000e-005	2.0000e-005	1.1000e-004	0.0000	1.1723	1.1723	8.0000e-005	1.9000e-004	1.2300
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5700e-003	9.8000e-004	0.0121	4.0000e-005	4.7300e-003	2.0000e-005	4.7500e-003	1.2600e-003	2.0000e-005	1.2800e-003	0.0000	3.5935	3.5935	1.0000e-004	1.0000e-004	3.6251
Total	**1.6100e-003**	**3.8000e-003**	**0.0129**	**5.0000e-005**	**5.0500e-003**	**4.0000e-005**	**5.0900e-003**	**1.3500e-003**	**4.0000e-005**	**1.3900e-003**	**0.0000**	**4.7658**	**4.7658**	**1.8000e-004**	**2.9000e-004**	**4.8550**

3.3 Site Preparation, Grading and Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0244	0.2478	0.2638	5.9000e-004		9.9700e-003	9.9700e-003		9.1700e-003	9.1700e-003	0.0000	51.9683	51.9683	0.0168	0.0000	52.3885
Total	**0.0244**	**0.2478**	**0.2638**	**5.9000e-004**	**0.0000**	**9.9700e-003**	**9.9700e-003**	**0.0000**	**9.1700e-003**	**9.1700e-003**	**0.0000**	**51.9683**	**51.9683**	**0.0168**	**0.0000**	**52.3885**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5700e-003	9.8000e-004	0.0121	4.0000e-005	4.7300e-003	2.0000e-005	4.7500e-003	1.2600e-003	2.0000e-005	1.2800e-003	0.0000	3.5935	3.5935	1.0000e-004	1.0000e-004	3.6251
Total	**1.5700e-003**	**9.8000e-004**	**0.0121**	**4.0000e-005**	**4.7300e-003**	**2.0000e-005**	**4.7500e-003**	**1.2600e-003**	**2.0000e-005**	**1.2800e-003**	**0.0000**	**3.5935**	**3.5935**	**1.0000e-004**	**1.0000e-004**	**3.6251**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0800e-003	0.0441	0.2931	5.9000e-004		1.5300e-003	1.5300e-003		1.4700e-003	1.4700e-003	0.0000	51.9683	51.9683	0.0168	0.0000	52.3885
Total	**8.0800e-003**	**0.0441**	**0.2931**	**5.9000e-004**	**0.0000**	**1.5300e-003**	**1.5300e-003**	**0.0000**	**1.4700e-003**	**1.4700e-003**	**0.0000**	**51.9683**	**51.9683**	**0.0168**	**0.0000**	**52.3885**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Marin NCLH - Seminary Point Planning Area (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5700e-003	9.8000e-004	0.0121	4.0000e-005	4.7300e-003	2.0000e-005	4.7500e-003	1.2600e-003	2.0000e-005	1.2800e-003	0.0000	3.5935	3.5935	1.0000e-004	1.0000e-004	3.6251
Total	**1.5700e-003**	**9.8000e-004**	**0.0121**	**4.0000e-005**	**4.7300e-003**	**2.0000e-005**	**4.7500e-003**	**1.2600e-003**	**2.0000e-005**	**1.2800e-003**	**0.0000**	**3.5935**	**3.5935**	**1.0000e-004**	**1.0000e-004**	**3.6251**

3.4 Foundation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0860	0.6639	0.7780	2.1600e-003		0.0250	0.0250		0.0230	0.0230	0.0000	190.0204	190.0204	0.0615	0.0000	191.5568
Total	**0.0860**	**0.6639**	**0.7780**	**2.1600e-003**	**0.0000**	**0.0250**	**0.0250**	**0.0000**	**0.0230**	**0.0230**	**0.0000**	**190.0204**	**190.0204**	**0.0615**	**0.0000**	**191.5568**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Marin NCLH - Seminary Point Planning Area (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2300e-003	3.2600e-003	0.0402	1.3000e-004	0.0158	8.0000e-005	0.0158	4.1900e-003	7.0000e-005	4.2700e-003	0.0000	11.9782	11.9782	3.3000e-004	3.3000e-004	12.0835
Total	**5.2300e-003**	**3.2600e-003**	**0.0402**	**1.3000e-004**	**0.0158**	**8.0000e-005**	**0.0158**	**4.1900e-003**	**7.0000e-005**	**4.2700e-003**	**0.0000**	**11.9782**	**11.9782**	**3.3000e-004**	**3.3000e-004**	**12.0835**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0342	0.2569	1.0417	2.1600e-003		6.1000e-003	6.1000e-003		5.8500e-003	5.8500e-003	0.0000	190.0202	190.0202	0.0615	0.0000	191.5566
Total	**0.0342**	**0.2569**	**1.0417**	**2.1600e-003**	**0.0000**	**6.1000e-003**	**6.1000e-003**	**0.0000**	**5.8500e-003**	**5.8500e-003**	**0.0000**	**190.0202**	**190.0202**	**0.0615**	**0.0000**	**191.5566**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Marin NCLH - Seminary Point Planning Area (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2300e-003	3.2600e-003	0.0402	1.3000e-004	0.0158	8.0000e-005	0.0158	4.1900e-003	7.0000e-005	4.2700e-003	0.0000	11.9782	11.9782	3.3000e-004	3.3000e-004	12.0835
Total	**5.2300e-003**	**3.2600e-003**	**0.0402**	**1.3000e-004**	**0.0158**	**8.0000e-005**	**0.0158**	**4.1900e-003**	**7.0000e-005**	**4.2700e-003**	**0.0000**	**11.9782**	**11.9782**	**3.3000e-004**	**3.3000e-004**	**12.0835**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0265	0.2911	0.2728	5.7000e-004		0.0115	0.0115		0.0106	0.0106	0.0000	50.0913	50.0913	0.0162	0.0000	50.4963
Total	**0.0265**	**0.2911**	**0.2728**	**5.7000e-004**		**0.0115**	**0.0115**		**0.0106**	**0.0106**	**0.0000**	**50.0913**	**50.0913**	**0.0162**	**0.0000**	**50.4963**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Marin NCLH - Seminary Point Planning Area (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-005	2.5200e-003	9.2000e-004	1.0000e-005	3.5000e-004	1.0000e-005	3.6000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	1.1008	1.1008	4.0000e-005	1.6000e-004	1.1482
Worker	0.0112	6.9800e-003	0.0861	2.8000e-004	0.0337	1.7000e-004	0.0339	8.9700e-003	1.6000e-004	9.1300e-003	0.0000	25.6333	25.6333	7.1000e-004	7.0000e-004	25.8587
Total	**0.0113**	**9.5000e-003**	**0.0870**	**2.9000e-004**	**0.0341**	**1.8000e-004**	**0.0342**	**9.0700e-003**	**1.7000e-004**	**9.2400e-003**	**0.0000**	**26.7342**	**26.7342**	**7.5000e-004**	**8.6000e-004**	**27.0069**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.2200e-003	0.1218	0.3376	5.7000e-004		9.3000e-004	9.3000e-004		9.3000e-004	9.3000e-004	0.0000	50.0912	50.0912	0.0162	0.0000	50.4962
Total	**9.2200e-003**	**0.1218**	**0.3376**	**5.7000e-004**		**9.3000e-004**	**9.3000e-004**		**9.3000e-004**	**9.3000e-004**	**0.0000**	**50.0912**	**50.0912**	**0.0162**	**0.0000**	**50.4962**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Marin NCLH - Seminary Point Planning Area (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Vendor	7.0000e-005	2.5200e-003	9.2000e-004	1.0000e-005	3.5000e-004	1.0000e-005	3.6000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	1.1008	1.1008	4.0000e-005	1.6000e-004	1.1482
Worker	0.0112	6.9800e-003	0.0861	2.8000e-004	0.0337	1.7000e-004	0.0339	8.9700e-003	1.6000e-004	9.1300e-003	0.0000	25.6333	25.6333	7.1000e-004	7.0000e-004	25.8587
Total	**0.0113**	**9.5000e-003**	**0.0870**	**2.9000e-004**	**0.0341**	**1.8000e-004**	**0.0342**	**9.0700e-003**	**1.7000e-004**	**9.2400e-003**	**0.0000**	**26.7342**	**26.7342**	**7.5000e-004**	**8.6000e-004**	**27.0069**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0171	0.1835	0.1844	3.9000e-004		7.1600e-003	7.1600e-003		6.5900e-003	6.5900e-003	0.0000	34.1750	34.1750	0.0111	0.0000	34.4514
Total	**0.0171**	**0.1835**	**0.1844**	**3.9000e-004**		**7.1600e-003**	**7.1600e-003**		**6.5900e-003**	**6.5900e-003**	**0.0000**	**34.1750**	**34.1750**	**0.0111**	**0.0000**	**34.4514**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.7000e-003	6.1000e-004	1.0000e-005	2.4000e-004	1.0000e-005	2.5000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.7374	0.7374	3.0000e-005	1.0000e-004	0.7690

Marin NCLH - Seminary Point Planning Area (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Worker	7.1900e-003	4.2800e-003	0.0550	1.8000e-004	0.0230	1.1000e-004	0.0231	6.1200e-003	1.0000e-004	6.2200e-003	0.0000	16.9055	16.9055	4.4000e-004	4.4000e-004	17.0491
Total	**7.2400e-003**	**5.9800e-003**	**0.0556**	**1.9000e-004**	**0.0232**	**1.2000e-004**	**0.0234**	**6.1900e-003**	**1.1000e-004**	**6.3000e-003**	**0.0000**	**17.6429**	**17.6429**	**4.7000e-004**	**5.4000e-004**	**17.8182**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.2900e-003	0.0831	0.2303	3.9000e-004		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	34.1750	34.1750	0.0111	0.0000	34.4513
Total	**6.2900e-003**	**0.0831**	**0.2303**	**3.9000e-004**		**6.4000e-004**	**6.4000e-004**		**6.4000e-004**	**6.4000e-004**	**0.0000**	**34.1750**	**34.1750**	**0.0111**	**0.0000**	**34.4513**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.7000e-003	6.1000e-004	1.0000e-005	2.4000e-004	1.0000e-005	2.5000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.7374	0.7374	3.0000e-005	1.0000e-004	0.7690
Worker	7.1900e-003	4.2800e-003	0.0550	1.8000e-004	0.0230	1.1000e-004	0.0231	6.1200e-003	1.0000e-004	6.2200e-003	0.0000	16.9055	16.9055	4.4000e-004	4.4000e-004	17.0491

Marin NCLH - Seminary Point Planning Area (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**7.2400e-003**	**5.9800e-003**	**0.0556**	**1.9000e-004**	**0.0232**	**1.2000e-004**	**0.0234**	**6.1900e-003**	**1.1000e-004**	**6.3000e-003**	**0.0000**	**17.6429**	**17.6429**	**4.7000e-004**	**5.4000e-004**	**17.8182**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0560					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3800e-003	0.0317	0.0409	5.0000e-005		1.8300e-003	1.8300e-003		1.6900e-003	1.6900e-003	0.0000	4.8217	4.8217	1.5600e-003	0.0000	4.8607
Total	**0.0593**	**0.0317**	**0.0409**	**5.0000e-005**		**1.8300e-003**	**1.8300e-003**		**1.6900e-003**	**1.6900e-003**	**0.0000**	**4.8217**	**4.8217**	**1.5600e-003**	**0.0000**	**4.8607**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0151	9.4100e-003	0.1162	3.8000e-004	0.0455	2.3000e-004	0.0457	0.0121	2.1000e-004	0.0123	0.0000	34.5870	34.5870	9.6000e-004	9.4000e-004	34.8912

Marin NCLH - Seminary Point Planning Area (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**0.0151**	**9.4100e-003**	**0.1162**	**3.8000e-004**	**0.0455**	**2.3000e-004**	**0.0457**	**0.0121**	**2.1000e-004**	**0.0123**	**0.0000**	**34.5870**	**34.5870**	**9.6000e-004**	**9.4000e-004**	**34.8912**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0560					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.8000e-004	2.9300e-003	0.0417	5.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	4.8217	4.8217	1.5600e-003	0.0000	4.8606
Total	**0.0566**	**2.9300e-003**	**0.0417**	**5.0000e-005**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**	**0.0000**	**4.8217**	**4.8217**	**1.5600e-003**	**0.0000**	**4.8606**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0151	9.4100e-003	0.1162	3.8000e-004	0.0455	2.3000e-004	0.0457	0.0121	2.1000e-004	0.0123	0.0000	34.5870	34.5870	9.6000e-004	9.4000e-004	34.8912

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**0.0151**	**9.4100e-003**	**0.1162**	**3.8000e-004**	**0.0455**	**2.3000e-004**	**0.0457**	**0.0121**	**2.1000e-004**	**0.0123**	**0.0000**	**34.5870**	**34.5870**	**9.6000e-004**	**9.4000e-004**	**34.8912**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0894					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9800e-003	0.0470	0.0650	9.0000e-005		2.5100e-003	2.5100e-003		2.3100e-003	2.3100e-003	0.0000	7.7021	7.7021	2.4900e-003	0.0000	7.7644
Total	**0.0944**	**0.0470**	**0.0650**	**9.0000e-005**		**2.5100e-003**	**2.5100e-003**		**2.3100e-003**	**2.3100e-003**	**0.0000**	**7.7021**	**7.7021**	**2.4900e-003**	**0.0000**	**7.7644**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0227	0.0135	0.1737	5.8000e-004	0.0727	3.5000e-004	0.0730	0.0193	3.2000e-004	0.0197	0.0000	53.4087	53.4087	1.4000e-003	1.4100e-003	53.8624

Marin NCLH - Seminary Point Planning Area (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**0.0227**	**0.0135**	**0.1737**	**5.8000e-004**	**0.0727**	**3.5000e-004**	**0.0730**	**0.0193**	**3.2000e-004**	**0.0197**	**0.0000**	**53.4087**	**53.4087**	**1.4000e-003**	**1.4100e-003**	**53.8624**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0894					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0800e-003	4.6800e-003	0.0666	9.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	7.7021	7.7021	2.4900e-003	0.0000	7.7644
Total	**0.0905**	**4.6800e-003**	**0.0666**	**9.0000e-005**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**	**0.0000**	**7.7021**	**7.7021**	**2.4900e-003**	**0.0000**	**7.7644**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0227	0.0135	0.1737	5.8000e-004	0.0727	3.5000e-004	0.0730	0.0193	3.2000e-004	0.0197	0.0000	53.4087	53.4087	1.4000e-003	1.4100e-003	53.8624

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**0.0227**	**0.0135**	**0.1737**	**5.8000e-004**	**0.0727**	**3.5000e-004**	**0.0730**	**0.0193**	**3.2000e-004**	**0.0197**	**0.0000**	**53.4087**	**53.4087**	**1.4000e-003**	**1.4100e-003**	**53.8624**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.543132	0.061625	0.200801	0.122893	0.023519	0.005568	0.006832	0.003721	0.000658	0.000395	0.027388	0.000726	0.002
Single Family Housing	0.543132	0.061625	0.200801	0.122893	0.023519	0.005568	0.006832	0.003721	0.000658	0.000395	0.027388	0.000726	0.002

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

Marin NCLH - Seminary Point Planning Area (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Marin NCLH - Seminary Point Planning Area (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

11.0 Vegetation

Marin NCLH - Shuck Knoll (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Marin NCLH - Shuck Knoll (Residential)

Marin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	14.00	Dwelling Unit	0.37	20,097.00	40

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2026
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on PD

Construction Phase - Based on data request

Off-road Equipment - based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Off-road Equipment - Based on data request response

Trips and VMT - Based on data request response

Architectural Coating -

Woodstoves - Construction run only

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Area Coating - Construction run only

Energy Use - Construction run only

Water And Wastewater - Construction run only

Solid Waste - Construction run only

Construction Off-road Equipment Mitigation - 90% tier 4 construction equipments and watering exposed area twice a day mitigation applied.

Area Mitigation -

Fleet Mix -

Vehicle Trips - Construction run only

Consumer Products - Construction run only

Landscape Equipment - Construction run only

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Residential_Exterior	13565	0
tblAreaCoating	Area_Residential_Interior	40696	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	10.00	40.00
tblConstructionPhase	NumDays	1.00	40.00
tblConstructionPhase	NumDays	2.00	80.00
tblConstructionPhase	NumDays	100.00	180.00
tblConstructionPhase	NumDays	5.00	200.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	741.44	0.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	NT24NG	2,615.00	0.00
tblEnergyUse	T24E	90.83	0.00
tblEnergyUse	T24NG	5,828.01	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	2.10	0.00
tblFireplaces	NumberNoFireplace	0.56	0.00
tblFireplaces	NumberWood	2.38	0.00
tblLandscapeEquipment	NumberSummerDays	180	0

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblLandUse	LandUseSquareFeet	14,000.00	20,097.00
tblOffRoadEquipment	HorsePower	158.00	273.00
tblOffRoadEquipment	HorsePower	402.00	430.00
tblOffRoadEquipment	HorsePower	80.00	249.00
tblOffRoadEquipment	HorsePower	367.00	304.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	9.00	350.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	132.00	225.00
tblOffRoadEquipment	HorsePower	80.00	130.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	9.00	350.00
tblOffRoadEquipment	HorsePower	158.00	24.00
tblOffRoadEquipment	HorsePower	402.00	350.00
tblOffRoadEquipment	HorsePower	402.00	197.00
tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	97.00	104.00
tblOffRoadEquipment	HorsePower	63.00	130.00
tblOffRoadEquipment	HorsePower	63.00	49.00
tblOffRoadEquipment	HorsePower	231.00	367.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	89.00	83.00
tblOffRoadEquipment	HorsePower	65.00	130.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblSolidWaste	LandfillCaptureGasFlare	94.00	0.00
tblSolidWaste	LandfillNoGasCapture	6.00	0.00
tblSolidWaste	SolidWasteGenerationRate	6.44	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	6.00
tblTripsAndVMT	HaulingTripNumber	0.00	6.00
tblTripsAndVMT	HaulingTripNumber	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	25.00	30.00
tblTripsAndVMT	WorkerTripNumber	28.00	30.00
tblTripsAndVMT	WorkerTripNumber	35.00	50.00
tblTripsAndVMT	WorkerTripNumber	10.00	80.00
tblTripsAndVMT	WorkerTripNumber	2.00	120.00
tblVehicleTrips	ST_TR	4.91	0.00
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	WD_TR	5.44	0.00
tblWater	IndoorWaterUseRate	912,156.36	0.00
tblWater	OutdoorWaterUseRate	575,055.10	0.00
tblWoodstoves	NumberCatalytic	0.28	0.00
tblWoodstoves	NumberNoncatalytic	0.28	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0700	0.6086	0.5469	1.7700e-003	4.1800e-003	0.0229	0.0270	1.1100e-003	0.0210	0.0221	0.0000	155.8825	155.8825	0.0494	1.2000e-004	157.1531
2024	0.3561	1.7259	2.2353	6.0300e-003	0.1527	0.0664	0.2191	0.0406	0.0611	0.1018	0.0000	534.9454	534.9454	0.1382	3.4600e-003	539.4332
2025	0.0385	0.0202	0.0713	1.9000e-004	0.0203	9.8000e-004	0.0213	5.4100e-003	9.0000e-004	6.3100e-003	0.0000	17.6297	17.6297	1.2600e-003	3.9000e-004	17.7783
Maximum	**0.3561**	**1.7259**	**2.2353**	**6.0300e-003**	**0.1527**	**0.0664**	**0.2191**	**0.0406**	**0.0611**	**0.1018**	**0.0000**	**534.9454**	**534.9454**	**0.1382**	**3.4600e-003**	**539.4332**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0272	0.1458	0.7926	1.7700e-003	4.1800e-003	4.1600e-003	8.3400e-003	1.1100e-003	4.0300e-003	5.1500e-003	0.0000	155.8823	155.8823	0.0494	1.2000e-004	157.1529
2024	0.2367	0.5815	2.7445	6.0300e-003	0.1527	0.0127	0.1654	0.0406	0.0122	0.0529	0.0000	534.9449	534.9449	0.1382	3.4600e-003	539.4327
2025	0.0372	5.4200e-003	0.0719	1.9000e-004	0.0203	1.5000e-004	0.0205	5.4100e-003	1.4000e-004	5.5500e-003	0.0000	17.6297	17.6297	1.2600e-003	3.9000e-004	17.7783
Maximum	**0.2367**	**0.5815**	**2.7445**	**6.0300e-003**	**0.1527**	**0.0127**	**0.1654**	**0.0406**	**0.0122**	**0.0529**	**0.0000**	**534.9449**	**534.9449**	**0.1382**	**3.4600e-003**	**539.4327**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**35.23**	**68.88**	**-26.48**	**0.00**	**0.00**	**81.15**	**27.39**	**0.00**	**80.26**	**51.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**11-13-2023**	**2-12-2024**	0.9867	0.2904
2	**2-13-2024**	**5-12-2024**	0.6661	0.2646
3	**5-13-2024**	**8-12-2024**	0.5801	0.2285
4	**8-13-2024**	**11-12-2024**	0.3247	0.1280
5	**11-13-2024**	**2-12-2025**	0.1887	0.0927
6	**2-13-2025**	**5-12-2025**	0.0158	0.0116
		Highest	0.9867	0.2904

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/13/2023	1/5/2024	5	40	

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2	Site Preparation, Grading and Paving	Site Preparation	1/8/2024	3/1/2024	5	40	
3	Foundation	Grading	3/4/2024	6/21/2024	5	80	
4	Building Construction	Building Construction	4/15/2024	12/20/2024	5	180	
5	Architectural Coating	Architectural Coating	5/27/2024	2/28/2025	5	200	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 40,696; Residential Outdoor: 13,565; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	2	8.00	273	0.38
Demolition	Off-Highway Trucks	3	8.00	430	0.38
Demolition	Rollers	1	8.00	249	0.38
Demolition	Scrapers	2	8.00	304	0.48
Demolition	Skid Steer Loaders	1	8.00	74	0.37
Demolition	Tractors/Loaders/Backhoes	1	8.00	104	0.37
Site Preparation, Grading and Paving	Cement and Mortar Mixers	2	8.00	350	0.56
Site Preparation, Grading and Paving	Off-Highway Trucks	3	8.00	350	0.38
Site Preparation, Grading and Paving	Paving Equipment	1	8.00	225	0.36
Site Preparation, Grading and Paving	Rollers	1	8.00	130	0.38
Site Preparation, Grading and Paving	Skid Steer Loaders	2	8.00	74	0.37
Site Preparation, Grading and Paving	Tractors/Loaders/Backhoes	2	8.00	104	0.37
Foundation		0	8.00		
Foundation	Cement and Mortar Mixers	4	8.00	350	0.56
Foundation	Excavators	2	8.00	24	0.38
Foundation	Off-Highway Trucks	3	8.00	350	0.38

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Foundation	Off-Highway Trucks	1	8.00	197	0.38
Foundation	Skid Steer Loaders	2	8.00	74	0.37
Foundation	Tractors/Loaders/Backhoes	2	8.00	104	0.37
Building Construction	Aerial Lifts	1	8.00	130	0.31
Building Construction	Aerial Lifts	1	8.00	49	0.31
Building Construction	Cranes	1	8.00	367	0.29
Building Construction	Forklifts	1	8.00	83	0.20
Architectural Coating	Forklifts	1	8.00	83	0.20
Architectural Coating	Skid Steer Loaders	1	8.00	130	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	10	30.00	0.00	6.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation, Grading and Paving	11	30.00	0.00	6.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Foundation	14	50.00	0.00	6.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	80.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	120.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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Category	tons/yr										MT/yr					
Off-Road	0.0686	0.6072	0.5354	1.7400e-003		0.0228	0.0228		0.0210	0.0210	0.0000	152.4690	152.4690	0.0493	0.0000	153.7018
Total	**0.0686**	**0.6072**	**0.5354**	**1.7400e-003**		**0.0228**	**0.0228**		**0.0210**	**0.0210**	**0.0000**	**152.4690**	**152.4690**	**0.0493**	**0.0000**	**153.7018**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.9000e-004	1.1000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1649	0.1649	1.0000e-005	3.0000e-005	0.1730
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4600e-003	9.6000e-004	0.0113	4.0000e-005	4.1400e-003	2.0000e-005	4.1600e-003	1.1000e-003	2.0000e-005	1.1200e-003	0.0000	3.2486	3.2486	1.0000e-004	9.0000e-005	3.2784
Total	**1.4700e-003**	**1.3500e-003**	**0.0115**	**4.0000e-005**	**4.1800e-003**	**2.0000e-005**	**4.2100e-003**	**1.1100e-003**	**2.0000e-005**	**1.1300e-003**	**0.0000**	**3.4135**	**3.4135**	**1.1000e-004**	**1.2000e-004**	**3.4514**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	0.0257	0.1444	0.7811	1.7400e-003		4.1300e-003	4.1300e-003		4.0100e-003	4.0100e-003	0.0000	152.4688	152.4688	0.0493	0.0000	153.7016
Total	**0.0257**	**0.1444**	**0.7811**	**1.7400e-003**		**4.1300e-003**	**4.1300e-003**		**4.0100e-003**	**4.0100e-003**	**0.0000**	**152.4688**	**152.4688**	**0.0493**	**0.0000**	**153.7016**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.9000e-004	1.1000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1649	0.1649	1.0000e-005	3.0000e-005	0.1730
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4600e-003	9.6000e-004	0.0113	4.0000e-005	4.1400e-003	2.0000e-005	4.1600e-003	1.1000e-003	2.0000e-005	1.1200e-003	0.0000	3.2486	3.2486	1.0000e-004	9.0000e-005	3.2784
Total	**1.4700e-003**	**1.3500e-003**	**0.0115**	**4.0000e-005**	**4.1800e-003**	**2.0000e-005**	**4.2100e-003**	**1.1100e-003**	**2.0000e-005**	**1.1300e-003**	**0.0000**	**3.4135**	**3.4135**	**1.1000e-004**	**1.2000e-004**	**3.4514**

3.2 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.5600e-003	0.0807	0.0754	2.5000e-004		3.0300e-003	3.0300e-003		2.7900e-003	2.7900e-003	0.0000	21.7800	21.7800	7.0400e-003	0.0000	21.9561

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Total	**9.5600e-003**	**0.0807**	**0.0754**	**2.5000e-004**		**3.0300e-003**	**3.0300e-003**		**2.7900e-003**	**2.7900e-003**	**0.0000**	**21.7800**	**21.7800**	**7.0400e-003**	**0.0000**	**21.9561**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	6.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0231	0.0231	0.0000	0.0000	0.0243
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.2000e-004	1.5100e-003	0.0000	5.9000e-004	0.0000	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4492	0.4492	1.0000e-005	1.0000e-005	0.4531
Total	**2.0000e-004**	**1.8000e-004**	**1.5300e-003**	**0.0000**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4723**	**0.4723**	**1.0000e-005**	**1.0000e-005**	**0.4774**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.6600e-003	0.0202	0.1115	2.5000e-004		5.7000e-004	5.7000e-004		5.6000e-004	5.6000e-004	0.0000	21.7799	21.7799	7.0400e-003	0.0000	21.9560
Total	**3.6600e-003**	**0.0202**	**0.1115**	**2.5000e-004**		**5.7000e-004**	**5.7000e-004**		**5.6000e-004**	**5.6000e-004**	**0.0000**	**21.7799**	**21.7799**	**7.0400e-003**	**0.0000**	**21.9560**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	6.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0231	0.0231	0.0000	0.0000	0.0243
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.2000e-004	1.5100e-003	0.0000	5.9000e-004	0.0000	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4492	0.4492	1.0000e-005	1.0000e-005	0.4531
Total	**2.0000e-004**	**1.8000e-004**	**1.5300e-003**	**0.0000**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4723**	**0.4723**	**1.0000e-005**	**1.0000e-005**	**0.4774**

3.3 Site Preparation, Grading and Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0414	0.3337	0.4113	1.1400e-003		0.0127	0.0127		0.0117	0.0117	0.0000	100.4038	100.4038	0.0325	0.0000	101.2156
Total	**0.0414**	**0.3337**	**0.4113**	**1.1400e-003**	**0.0000**	**0.0127**	**0.0127**	**0.0000**	**0.0117**	**0.0117**	**0.0000**	**100.4038**	**100.4038**	**0.0325**	**0.0000**	**101.2156**

Date: 10/6/2022 2:18 PM

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.5000e-004	1.3000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1851	0.1851	1.0000e-005	3.0000e-005	0.1942
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5700e-003	9.8000e-004	0.0121	4.0000e-005	4.7300e-003	2.0000e-005	4.7500e-003	1.2600e-003	2.0000e-005	1.2800e-003	0.0000	3.5935	3.5935	1.0000e-004	1.0000e-004	3.6251
Total	**1.5800e-003**	**1.4300e-003**	**0.0122**	**4.0000e-005**	**4.7800e-003**	**2.0000e-005**	**4.8000e-003**	**1.2700e-003**	**2.0000e-005**	**1.3000e-003**	**0.0000**	**3.7786**	**3.7786**	**1.1000e-004**	**1.3000e-004**	**3.8193**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0187	0.1334	0.5795	1.1400e-003		3.0700e-003	3.0700e-003		2.9600e-003	2.9600e-003	0.0000	100.4037	100.4037	0.0325	0.0000	101.2155
Total	**0.0187**	**0.1334**	**0.5795**	**1.1400e-003**	**0.0000**	**3.0700e-003**	**3.0700e-003**	**0.0000**	**2.9600e-003**	**2.9600e-003**	**0.0000**	**100.4037**	**100.4037**	**0.0325**	**0.0000**	**101.2155**

Marin NCLH - Shuck Knoll (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.5000e-004	1.3000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1851	0.1851	1.0000e-005	3.0000e-005	0.1942
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5700e-003	9.8000e-004	0.0121	4.0000e-005	4.7300e-003	2.0000e-005	4.7500e-003	1.2600e-003	2.0000e-005	1.2800e-003	0.0000	3.5935	3.5935	1.0000e-004	1.0000e-004	3.6251
Total	**1.5800e-003**	**1.4300e-003**	**0.0122**	**4.0000e-005**	**4.7800e-003**	**2.0000e-005**	**4.8000e-003**	**1.2700e-003**	**2.0000e-005**	**1.3000e-003**	**0.0000**	**3.7786**	**3.7786**	**1.1000e-004**	**1.3000e-004**	**3.8193**

3.4 Foundation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0860	0.6639	0.7780	2.1600e-003		0.0250	0.0250		0.0230	0.0230	0.0000	190.0204	190.0204	0.0615	0.0000	191.5568
Total	**0.0860**	**0.6639**	**0.7780**	**2.1600e-003**	**0.0000**	**0.0250**	**0.0250**	**0.0000**	**0.0230**	**0.0230**	**0.0000**	**190.0204**	**190.0204**	**0.0615**	**0.0000**	**191.5568**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.5000e-004	1.3000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1851	0.1851	1.0000e-005	3.0000e-005	0.1942
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2300e-003	3.2600e-003	0.0402	1.3000e-004	0.0158	8.0000e-005	0.0158	4.1900e-003	7.0000e-005	4.2700e-003	0.0000	11.9782	11.9782	3.3000e-004	3.3000e-004	12.0835
Total	**5.2400e-003**	**3.7100e-003**	**0.0404**	**1.3000e-004**	**0.0158**	**8.0000e-005**	**0.0159**	**4.2000e-003**	**7.0000e-005**	**4.2900e-003**	**0.0000**	**12.1633**	**12.1633**	**3.4000e-004**	**3.6000e-004**	**12.2777**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0366	0.2682	1.0105	2.1600e-003		6.3200e-003	6.3200e-003		6.0400e-003	6.0400e-003	0.0000	190.0202	190.0202	0.0615	0.0000	191.5566
Total	**0.0366**	**0.2682**	**1.0105**	**2.1600e-003**	**0.0000**	**6.3200e-003**	**6.3200e-003**	**0.0000**	**6.0400e-003**	**6.0400e-003**	**0.0000**	**190.0202**	**190.0202**	**0.0615**	**0.0000**	**191.5566**

Marin NCLH - Shuck Knoll (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.5000e-004	1.3000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1851	0.1851	1.0000e-005	3.0000e-005	0.1942
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2300e-003	3.2600e-003	0.0402	1.3000e-004	0.0158	8.0000e-005	0.0158	4.1900e-003	7.0000e-005	4.2700e-003	0.0000	11.9782	11.9782	3.3000e-004	3.3000e-004	12.0835
Total	**5.2400e-003**	**3.7100e-003**	**0.0404**	**1.3000e-004**	**0.0158**	**8.0000e-005**	**0.0159**	**4.2000e-003**	**7.0000e-005**	**4.2900e-003**	**0.0000**	**12.1633**	**12.1633**	**3.4000e-004**	**3.6000e-004**	**12.2777**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0507	0.5464	0.4972	1.0800e-003		0.0211	0.0211		0.0194	0.0194	0.0000	95.1052	95.1052	0.0308	0.0000	95.8742
Total	**0.0507**	**0.5464**	**0.4972**	**1.0800e-003**		**0.0211**	**0.0211**		**0.0194**	**0.0194**	**0.0000**	**95.1052**	**95.1052**	**0.0308**	**0.0000**	**95.8742**

Marin NCLH - Shuck Knoll (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2000e-004	4.2300e-003	1.5500e-003	2.0000e-005	5.9000e-004	2.0000e-005	6.1000e-004	1.7000e-004	2.0000e-005	1.9000e-004	0.0000	1.8519	1.8519	7.0000e-005	2.6000e-004	1.9315
Worker	0.0188	0.0117	0.1448	4.7000e-004	0.0567	2.8000e-004	0.0570	0.0151	2.6000e-004	0.0154	0.0000	43.1215	43.1215	1.2000e-003	1.1700e-003	43.5007
Total	**0.0189**	**0.0160**	**0.1464**	**4.9000e-004**	**0.0573**	**3.0000e-004**	**0.0576**	**0.0153**	**2.8000e-004**	**0.0155**	**0.0000**	**44.9734**	**44.9734**	**1.2700e-003**	**1.4300e-003**	**45.4322**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0146	0.1171	0.5680	1.0800e-003		1.7600e-003	1.7600e-003		1.7600e-003	1.7600e-003	0.0000	95.1051	95.1051	0.0308	0.0000	95.8741
Total	**0.0146**	**0.1171**	**0.5680**	**1.0800e-003**		**1.7600e-003**	**1.7600e-003**		**1.7600e-003**	**1.7600e-003**	**0.0000**	**95.1051**	**95.1051**	**0.0308**	**0.0000**	**95.8741**

Mitigated Construction Off-Site

Marin NCLH - Shuck Knoll (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2000e-004	4.2300e-003	1.5500e-003	2.0000e-005	5.9000e-004	2.0000e-005	6.1000e-004	1.7000e-004	2.0000e-005	1.9000e-004	0.0000	1.8519	1.8519	7.0000e-005	2.6000e-004	1.9315
Worker	0.0188	0.0117	0.1448	4.7000e-004	0.0567	2.8000e-004	0.0570	0.0151	2.6000e-004	0.0154	0.0000	43.1215	43.1215	1.2000e-003	1.1700e-003	43.5007
Total	**0.0189**	**0.0160**	**0.1464**	**4.9000e-004**	**0.0573**	**3.0000e-004**	**0.0576**	**0.0153**	**2.8000e-004**	**0.0155**	**0.0000**	**44.9734**	**44.9734**	**1.2700e-003**	**1.4300e-003**	**45.4322**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1111					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.9000e-003	0.0647	0.0834	1.1000e-004		3.7400e-003	3.7400e-003		3.4400e-003	3.4400e-003	0.0000	9.8312	9.8312	3.1800e-003	0.0000	9.9107
Total	**0.1180**	**0.0647**	**0.0834**	**1.1000e-004**		**3.7400e-003**	**3.7400e-003**		**3.4400e-003**	**3.4400e-003**	**0.0000**	**9.8312**	**9.8312**	**3.1800e-003**	**0.0000**	**9.9107**

Unmitigated Construction Off-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0246	0.0154	0.1895	6.2000e-004	0.0742	3.7000e-004	0.0746	0.0198	3.4000e-004	0.0201	0.0000	56.4173	56.4173	1.5700e-003	1.5300e-003	56.9134
Total	**0.0246**	**0.0154**	**0.1895**	**6.2000e-004**	**0.0742**	**3.7000e-004**	**0.0746**	**0.0198**	**3.4000e-004**	**0.0201**	**0.0000**	**56.4173**	**56.4173**	**1.5700e-003**	**1.5300e-003**	**56.9134**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1111					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3800e-003	5.9800e-003	0.0850	1.1000e-004		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	9.8312	9.8312	3.1800e-003	0.0000	9.9107
Total	**0.1124**	**5.9800e-003**	**0.0850**	**1.1000e-004**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**9.8312**	**9.8312**	**3.1800e-003**	**0.0000**	**9.9107**

Mitigated Construction Off-Site

Marin NCLH - Shuck Knoll (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0246	0.0154	0.1895	6.2000e-004	0.0742	3.7000e-004	0.0746	0.0198	3.4000e-004	0.0201	0.0000	56.4173	56.4173	1.5700e-003	1.5300e-003	56.9134
Total	**0.0246**	**0.0154**	**0.1895**	**6.2000e-004**	**0.0742**	**3.7000e-004**	**0.0746**	**0.0198**	**3.4000e-004**	**0.0201**	**0.0000**	**56.4173**	**56.4173**	**1.5700e-003**	**1.5300e-003**	**56.9134**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0304					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7400e-003	0.0164	0.0227	3.0000e-005		8.8000e-004	8.8000e-004		8.1000e-004	8.1000e-004	0.0000	2.6926	2.6926	8.7000e-004	0.0000	2.7144
Total	**0.0322**	**0.0164**	**0.0227**	**3.0000e-005**		**8.8000e-004**	**8.8000e-004**		**8.1000e-004**	**8.1000e-004**	**0.0000**	**2.6926**	**2.6926**	**8.7000e-004**	**0.0000**	**2.7144**

Unmitigated Construction Off-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3500e-003	3.7800e-003	0.0486	1.6000e-004	0.0203	1.0000e-004	0.0204	5.4100e-003	9.0000e-005	5.5000e-003	0.0000	14.9371	14.9371	3.9000e-004	3.9000e-004	15.0640
Total	**6.3500e-003**	**3.7800e-003**	**0.0486**	**1.6000e-004**	**0.0203**	**1.0000e-004**	**0.0204**	**5.4100e-003**	**9.0000e-005**	**5.5000e-003**	**0.0000**	**14.9371**	**14.9371**	**3.9000e-004**	**3.9000e-004**	**15.0640**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0304					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8000e-004	1.6400e-003	0.0233	3.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	2.6926	2.6926	8.7000e-004	0.0000	2.7144
Total	**0.0308**	**1.6400e-003**	**0.0233**	**3.0000e-005**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**2.6926**	**2.6926**	**8.7000e-004**	**0.0000**	**2.7144**

Mitigated Construction Off-Site

Marin NCLH - Shuck Knoll (Residential) - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3500e-003	3.7800e-003	0.0486	1.6000e-004	0.0203	1.0000e-004	0.0204	5.4100e-003	9.0000e-005	5.5000e-003	0.0000	14.9371	14.9371	3.9000e-004	3.9000e-004	15.0640
Total	**6.3500e-003**	**3.7800e-003**	**0.0486**	**1.6000e-004**	**0.0203**	**1.0000e-004**	**0.0204**	**5.4100e-003**	**9.0000e-005**	**5.5000e-003**	**0.0000**	**14.9371**	**14.9371**	**3.9000e-004**	**3.9000e-004**	**15.0640**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.543132	0.061625	0.200801	0.122893	0.023519	0.005568	0.006832	0.003721	0.000658	0.000395	0.027388	0.000726	0.002

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Marin NCLH Operations

Marin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	15.80	1000sqft	0.36	15,800.00	0
Day-Care Center	3.00	1000sqft	0.07	3,000.00	0
Health Club	17.00	1000sqft	0.39	17,000.00	0
Apartments Mid Rise	325.00	Dwelling Unit	8.55	325,000.00	930
Single Family Housing	11.00	Dwelling Unit	3.57	19,800.00	31

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2027
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on the data request and project description. All the renovations and redevelopment land uses like library, cafe, admin & academic buildings were not considered as they would have same operational emissions as before.

Construction Phase - Only operational run

Off-road Equipment - based on data request response

Off-road Equipment - Only operational run

Off-road Equipment -

Off-road Equipment -

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Only operational run

On-road Fugitive Dust - Only operational run

Demolition - Only operational run

Grading - Only operational run

Architectural Coating - Only operational run

Vehicle Trips - Based on transportation analysis

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves -

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use -

Water And Wastewater -

Solid Waste -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Only Natural Gas Hearth

Energy Mitigation -

Water Mitigation -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	17,900.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	53,700.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	232,740.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblArchitecturalCoating	ConstArea_Residential_Interior	698,220.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	10.00	0.00
tblVehicleTrips	ST_TR	4.91	3.08
tblVehicleTrips	ST_TR	6.22	0.00
tblVehicleTrips	ST_TR	2.21	101.77
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	9.54	0.00
tblVehicleTrips	SU_TR	4.09	3.08
tblVehicleTrips	SU_TR	5.84	0.00
tblVehicleTrips	SU_TR	0.70	101.77
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	8.55	0.00
tblVehicleTrips	WD_TR	5.44	3.08
tblVehicleTrips	WD_TR	47.62	0.00
tblVehicleTrips	WD_TR	9.74	101.77
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	9.44	0.00

2.0 Emissions Summary

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**				**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**				**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.6374	0.0474	3.6197	2.3800e-003		0.1751	0.1751		0.1751	0.1751	16.2149	10.5051	26.7200	0.0304	1.0500e-003	27.7924
Energy	0.0212	0.1837	0.0938	1.1600e-003		0.0147	0.0147		0.0147	0.0147	0.0000	365.4446	365.4446	0.0292	6.9000e-003	368.2291
Mobile	1.0293	0.9661	9.3482	0.0191	2.2561	0.0135	2.2696	0.6023	0.0126	0.6149	0.0000	1,762.6653	1,762.6653	0.1177	0.0790	1,789.1390
Waste						0.0000	0.0000		0.0000	0.0000	56.4335	0.0000	56.4335	3.3351	0.0000	139.8117
Water						0.0000	0.0000		0.0000	0.0000	8.1960	18.2671	26.4631	0.8448	0.0202	53.6120
Total	**3.6880**	**1.1972**	**13.0616**	**0.0227**	**2.2561**	**0.2032**	**2.4593**	**0.6023**	**0.2023**	**0.8046**	**80.8444**	**2,156.8822**	**2,237.7265**	**4.3571**	**0.1072**	**2,378.5841**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.8241	0.0407	2.4979	2.1000e-004		0.0148	0.0148		0.0148	0.0148	0.0000	17.9930	17.9930	4.1700e-003	2.6000e-004	18.1733
Energy	0.0212	0.1837	0.0938	1.1600e-003		0.0147	0.0147		0.0147	0.0147	0.0000	365.4446	365.4446	0.0292	6.9000e-003	368.2291
Mobile	1.0293	0.9661	9.3482	0.0191	2.2561	0.0135	2.2696	0.6023	0.0126	0.6149	0.0000	1,762.6653	1,762.6653	0.1177	0.0790	1,789.1390
Waste						0.0000	0.0000		0.0000	0.0000	56.4335	0.0000	56.4335	3.3351	0.0000	139.8117
Water						0.0000	0.0000		0.0000	0.0000	8.1960	18.2671	26.4631	0.8448	0.0202	53.6120
Total	**2.8747**	**1.1906**	**11.9399**	**0.0205**	**2.2561**	**0.0430**	**2.2990**	**0.6023**	**0.0420**	**0.6443**	**64.6295**	**2,164.3700**	**2,228.9995**	**4.3309**	**0.1064**	**2,368.9651**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**22.05**	**0.56**	**8.59**	**9.57**	**0.00**	**78.86**	**6.52**	**0.00**	**79.23**	**19.92**	**20.06**	**-0.35**	**0.39**	**0.60**	**0.74**	**0.40**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/1/2023	3/31/2023	5	0	
2	Utilities	Site Preparation	4/29/2023	4/28/2023	5	0	
3	Structure Retrofit	Building Construction	5/3/2023	5/2/2023	5	0	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Exterior Finishes	Paving	2/7/2024	2/6/2024	5	0	
5	Interior Finishes	Architectural Coating	2/21/2024	2/20/2024	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition			0.00	0.00	10.80	7.30				
Utilities			0.00	0.00	10.80	7.30				
Structure Retrofit			42.00	0.00	10.80	7.30				
Exterior Finishes			0.00	0.00	10.80	7.30				
Interior Finishes			0.00	0.00	10.80	7.30				

3.1 Mitigation Measures Construction

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Utilities - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Marin NCLH Operations - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Utilities - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Utilities - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Structure Retrofit - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Structure Retrofit - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Exterior Finishes - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Exterior Finishes - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Exterior Finishes - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Interior Finishes - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Interior Finishes - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Interior Finishes - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0293	0.9661	9.3482	0.0191	2.2561	0.0135	2.2696	0.6023	0.0126	0.6149	0.0000	1,762.6653	1,762.6653	0.1177	0.0790	1,789.1390
Unmitigated	1.0293	0.9661	9.3482	0.0191	2.2561	0.0135	2.2696	0.6023	0.0126	0.6149	0.0000	1,762.6653	1,762.6653	0.1177	0.0790	1,789.1390

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,000.00	1,000.00	1000.00	2,309,607	2,309,607
Day-Care Center	0.00	0.00	0.00		
General Office Building	1,608.00	1,608.00	1608.00	3,842,723	3,842,723
Health Club	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	2,608.00	2,608.00	2,608.00	6,152,330	6,152,330

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Day-Care Center	9.50	7.30	7.30	12.70	82.30	5.00	28	58	14
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Health Club	9.50	7.30	7.30	16.90	64.10	19.00	52	39	9
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.544281	0.061644	0.199793	0.122945	0.023341	0.005632	0.006920	0.003727	0.000656	0.000390	0.027229	0.000725	0.002716
Day-Care Center	0.544281	0.061644	0.199793	0.122945	0.023341	0.005632	0.006920	0.003727	0.000656	0.000390	0.027229	0.000725	0.002716
General Office Building	0.544281	0.061644	0.199793	0.122945	0.023341	0.005632	0.006920	0.003727	0.000656	0.000390	0.027229	0.000725	0.002716
Health Club	0.544281	0.061644	0.199793	0.122945	0.023341	0.005632	0.006920	0.003727	0.000656	0.000390	0.027229	0.000725	0.002716
Single Family Housing	0.544281	0.061644	0.199793	0.122945	0.023341	0.005632	0.006920	0.003727	0.000656	0.000390	0.027229	0.000725	0.002716

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	155.3139	155.3139	0.0251	3.0500e-003	156.8497
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	155.3139	155.3139	0.0251	3.0500e-003	156.8497
NaturalGas Mitigated	0.0212	0.1837	0.0938	1.1600e-003		0.0147	0.0147		0.0147	0.0147	0.0000	210.1307	210.1307	4.0300e-003	3.8500e-003	211.3794
NaturalGas Unmitigated	0.0212	0.1837	0.0938	1.1600e-003		0.0147	0.0147		0.0147	0.0147	0.0000	210.1307	210.1307	4.0300e-003	3.8500e-003	211.3794

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.74398e+006	0.0148	0.1264	0.0538	8.1000e-004		0.0102	0.0102		0.0102	0.0102	0.0000	146.4291	146.4291	2.8100e-003	2.6800e-003	147.2993
Day-Care Center	48960	2.6000e-004	2.4000e-003	2.0200e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.6127	2.6127	5.0000e-005	5.0000e-005	2.6282
General Office Building	302570	1.6300e-003	0.0148	0.0125	9.0000e-005		1.1300e-003	1.1300e-003		1.1300e-003	1.1300e-003	0.0000	16.1463	16.1463	3.1000e-004	3.0000e-004	16.2422
Health Club	417690	2.2500e-003	0.0205	0.0172	1.2000e-004		1.5600e-003	1.5600e-003		1.5600e-003	1.5600e-003	0.0000	22.2895	22.2895	4.3000e-004	4.1000e-004	22.4220
Single Family Housing	424503	2.2900e-003	0.0196	8.3200e-003	1.2000e-004		1.5800e-003	1.5800e-003		1.5800e-003	1.5800e-003	0.0000	22.6531	22.6531	4.3000e-004	4.2000e-004	22.7877
Total		**0.0212**	**0.1837**	**0.0938**	**1.1500e-003**		**0.0147**	**0.0147**		**0.0147**	**0.0147**	**0.0000**	**210.1307**	**210.1307**	**4.0300e-003**	**3.8600e-003**	**211.3794**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.74398e+006	0.0148	0.1264	0.0538	8.1000e-004		0.0102	0.0102		0.0102	0.0102	0.0000	146.4291	146.4291	2.8100e-003	2.6800e-003	147.2993
Day-Care Center	48960	2.6000e-004	2.4000e-003	2.0200e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.6127	2.6127	5.0000e-005	5.0000e-005	2.6282
General Office Building	302570	1.6300e-003	0.0148	0.0125	9.0000e-005		1.1300e-003	1.1300e-003		1.1300e-003	1.1300e-003	0.0000	16.1463	16.1463	3.1000e-004	3.0000e-004	16.2422
Health Club	417690	2.2500e-003	0.0205	0.0172	1.2000e-004		1.5600e-003	1.5600e-003		1.5600e-003	1.5600e-003	0.0000	22.2895	22.2895	4.3000e-004	4.1000e-004	22.4220
Single Family Housing	424503	2.2900e-003	0.0196	8.3200e-003	1.2000e-004		1.5800e-003	1.5800e-003		1.5800e-003	1.5800e-003	0.0000	22.6531	22.6531	4.3000e-004	4.2000e-004	22.7877
Total		**0.0212**	**0.1837**	**0.0938**	**1.1500e-003**		**0.0147**	**0.0147**		**0.0147**	**0.0147**	**0.0000**	**210.1307**	**210.1307**	**4.0300e-003**	**3.8600e-003**	**211.3794**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.26307e+006	116.8640	0.0189	2.2900e-003	118.0196
Day-Care Center	13110	1.2130	2.0000e-004	2.0000e-005	1.2250
General Office Building	190232	17.6010	2.8500e-003	3.5000e-004	17.7750
Health Club	126310	11.6867	1.8900e-003	2.3000e-004	11.8022
Single Family Housing	85915.7	7.9493	1.2900e-003	1.6000e-004	8.0279
Total		**155.3139**	**0.0251**	**3.0500e-003**	**156.8497**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.26307e+006	116.8640	0.0189	2.2900e-003	118.0196
Day-Care Center	13110	1.2130	2.0000e-004	2.0000e-005	1.2250
General Office Building	190232	17.6010	2.8500e-003	3.5000e-004	17.7750
Health Club	126310	11.6867	1.8900e-003	2.3000e-004	11.8022
Single Family Housing	85915.7	7.9493	1.2900e-003	1.6000e-004	8.0279
Total		**155.3139**	**0.0251**	**3.0500e-003**	**156.8497**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.8241	0.0407	2.4979	2.1000e-004		0.0148	0.0148		0.0148	0.0148	0.0000	17.9930	17.9930	4.1700e-003	2.6000e-004	18.1733
Unmitigated	2.6374	0.0474	3.6197	2.3800e-003		0.1751	0.1751		0.1751	0.1751	16.2149	10.5051	26.7200	0.0304	1.0500e-003	27.7924

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2614					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4864					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.8147	0.0187	1.1269	2.2500e-003		0.1612	0.1612		0.1612	0.1612	16.2149	6.4292	22.6441	0.0265	1.0500e-003	23.6188
Landscaping	0.0749	0.0287	2.4928	1.3000e-004		0.0138	0.0138		0.0138	0.0138	0.0000	4.0759	4.0759	3.9000e-003	0.0000	4.1735
Total	**2.6374**	**0.0474**	**3.6197**	**2.3800e-003**		**0.1751**	**0.1751**		**0.1751**	**0.1751**	**16.2149**	**10.5051**	**26.7200**	**0.0304**	**1.0500e-003**	**27.7924**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2614					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4864					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.4100e-003	0.0120	5.1100e-003	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9171	13.9171	2.7000e-004	2.6000e-004	13.9998
Landscaping	0.0749	0.0287	2.4928	1.3000e-004		0.0138	0.0138		0.0138	0.0138	0.0000	4.0759	4.0759	3.9000e-003	0.0000	4.1735
Total	**1.8241**	**0.0407**	**2.4979**	**2.1000e-004**		**0.0148**	**0.0148**		**0.0148**	**0.0148**	**0.0000**	**17.9930**	**17.9930**	**4.1700e-003**	**2.6000e-004**	**18.1733**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	26.4631	0.8448	0.0202	53.6120
Unmitigated	26.4631	0.8448	0.0202	53.6120

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	21.1751 / 13.3495	21.6421	0.6924	0.0166	43.8945
Day-Care Center	0.128669 / 0.330862	0.2124	4.2200e-003	1.0000e-004	0.3484
General Office Building	2.80819 / 1.72115	2.8542	0.0918	2.2000e-003	5.8051
Health Club	1.00543 / 0.616233	1.0219	0.0329	7.9000e-004	2.0784
Single Family Housing	0.716694 / 0.451829	0.7325	0.0234	5.6000e-004	1.4857
Total		**26.4631**	**0.8448**	**0.0202**	**53.6120**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	21.1751 / 13.3495	21.6421	0.6924	0.0166	43.8945
Day-Care Center	0.128669 / 0.330862	0.2124	4.2200e-003	1.0000e-004	0.3484
General Office Building	2.80819 / 1.72115	2.8542	0.0918	2.2000e-003	5.8051
Health Club	1.00543 / 0.616233	1.0219	0.0329	7.9000e-004	2.0784
Single Family Housing	0.716694 / 0.451829	0.7325	0.0234	5.6000e-004	1.4857
Total		**26.4631**	**0.8448**	**0.0202**	**53.6120**

8.0 Waste Detail

8.1 Mitigation Measures Waste

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	56.4335	3.3351	0.0000	139.8117
Unmitigated	56.4335	3.3351	0.0000	139.8117

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	149.5	30.3472	1.7935	0.0000	75.1838
Day-Care Center	3.9	0.7917	0.0468	0.0000	1.9613
General Office Building	14.69	2.9819	0.1762	0.0000	7.3876
Health Club	96.9	19.6698	1.1625	0.0000	48.7312
Single Family Housing	13.02	2.6429	0.1562	0.0000	6.5478
Total		**56.4335**	**3.3351**	**0.0000**	**139.8117**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	149.5	30.3472	1.7935	0.0000	75.1838
Day-Care Center	3.9	0.7917	0.0468	0.0000	1.9613
General Office Building	14.69	2.9819	0.1762	0.0000	7.3876
Health Club	96.9	19.6698	1.1625	0.0000	48.7312
Single Family Housing	13.02	2.6429	0.1562	0.0000	6.5478
Total		**56.4335**	**3.3351**	**0.0000**	**139.8117**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Marin NCLH Operations - Marin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Marin NCLH Operations

Marin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	15.80	1000sqft	0.36	15,800.00	0
Day-Care Center	3.00	1000sqft	0.07	3,000.00	0
Health Club	17.00	1000sqft	0.39	17,000.00	0
Apartments Mid Rise	325.00	Dwelling Unit	8.55	325,000.00	930
Single Family Housing	11.00	Dwelling Unit	3.57	19,800.00	31

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2027
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on the data request and project description. All the renovations and redevelopment land uses like library, cafe, admin & academic buildings were not considered as they would have same operational emissions as before.

Construction Phase - Only operational run

Off-road Equipment - based on data request response

Off-road Equipment - Only operational run

Off-road Equipment -

Off-road Equipment -

Marin NCLH Operations - Marin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Only operational run

On-road Fugitive Dust - Only operational run

Demolition - Only operational run

Grading - Only operational run

Architectural Coating - Only operational run

Vehicle Trips - Based on transportation analysis

Woodstoves -

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use -

Water And Wastewater -

Solid Waste -

Construction Off-road Equipment Mitigation -

Area Mitigation - Only Natural Gas Hearth

Fleet Mix -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	17,900.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	53,700.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	232,740.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblArchitecturalCoating	ConstArea_Residential_Interior	698,220.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	10.00	0.00
tblVehicleTrips	ST_TR	4.91	3.94
tblVehicleTrips	ST_TR	6.22	0.00
tblVehicleTrips	ST_TR	2.21	114.87
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	9.54	0.00
tblVehicleTrips	SU_TR	4.09	3.94
tblVehicleTrips	SU_TR	5.84	0.00
tblVehicleTrips	SU_TR	0.70	114.87
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	8.55	0.00
tblVehicleTrips	WD_TR	5.44	3.94
tblVehicleTrips	WD_TR	47.62	0.00
tblVehicleTrips	WD_TR	9.74	114.87
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	9.44	0.00

2.0 Emissions Summary

Marin NCLH Operations - Marin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Marin NCLH Operations - Marin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Marin NCLH Operations - Marin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	155.4680	3.4934	219.0316	0.3694		27.3081	27.3081		27.3081	27.3081	2,944.6868	1,322.2744	4,266.9611	4.0479	0.2081	4,430.1755
Energy	0.1163	1.0066	0.5140	6.3500e-003		0.0804	0.0804		0.0804	0.0804		1,269.2025	1,269.2025	0.0243	0.0233	1,276.7448
Mobile	7.4336	5.7211	59.7035	0.1314	15.3239	0.0880	15.4119	4.0775	0.0819	4.1594		13,344.7455	13,344.7455	0.7890	0.5336	13,523.4772
Total	**163.0179**	**10.2211**	**279.2491**	**0.5072**	**15.3239**	**27.4764**	**42.8003**	**4.0775**	**27.4703**	**31.5478**	**2,944.6868**	**15,936.2223**	**18,880.9091**	**4.8612**	**0.7650**	**19,230.3974**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	10.6614	2.4765	28.6159	0.0152		0.3281	0.3281		0.3281	0.3281	0.0000	2,804.1332	2,804.1332	0.1006	0.0505	2,821.6955
Energy	0.1163	1.0066	0.5140	6.3500e-003		0.0804	0.0804		0.0804	0.0804		1,269.2025	1,269.2025	0.0243	0.0233	1,276.7448
Mobile	7.4336	5.7211	59.7035	0.1314	15.3239	0.0880	15.4119	4.0775	0.0819	4.1594		13,344.7455	13,344.7455	0.7890	0.5336	13,523.4772
Total	**18.2113**	**9.2042**	**88.8334**	**0.1530**	**15.3239**	**0.4964**	**15.8204**	**4.0775**	**0.4903**	**4.5679**	**0.0000**	**17,418.0811**	**17,418.0811**	**0.9139**	**0.6073**	**17,621.9175**

Marin NCLH Operations - Marin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	88.83	9.95	68.19	69.84	0.00	98.19	63.04	0.00	98.22	85.52	100.00	-9.30	7.75	81.20	20.60	8.36

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/1/2023	3/31/2023	5	0	
2	Utilities	Site Preparation	4/29/2023	4/28/2023	5	0	
3	Structure Retrofit	Building Construction	5/3/2023	5/2/2023	5	0	
4	Exterior Finishes	Paving	2/7/2024	2/6/2024	5	0	
5	Interior Finishes	Architectural Coating	2/21/2024	2/20/2024	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition			0.00	0.00	10.80	7.30				
Utilities			0.00	0.00	10.80	7.30				

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Structure Retrofit			42.00	0.00	10.80	7.30				
Exterior Finishes			0.00	0.00	10.80	7.30				
Interior Finishes			0.00	0.00	10.80	7.30				

3.1 Mitigation Measures Construction

3.2 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Marin NCLH Operations - Marin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Utilities - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Marin NCLH Operations - Marin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Utilities - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Marin NCLH Operations - Marin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Utilities - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Marin NCLH Operations - Marin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Structure Retrofit - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Structure Retrofit - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Exterior Finishes - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Marin NCLH Operations - Marin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Exterior Finishes - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Exterior Finishes - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Interior Finishes - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Marin NCLH Operations - Marin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Interior Finishes - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Interior Finishes - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Marin NCLH Operations - Marin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.4336	5.7211	59.7035	0.1314	15.3239	0.0880	15.4119	4.0775	0.0819	4.1594		13,344.7455	13,344.7455	0.7890	0.5336	13,523.4772
Unmitigated	7.4336	5.7211	59.7035	0.1314	15.3239	0.0880	15.4119	4.0775	0.0819	4.1594		13,344.7455	13,344.7455	0.7890	0.5336	13,523.4772

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	1,814.95	1,814.95	1814.95	4,337,272	4,337,272
Apartments Mid Rise	1,280.50	1,280.50	1280.50	2,957,452	2,957,452
Day-Care Center	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	3,095.45	3,095.45	3,095.45	7,294,724	7,294,724

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Day-Care Center	9.50	7.30	7.30	12.70	82.30	5.00	28	58	14
Health Club	9.50	7.30	7.30	16.90	64.10	19.00	52	39	9
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.544281	0.061644	0.199793	0.122945	0.023341	0.005632	0.006920	0.003727	0.000656	0.000390	0.027229	0.000725	0.002716
Apartments Mid Rise	0.544281	0.061644	0.199793	0.122945	0.023341	0.005632	0.006920	0.003727	0.000656	0.000390	0.027229	0.000725	0.002716
Day-Care Center	0.544281	0.061644	0.199793	0.122945	0.023341	0.005632	0.006920	0.003727	0.000656	0.000390	0.027229	0.000725	0.002716
Health Club	0.544281	0.061644	0.199793	0.122945	0.023341	0.005632	0.006920	0.003727	0.000656	0.000390	0.027229	0.000725	0.002716
Single Family Housing	0.544281	0.061644	0.199793	0.122945	0.023341	0.005632	0.006920	0.003727	0.000656	0.000390	0.027229	0.000725	0.002716

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1163	1.0066	0.5140	6.3500e-003		0.0804	0.0804		0.0804	0.0804		1,269.2025	1,269.2025	0.0243	0.0233	1,276.7448
NaturalGas Unmitigated	0.1163	1.0066	0.5140	6.3500e-003		0.0804	0.0804		0.0804	0.0804		1,269.2025	1,269.2025	0.0243	0.0233	1,276.7448

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	7517.75	0.0811	0.6928	0.2948	4.4200e-003		0.0560	0.0560		0.0560	0.0560		884.4410	884.4410	0.0170	0.0162	889.6968
Day-Care Center	134.137	1.4500e-003	0.0132	0.0111	8.0000e-005		1.0000e-003	1.0000e-003		1.0000e-003	1.0000e-003		15.7808	15.7808	3.0000e-004	2.9000e-004	15.8746
General Office Building	828.959	8.9400e-003	0.0813	0.0683	4.9000e-004		6.1800e-003	6.1800e-003		6.1800e-003	6.1800e-003		97.5246	97.5246	1.8700e-003	1.7900e-003	98.1041
Health Club	1144.36	0.0123	0.1122	0.0942	6.7000e-004		8.5300e-003	8.5300e-003		8.5300e-003	8.5300e-003		134.6301	134.6301	2.5800e-003	2.4700e-003	135.4302
Single Family Housing	1163.02	0.0125	0.1072	0.0456	6.8000e-004		8.6700e-003	8.6700e-003		8.6700e-003	8.6700e-003		136.8260	136.8260	2.6200e-003	2.5100e-003	137.6391
Total		**0.1163**	**1.0066**	**0.5140**	**6.3400e-003**		**0.0804**	**0.0804**		**0.0804**	**0.0804**		**1,269.2025**	**1,269.2025**	**0.0243**	**0.0233**	**1,276.7448**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	7.51775	0.0811	0.6928	0.2948	4.4200e-003		0.0560	0.0560		0.0560	0.0560		884.4410	884.4410	0.0170	0.0162	889.6968
Day-Care Center	0.134137	1.4500e-003	0.0132	0.0111	8.0000e-005		1.0000e-003	1.0000e-003		1.0000e-003	1.0000e-003		15.7808	15.7808	3.0000e-004	2.9000e-004	15.8746
General Office Building	0.828959	8.9400e-003	0.0813	0.0683	4.9000e-004		6.1800e-003	6.1800e-003		6.1800e-003	6.1800e-003		97.5246	97.5246	1.8700e-003	1.7900e-003	98.1041
Health Club	1.14436	0.0123	0.1122	0.0942	6.7000e-004		8.5300e-003	8.5300e-003		8.5300e-003	8.5300e-003		134.6301	134.6301	2.5800e-003	2.4700e-003	135.4302
Single Family Housing	1.16302	0.0125	0.1072	0.0456	6.8000e-004		8.6700e-003	8.6700e-003		8.6700e-003	8.6700e-003		136.8260	136.8260	2.6200e-003	2.5100e-003	137.6391
Total		**0.1163**	**1.0066**	**0.5140**	**6.3400e-003**		**0.0804**	**0.0804**		**0.0804**	**0.0804**		**1,269.2025**	**1,269.2025**	**0.0243**	**0.0233**	**1,276.7448**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

Marin NCLH Operations - Marin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	10.6614	2.4765	28.6159	0.0152		0.3281	0.3281		0.3281	0.3281	0.0000	2,804.1332	2,804.1332	0.1006	0.0505	2,821.6955
Unmitigated	155.4680	3.4934	219.0316	0.3694		27.3081	27.3081		27.3081	27.3081	2,944.6868	1,322.2744	4,266.9611	4.0479	0.2081	4,430.1755

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.4323					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.1448					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	145.0590	3.1743	191.3338	0.3680		27.1544	27.1544		27.1544	27.1544	2,944.6868	1,272.3529	4,217.0397	4.0001	0.2081	4,379.0586
Landscaping	0.8318	0.3190	27.6978	1.4600e-003		0.1537	0.1537		0.1537	0.1537		49.9214	49.9214	0.0478		51.1169
Total	**155.4680**	**3.4934**	**219.0317**	**0.3694**		**27.3081**	**27.3081**		**27.3081**	**27.3081**	**2,944.6868**	**1,322.2744**	**4,266.9611**	**4.0479**	**0.2081**	**4,430.1755**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.4323					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.1448					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.2525	2.1575	0.9181	0.0138		0.1744	0.1744		0.1744	0.1744	0.0000	2,754.2118	2,754.2118	0.0528	0.0505	2,770.5787
Landscaping	0.8318	0.3190	27.6978	1.4600e-003		0.1537	0.1537		0.1537	0.1537		49.9214	49.9214	0.0478		51.1169
Total	**10.6614**	**2.4765**	**28.6159**	**0.0152**		**0.3281**	**0.3281**		**0.3281**	**0.3281**	**0.0000**	**2,804.1332**	**2,804.1332**	**0.1006**	**0.0505**	**2,821.6955**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Nar	North Coast Land Holding Mobile Emissions
Operationa	2027
Lead Agency	
Land Use S	Project/site
Analysis Le	County
Windspeed	3.9
Precipitatio	34.8
Location	37.89106883221244, -122.50867146251531
County	Marin
City	Unincorporated
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	903
EDFZ	2
Electric Util	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Versio	2022.1.1.22

1.2. Land Use Types

Land Use S	Size	Unit	Lot Acreage	Building Are	Landscape	Special Lan	Population	Description
General Off	15.8	1000sqft	0.36	15800				
Day-Care C	3	1000sqft	0.07	3000				
Health Clul	17	1000sqft	0.39	17000				
Apartments	325	Dwelling Ur	8.55	325000			930	
Single Fam	11	Dwelling Ur	3.57	19800	128841		31	

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Un/Mit.	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Unmit.	9.56	8.89	5.77	66.2	0.16	0.1	15.3	15.4	0.1	3.86	3.96	0	16290	16290	0.69	0.59	53.3	16537
Daily, Winter (Max)																		
Unmit.	9.29	8.58	6.81	64.5	0.15	0.1	15.3	15.4	0.1	3.86	3.96	0	15402	15402	0.78	0.66	1.38	15619
Average Daily (Max)																		
Unmit.	9.16	8.46	6.44	62	0.15	0.1	14.9	15	0.1	3.78	3.88	0	15451	15451	0.75	0.63	23	15682
Annual (Max)																		
Unmit.	1.67	1.54	1.18	11.3	0.03	0.02	2.72	2.74	0.02	0.69	0.71	0	2558	2558	0.12	0.11	3.81	2596

2.5. Operations Emissions by Sector, Unmitigated

Sector	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Mobile	9.56	8.89	5.77	66.2	0.16	0.1	15.3	15.4	0.1	3.86	3.96		16290	16290	0.69	0.59	53.3	16537

Area	0	0	0	0	0	0		0	0		0	0	0	0	0	0	0
Energy	0	0	0	0	0	0		0	0		0		0	0	0	0	0
Water												0	0	0	0	0	0
Waste												0	0	0	0	0	0
Total	9.56	8.89	5.77	66.2	0.16	0.1	15.3	15.4	0.1	3.86	3.96	0	16290	16290	0.69	0.59	53.3	16537
Daily, Winter (Max)																		
Mobile	9.29	8.58	6.81	64.5	0.15	0.1	15.3	15.4	0.1	3.86	3.96		15402	15402	0.78	0.66	1.38	15619
Area	0	0	0	0	0	0		0	0		0	0	0	0	0	0		0
Energy	0	0	0	0	0	0		0	0		0		0	0	0	0		0
Water												0	0	0	0	0		0
Waste												0	0	0	0	0		0
Total	9.29	8.58	6.81	64.5	0.15	0.1	15.3	15.4	0.1	3.86	3.96	0	15402	15402	0.78	0.66	1.38	15619
Average Daily																		
Mobile	9.16	8.46	6.44	62	0.15	0.1	14.9	15	0.1	3.78	3.88		15451	15451	0.75	0.63	23	15682
Area	0	0	0	0	0	0		0	0		0	0	0	0	0	0		0
Energy	0	0	0	0	0	0		0	0		0		0	0	0	0		0
Water												0	0	0	0	0		0
Waste												0	0	0	0	0		0
Total	9.16	8.46	6.44	62	0.15	0.1	14.9	15	0.1	3.78	3.88	0	15451	15451	0.75	0.63	23	15682
Annual																		
Mobile	1.67	1.54	1.18	11.3	0.03	0.02	2.72	2.74	0.02	0.69	0.71		2558	2558	0.12	0.11	3.81	2596
Area	0	0	0	0	0	0		0	0		0	0	0	0	0	0		0
Energy	0	0	0	0	0	0		0	0		0		0	0	0	0		0
Water												0	0	0	0	0		0
Waste												0	0	0	0	0		0
Total	1.67	1.54	1.18	11.3	0.03	0.02	2.72	2.74	0.02	0.69	0.71	0	2558	2558	0.12	0.11	3.81	2596

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Land Use	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
General Office Building													0	0	0	0		0
Day-Care Center													0	0	0	0		0
Health Club													0	0	0	0		0
Apartments Mid Rise													0	0	0	0		0
Single Family Housing													0	0	0	0		0
Total													0	0	0	0		0
Daily, Winter (Max)																		
General Office Building													0	0	0	0		0
Day-Care Center													0	0	0	0		0
Health Club													0	0	0	0		0
Apartments Mid Rise													0	0	0	0		0
Single Family Housing													0	0	0	0		0

Total													0	0	0	0	0
Annual																	
General Office Building													0	0	0	0	0
Day-Care Center													0	0	0	0	0
Health Club													0	0	0	0	0
Apartments Mid Rise													0	0	0	0	0
Single Family Housing													0	0	0	0	0
Total													0	0	0	0	0

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Land Use	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
General Offi	0	0	0	0	0	0		0	0		0			0	0	0	0	0
Day-Care C	0	0	0	0	0	0		0	0		0			0	0	0	0	0
Health Clul	0	0	0	0	0	0		0	0		0			0	0	0	0	0
Apartments	0	0	0	0	0	0		0	0		0			0	0	0	0	0
Single Fam	0	0	0	0	0	0		0	0		0			0	0	0	0	0
Total	0	0	0	0	0	0		0	0		0			0	0	0	0	0
Daily, Winter (Max)																		
General Offi	0	0	0	0	0	0		0	0		0			0	0	0	0	0
Day-Care C	0	0	0	0	0	0		0	0		0			0	0	0	0	0
Health Clul	0	0	0	0	0	0		0	0		0			0	0	0	0	0
Apartments	0	0	0	0	0	0		0	0		0			0	0	0	0	0
Single Fam	0	0	0	0	0	0		0	0		0			0	0	0	0	0
Total	0	0	0	0	0	0		0	0		0			0	0	0	0	0
Annual																		
General Offi	0	0	0	0	0	0		0	0		0			0	0	0	0	0
Day-Care C	0	0	0	0	0	0		0	0		0			0	0	0	0	0
Health Clul	0	0	0	0	0	0		0	0		0			0	0	0	0	0
Apartments	0	0	0	0	0	0		0	0		0			0	0	0	0	0
Single Fam	0	0	0	0	0	0		0	0		0			0	0	0	0	0
Total	0	0	0	0	0	0		0	0		0			0	0	0	0	0

4.3. Area Emissions by Source

4.3.1. Unmitigated

Source	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Hearths	0	0	0	0	0	0		0	0		0		0	0	0	0	0	0
Consumer Products			0															
Architectural Coatings			0															
Total	0	0	0	0	0	0		0	0		0		0	0	0	0	0	0
Daily, Winter (Max)																		
Hearths	0	0	0	0	0	0		0	0		0		0	0	0	0	0	0
Consumer Products			0															
Architectural Coatings			0															
Total	0	0	0	0	0	0		0	0		0		0	0	0	0	0	0
Annual																		
Hearths	0	0	0	0	0	0		0	0		0		0	0	0	0	0	0

Consumer Products		0																
Architectural Coatings		0																
Total	0	0	0	0	0	0		0	0		0	0	0	0	0	0		0

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Land Use	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
General Office Building													0	0	0	0	0	0
Day-Care Center													0	0	0	0	0	0
Health Club													0	0	0	0	0	0
Apartments Mid Rise													0	0	0	0	0	0
Single Family Housing													0	0	0	0	0	0
Total													0	0	0	0	0	0
Daily, Winter (Max)																		
General Office Building													0	0	0	0	0	0
Day-Care Center													0	0	0	0	0	0
Health Club													0	0	0	0	0	0
Apartments Mid Rise													0	0	0	0	0	0
Single Family Housing													0	0	0	0	0	0
Total													0	0	0	0	0	0
Annual																		
General Office Building													0	0	0	0	0	0
Day-Care Center													0	0	0	0	0	0
Health Club													0	0	0	0	0	0
Apartments Mid Rise													0	0	0	0	0	0
Single Family Housing													0	0	0	0	0	0
Total													0	0	0	0	0	0

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Land Use	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
General Office Building													0	0	0	0	0	0
Day-Care Center													0	0	0	0	0	0
Health Club													0	0	0	0	0	0
Apartments Mid Rise													0	0	0	0	0	0
Single Family Housing													0	0	0	0	0	0
Total													0	0	0	0	0	0
Daily, Winter (Max)																		
General Office Building													0	0	0	0	0	0
Day-Care Center													0	0	0	0	0	0
Health Club													0	0	0	0	0	0
Apartments Mid Rise													0	0	0	0	0	0
Single Family Housing													0	0	0	0	0	0
Total													0	0	0	0	0	0
Annual																		
General Office Building													0	0	0	0	0	0

Day-Care Center												0	0	0	0	0	0
Health Club												0	0	0	0	0	0
Apartments Mid Rise												0	0	0	0	0	0
Single Family Housing												0	0	0	0	0	0
Total												0	0	0	0	0	0

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Land Use	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Total																		
Daily, Winter (Max)																		
Total																		
Annual																		
Total																		

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Equipment	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Total																		
Daily, Winter (Max)																		
Total																		
Annual																		
Total																		

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Equipment	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Total																		
Daily, Winter (Max)																		
Total																		
Annual																		
Total																		

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Equipment	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Total																		
Daily, Winter (Max)																		
Total																		
Annual																		
Total																		

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Vegetation	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Total																		
Daily, Winter (Max)																		
Total																		
Annual																		
Total																		

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Land Use	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Total																		
Daily, Winter (Max)																		
Total																		
Annual																		
Total																		

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Species	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily, Summer (Max)																		
Avoided																		
Subtotal																		
Sequestered																		
Subtotal																		
Removed																		
Subtotal																		
Daily, Winter (Max)																		
Avoided																		
Subtotal																		
Sequestered																		
Subtotal																		
Removed																		
Subtotal																		
Annual																		
Avoided																		
Subtotal																		
Sequestered																		
Subtotal																		
Removed																		
Subtotal																		

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use T	Trips/Week	Trips/Satur	Trips/Sunda	Trips/Year	VMT/Week	VMT/Saturc	VMT/Sunda	VMT/Year
Total all Lai	2608	2608	2608	951920	21699	21699	21699	7920000

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	
Wood Firep	0
Gas Firepla	0
Propane Fir	0
Electric Fire	0
No Fireplac	159
Convention	0
Catalytic W	0
Non-Cataly	0
Pellet Wooc	0
Single Family Housing	
Wood Firep	0
Gas Firepla	0
Propane Fir	0
Electric Fire	0
No Fireplac	9
Convention	0
Catalytic W	0
Non-Cataly	0
Pellet Wooc	0

5.10.2. Architectural Coatings

Residential	Residential	Non-Reside	Non-Reside	Parking Area Coated (sq ft)
698220	232740	53700	17900	

5.10.3. Landscape Equipment

Equipment	Fuel Type	Number Pe	Hours per D	Hours per Y	Horsepowe	Load Factor

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Land Use	Electricity (	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Offi	0	204	0.033	0.004	0
Day-Care C	0	204	0.033	0.004	0
Health Clul	0	204	0.033	0.004	0
Apartments	0	204	0.033	0.004	0
Single Fam	0	204	0.033	0.004	0

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Wat	Outdoor Water (gal/year)
General Offi	0	0
Day-Care C	0	0
Health Clul	0	0

Apartments	0	0
Single Fam	0	0

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/	Cogeneration (kWh/year)
General Off	0	
Day-Care C	0	
Health Clul	0	
Apartments	0	
Single Fam	0	

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use T	Equipment	Refrigerant	GWP	Quantity (k	Operations	Service Lea	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment	Fuel Type	Engine Tier	Number pe	Hours Per D	Horsepowe	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment	Fuel Type	Number pe	Hours per D	Hours per Y	Horsepowe	Load Factor

5.16.2. Process Boilers

Equipment	Fuel Type	Number	Boiler Ratin	Daily Heat I	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation	Vegetation	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass C	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity S	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Ha	Result for P	Unit
Temperatur	10.3	annual days of extreme heat
Extreme Pre	13.1	annual days with precipitation above 20 mm
Sea Level Rise		meters of inundation depth
Wildfire	6.15	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Ha	Exposure S	Sensitivity S	Adaptive Ca	Vulnerability Score
Temperatur	N/A	N/A	N/A	N/A
Extreme Pre	4	0	0	N/A
Sea Level R	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack I	N/A	N/A	N/A	N/A
Air Quality I	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Ha	Exposure S	Sensitivity S	Adaptive Ca	Vulnerability Score
Temperatur	N/A	N/A	N/A	N/A
Extreme Pre	4	1	1	4
Sea Level R	1	1	1	2

Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack I	N/A	N/A	N/A	N/A
Air Quality I	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	
AQ-Ozone	6.38
AQ-PM	25.8
AQ-DPM	28.4
Drinking Wa	7.43
Lead Risk H	44.9
Pesticides	0
Toxic Relea	55.9
Traffic	82.6
Effect Indicators	
CleanUp Si	0
Groundwat	28.3
Haz Waste	7.35
Impaired W	83
Solid Waste	0
Sensitive Population	
Asthma	3.41
Cardio-vas	5.36
Low Birth W	19.8
Socioeconomic Factor Indicators	
Education	5.1
Housing	64.8
Linguistic	27.3
Poverty	17.5
Unemployn	32.3

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	
Above Pove	66.5854
Employed	43.12845

Median HI	74.92622
Education	
Bachelor's	96.52252
High schoo	100
Preschool e	89.42641
Transportation	
Auto Acces	45.25857
Active com	83.652
Social	
2-parent hc	62.63313
Voting	99.28141
Neighborhood	
Alcohol ava	71.1921
Park acces	44.77095
Retail dens	35.91685
Supermark	47.86347
Tree canop	95.95791
Housing	
Homeowne	31.64378
Housing ha	41.43462
Low-inc ho	82.47145
Low-inc rer	40.13859
Uncrowded	64.3013
Health Outcomes	
Insured adu	74.51559
Arthritis	0
Asthma ER	91
High Blood	0
Cancer (ex	0
Asthma	0
Coronary H	0
Chronic Ob	0
Diagnosed	0
Life Expect	88
Cognitively	91
Physically	93
Heart Attac	92
Mental Hea	0
Chronic Kic	0
Obesity	0
Pedestrian	20
Physical He	0
Stroke	0
Health Risk Behaviors	
Binge Drink	0
Current Sm	0
No Leisure	0
Climate Change Exposures	

Wildfire Ris	0
SLR Inunda	34
Children	65
Elderly	23
English Spe	75
Foreign-bor	30
Outdoor W	83
Climate Change Adaptive Capacity	
Impervious	69
Traffic Den	83
Traffic Acce	62
Other Indices	
Hardship	8.2
Other Decision Support	
2016 Votin	97

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroS	7
Healthy Pla	89
Project Loc	No
Project Loc	No
Project Loc	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

Measure Tit	Co-Benefits Achieved

7.5. Evaluation Scorecard

Category	Number of .	Total Points	Max Possib	Weighted Score

7.6. Health & Equity Custom Measures

Measure Tit	Sponsor

8. User Changes to Default Data

Screen	Justification
Land Use	Based on Previous Caleemod run
Operations	only mobile run, rest of operations zeroed out.
Operations	only mobile run, rest of operations zeroed out.
Operations	only mobile run, rest of operations zeroed out.
Operations	only mobile run, rest of operations zeroed out.
Operations	only mobile run, rest of operations zeroed out.
Operations	only mobile run, rest of operations zeroed out.
Operations	only mobile run, rest of operations zeroed out.

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Date: February 1, 2023

Subject: Health Risk Assessment for the Marin NCLH Project

1 INTRODUCTION

This health risk assessment (HRA) evaluates the potential health risks associated with redevelopment the Golden Gate Baptist Theological Seminary property on the Strawberry Peninsula in unincorporated Marin County. The proposed development would include renovation of an existing academic campus, relocation of an existing daycare center, construction of a new fitness center, construction of a new residential care facility, upgrades to existing housing and construction of new housing, retention and access improvements to existing open space and recreation areas, and creation of new bicycle and pedestrian paths within the property (project).

The focus of this HRA is to evaluate the exposure of nearby residential receptors to construction related toxic air contaminants (TACs), primarily diesel particulate matter (diesel PM), from diesel-powered equipment and vehicles used during construction and the hauling of materials and emissions of fine particulate matter ($PM_{2.5}$). This study was conducted in accordance with BAAQMD's *Recommended Methods for Screening and Modeling Local Risks and Hazards* (*Recommended Methods*) (BAAQMD 2020). Additionally, in preparing this HRA, procedures detailed in OEHHA's *Air Toxic Hot Spot Program Guidance Manual for Preparation of Health and Risk Assessments* (OEHHA 2015) were followed to quantify the potential health risks experienced by nearby receptors due to project-generated construction emissions. This report discusses the analysis methodology, thresholds of significance used, and the results of the HRA.

2 INVENTORY OF TOXIC AIR CONTAMINANT EMISSIONS

Construction-related emissions of diesel PM were determined by conducting detailed construction emissions modeling for the project using the Bay Area Air Quality Management District (BAAQMD)-approved California Emissions Estimator Model (CalEEMod), project-specific details (e.g., construction phasing, equipment lists, excavation estimates), and model defaults where project-specific information was not available. Generally, emissions were quantified for all phases of project construction that is anticipated to occur across the eight planning areas of the project site for the entire duration of project buildout (i.e., four years). Mass emissions were averaged over the anticipated construction duration, in accordance with BAAQMD's guidance and consistent with their adopted average daily mass emissions thresholds. Outputs from the mass emissions calculations conducted with CalEEMod were used to conduct the HRA. Specific inputs and methods are explained in further detail below.

Construction activities for the project would include demolition, grading, building construction, paving and landscaping. Construction is assumed to begin no sooner than 2023 and would be completed in 4 years; thus, offroad exhaust emissions factors are considered conservative as they were based on the earliest

possible year construction could occur. $PM_{2.5}$ exhaust emissions would occur from diesel-powered heavy-duty construction equipment, diesel generators, and diesel trucks used during construction. To estimate risk, average daily and annual construction emissions of PM_{10}, used as a proxy for diesel PM, were computed.

The diesel PM emissions generated by off-site vehicle traffic (e.g., vendor and off-hauling trips) were modeled along one haul route terminating at the project site (see Section 3.3 for haul route details). According to the information provided by the applicant, there would be a total of approximately 340 worker trips during a typical day of construction. The applicant also provided a proposed construction equipment inventory that would be used during the construction at different areas within the project site. Heavy-duty equipment use would occur in areas where demolition, grading, and new construction would occur. Emissions estimates from construction equipment and on-road truck trips are shown in Attachment A. In summary, the sources modeled for this construction HRA were:

- Heavy-duty construction equipment exhaust diesel PM emissions as an array of adjacent volume sources;
- Construction worker on-road emissions of diesel PM during daily commute (included in on-site emissions) as adjacent line-volume sources.
- Heavy-duty off-haul truck diesel PM emissions as adjacent line-volume sources
- Fugitive dust emissions associated with onsite construction activity and travel on offsite haul routes.

3 AIR DISPERSION MODELING

3.1 APPROACH

To determine health risk and pollutant concentrations at specific locations (i.e., receptors), first, air dispersion modeling was conducted using site-specific parameters (e.g., terrain, meteorological data), and then risk calculations were conducted. Dispersion modeling was conducted using CARB's approved American Meteorological Society/Environmental Protection Agency Regulatory Model Improvement Committee modeling system (AERMOD) Version 19191, with a unit emission rate of 1 gram per second (g/s) for all modeled sources. This approach is used so that resulting ground-level concentrations can be multiplied by actual emission rates for various scenarios (e.g., unmitigated, mitigated) without running AERMOD multiple times.

Then, using the ground-level concentrations from the AERMOD run at each receptor location in combination with emission estimates for $PM_{2.5}$, the Hotspots Analysis and Reporting Program Version 2.0.3 Version 2.0.3 (ADMRT 19121), or HARP2 software was used to estimate cancer, non-cancer health risk levels, and $PM_{2.5}$ concentrations. The modeling included all standard regulatory default options, including the use of urban dispersion parameters and local terrain. Terrain in the project vicinity is generally flat.

Nearby land uses include many multi-story and variable-size buildings, which results in urban flow patterns that are likely influenced by recirculation and channeling in urban canyons. The urban dispersion modeling parameters account for such patterns. The urban heat island effect, which results from surface heating of paved and built-up environment, is likely prevalent in some areas surrounding the project site, which leads to longer periods of mixing and generally lower predicted air concentrations. AERMOD allows the user to model urban heat island impacts by selecting urban land use option. The project area fits the definition of

an urban area; thus, this land use option was used in the AERMOD dispersion runs to estimate air pollutant concentrations.

3.2 AERMOD MODEL CONFIGURATION

The following input parameters were used in the model run:

- Projected Coordinate System: Universal Transverse Mercator (UTM) zone 10;
- Geographic Datum: World Geodetic System (WGS) of 1984;
- Urban land use based on AERMOD's Land Use Procedure based on the level of development within a 3-kilometer (km) radius of the project site;
- Period (i.e., annual) averaging of concentrations for construction activity;
- Unit emission rate of 1 g/s for all sources; and
- CARB's Digital Elevation Model Files for terrain data.

3.3 INPUTS AND ASSUMPTIONS

3.3.1 Meteorological Data

Pre-processed meteorological data from 2015-2017 collected at the Chevron Tower were obtained from BAAQMD. The Chevron Tower is the nearest and; therefore, most representative, meteorological station for the project site. The wind primarily blows from the South to North. Dispersion modeling applied a time-averaged, simplified representation of turbulent, atmospheric transport to approximate how pollutants are carried, mixed, dispersed, and diluted by the local winds.

3.3.2 Receptor Grid

A receptor grid was placed out to 4,900 meters (m) by 4,500 m from the project site boundary to encompass nearby residential and commercial land uses. The grid was placed with 25 m spacing between receptors for the first 200 m, then 50 m spacing between 200 m to 500 m and 100 m spacing from 500 m to 2000 m. Discrete receptors were removed from the project site. All receptors were given a flagpole receptor height of 1.8 m to represent average breathing height per OEHHA guidance (OEHHA 2015:4-22). All receptor points are shown in Attachment A.

3.3.3 Source Type and Dimensions

For the project site where construction activities would occur, construction emission sources (i.e., the use of heavy-duty equipment on site and fugitive dust) were modeled as an array of adjacent volume sources. Each volume source was assumed to have 10 m sides, an internal lateral dimension of 2.33 m, and an internal vertical dimension of 1 m, the latter two attributes were calculated from the length of the volume source side. The volume sources were grouped based on the construction areas defined in the project description. Each of these groups had combined emission rate of 1 gram per second.

One haul route was modeled as a line source to represent a series of volume sources. The line sources represent the haul truck emissions traveling to and from the site. These line sources were assumed to have an adjacent configuration of volume sources spaced at 10-meter intervals, with a 2.55 m plume height, 13 m plume width, and a 1.27 m release height. These were calculated based on the assumption that trucks traveling on these routes would have an average height of 3 m (10 feet) and width of 2.4 m (8 feet). The length of haul route was approximately one mile long, was modeled from the northwest project site entrance on Seminary Drive joining the US-101 freeway. Source locations and haul routes are shown in Attachment A.

4 HEALTH RISK CALCULATIONS

4.1 CANCER AND NON-CANCER RISK

To analyze impacts to sensitive receptors, the resulting pollutant concentrations from the AERMOD dispersion analysis were multiplied by the emission rates to obtain risk estimates. CARB developed HARP2 as a tool to implement risk assessments and incorporates requirements from OEHHA's *Air Toxics Hot Spot Program Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2015).

Total annual tons of exhaust PM_{10} emissions resulting from project construction were converted to pounds per year and pounds per day, which were then input into HARP2. The estimates of potential residential cancer risk were prepared in accordance with OEHHA Guidance. The cancer risk was estimated for the 4-year construction period occurring from 2023 to 2027. Risk parameters for cancer and non-cancer scenarios are presented in Table 1, below.

Table 1 Risk Parameters for Cancer and Non-Cancer Risk from Construction Emissions[1]

Risk Parameters	Residential Receptors
Analysis Type	Cancer Risk and Chronic Risk (Non-cancer)
Receptor Type	Residential
Exposure Duration	4 years
Starting Age	0 years
Intake Rate Percentile	OEHHA Derived Method
Risk Pathways Evaluated	Minimum Residential Pathways
Deposition Rate	0.05 m/s
FAH	Off
Climate	Mixed

[1] Analysis was prepared consistent with OEHHA Guidance (OEHHA 2015).

Notes: OEHHA = Office of Environmental Health Hazard Assessment; m/s = meters per second; FAH = fraction of time at home

Source: Prepared by Ascent Environmental, Inc., in 2022

4.2 ANNUAL AVERAGE $PM_{2.5}$ CONCENTRATIONS

In addition to cancer and non-cancer health risks resulting from exposure to diesel PM emissions, potential impacts from fugitive $PM_{2.5}$ construction emissions were evaluated. The same basic modeling approach

that was used for assessing health risks was used in the modeling of $PM_{2.5}$ concentrations. Both exhaust and fugitive $PM_{2.5}$ emissions were included. Dispersion modeling of $PM_{2.5}$ using the AERMOD model was conducted in the same manner as the TAC modeling. The model predicted the maximum annual average $PM_{2.5}$ concentration (i.e., combined exhaust and fugitive $PM_{2.5}$ emissions).

5 HEALTH RISK CEQA THRESHOLDS OF SIGNIFICANCE

According to BAAQMD, a project's impact on health risks would be considered significant under the California Environmental Quality Act (CEQA) if the project-related increase in risks would exceed the following thresholds shown in Table 2. Results of this HRA were compared to the BAAQMD-adopted thresholds of significance.

Table 2 Significant Health Risk Levels

	Significance Risk Threshold
Maximum Incremental Cancer Risk[1]	10.0 chances in a million
Total Chronic Non-Cancer Health Hazard Index[2]	1.0
Incremental Annual Average $PM_{2.5}$ Concentration[3]	Ambient $PM_{2.5}$ increase: >0.3 µg/m^3

1. Maximum Incremental Cancer Risk is the maximum lifetime excess cancer risk estimate (per million) at residential or worker receptor (whichever is greater). The maximum estimated risk generally is possible at only one location. All other locations show lower risks. Actual cancer risk would likely be less.
2. Total Chronic Health Hazard Index (HIC) is the sum of the ratios of the average annual exposure level of each compound to the compound's Reference Exposure Level (REL). Actual HIC would likely be less.
3. An incremental increase of greater than 0.3 micrograms per cubic meter (µg/m^3) annual average $PM_{2.5}$ would be a cumulatively considerable contribution

Source: BAAQMD 2017:23

6 RESULTS

6.1 CONSTRUCTION

Based on CalEEMod model defaults, air dispersion modeling, and risk calculations discussed above, project-generated diesel PM emissions would result in a point of maximum impact (PMI) of an increase in 134 chances in a million for cancer risk and a non-cancer chronic risk hazard index of 3.03 x 10^{-2}. The nearest residential receptor or the maximally exposed individual resident (MEIR) would be exposed to a cancer risk increase of 48 chances in one million. Table 3 summarizes the cancer PMI and MEIR results under an unmitigated and mitigated scenario. Figure 1 graphically depicts the cancer risk at nearby receptors as colored contours radiating outward from the project site. Considering BAAQMD threshold of significance of 10 chances in a million for cancer risk and a non-cancer health index threshold of less than 1.0, the project would result in the exposure of nearby residential receptors to TAC-related health risks that exceed thresholds of significance for cancer risk but not chronic risk. Additionally, based on dispersion modeling, the annual average increase in ambient $PM_{2.5}$ concentration in the project vicinity was found to be 2.67 micrograms per cubic meter (µg/m^3), which exceeds the BAAQMD's $PM_{2.5}$ annual average concentration threshold of 0.3 µg/m^3. The unmitigated $PM_{2.5}$ ambient concentration results are depicted graphically in Figure 2.

Table 3 Modeled Cancer Risks from Construction Emissions Sources

Receptor[1]	Unmitigated Scenario Cancer Risk (Chances in a million)	Mitigated Scenario[3] Cancer Risk (Chances in a million)	Easting (m)[2]	Northing (m)[2]
PMI	134	11.25	543416.5	4193376.73
MEIR (On-Site)	48	5.69	543607.77	4193515.85
BAAQMD Significance Threshold	10.0	10.0	N/A	N/A
Threshold Exceeded?	**Yes**	**No**	N/A	N/A

Notes: PMI = point of maximum impact; MEIR = maximally exposed individual resident; N/A = not applicable

1. Receptors selected based on occurrence under Proposed Scenario.

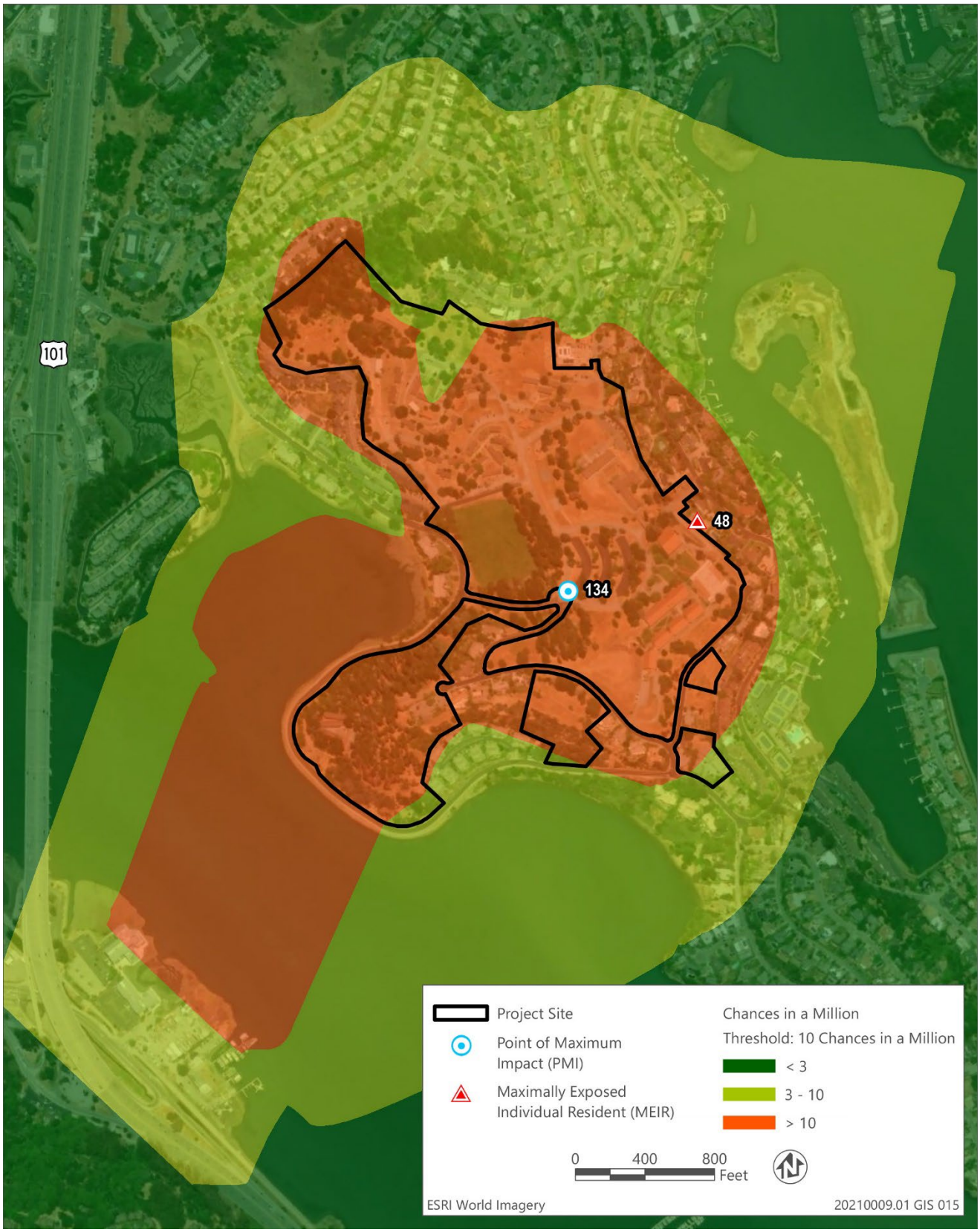
2. Based on Universal Transverse Mercator coordinates.

3. Mitigation applied in the mitigated scenario is described in detail in the Air Quality Chapter of the EIR; however, to briefly summarize here, measures included BAAQMD's dust suppression measures and inclusion of USA EPA Tier 4 engines.

Source: Data modeled by Ascent Environmental, Inc., in 2023

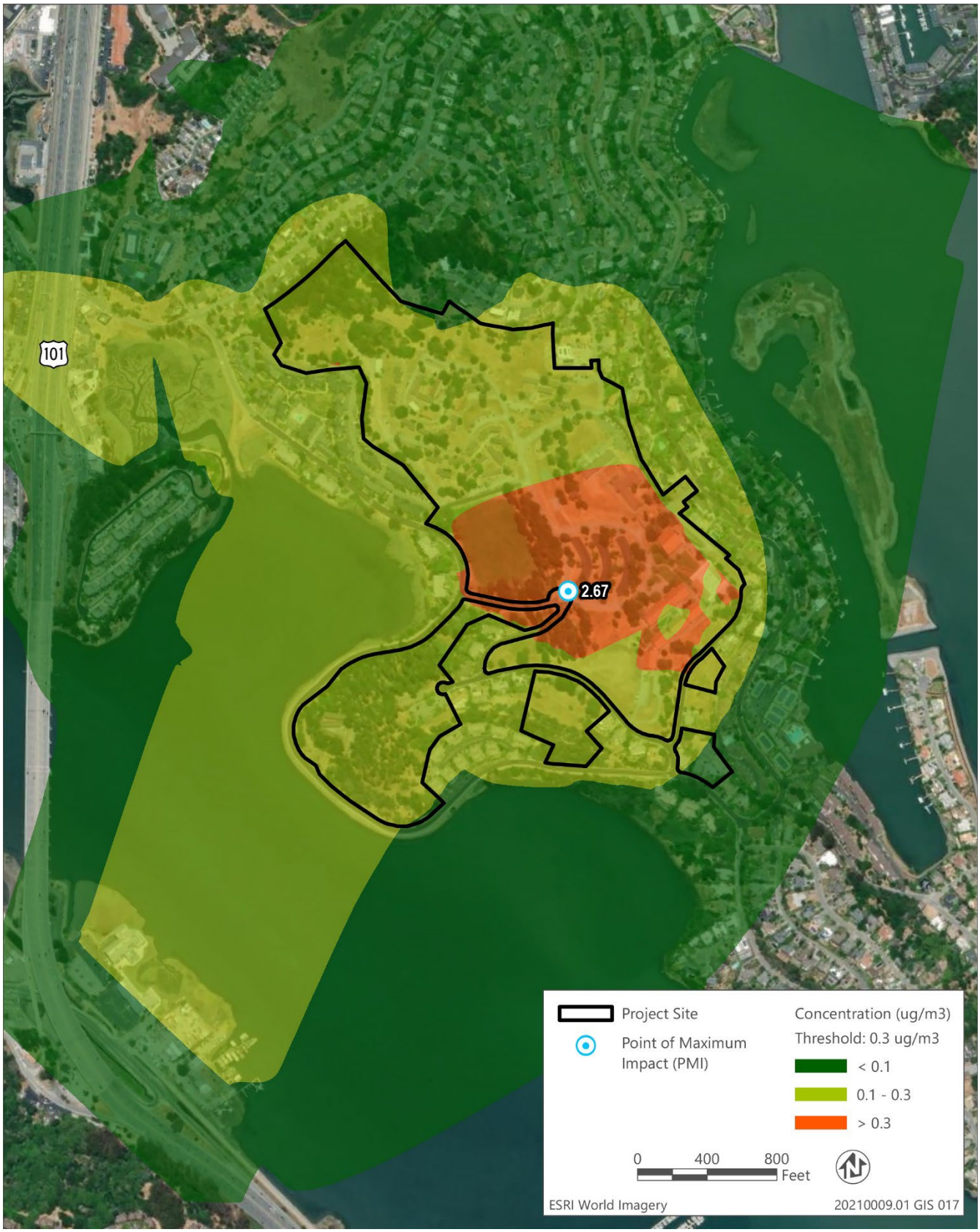
6.1.1 Conclusion

Without exhaust and fugitive dust control measures, construction-generated non-cancer health risks would not exceed BAAQMD thresholds of significance but cancer risk and $PM_{2.5}$ would be exceeded. With dust and exhaust control measures, construction-generated TACs would not expose nearby receptors to significant cancer risk (i.e., 10 chances in one million) or result in ambient $PM_{2.5}$ concentration in excess of the BAAQMD significance threshold of 0.3 µg/m^3.



Source: Developed by Ascent Environmental in 2020

Figure 1 Residential Cancer Risk Contours – Unmitigated Scenario

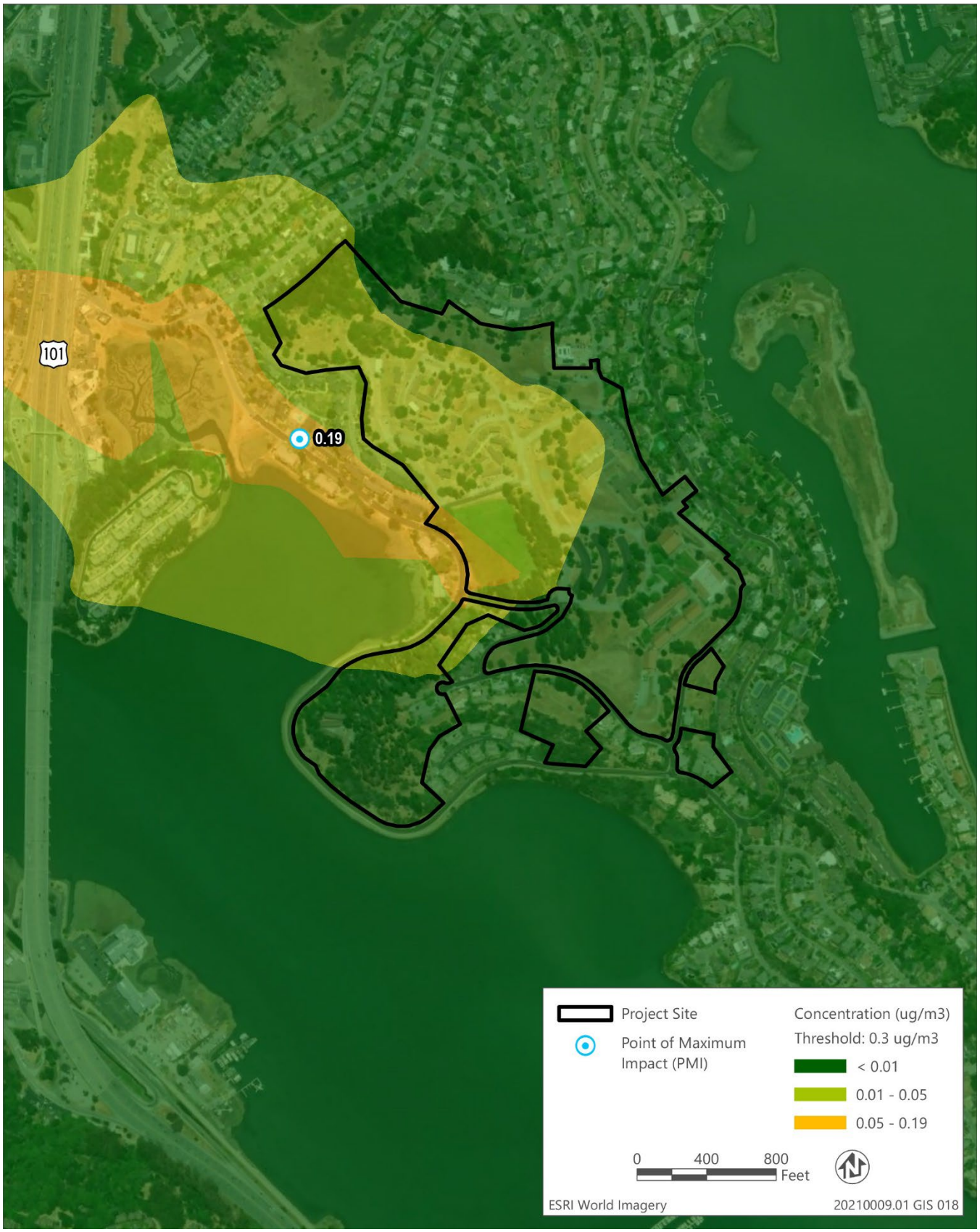


Source: Developed by Ascent Environmental in 2020

Figure 2 Ambient $PM_{2.5}$ Concentration Contours – Unmitigated Scenario

Source: Developed by Ascent Environmental in 2020

Figure 3 Residential Cancer Risk Contours – Mitigated Scenario



Source: Adapted by Ascent Environmental in 2020

Figure 4 Ambient $PM_{2.5}$ Concentration Contours – Mitigated Scenario

7 REFERENCES

BAAQMD. *See* Bay Area Air Quality Management District.

Bay Area Air Quality Management District. 2020 (December). BAAQMD Health Risk Assessment Modeling Protocol. Available: https://www.baaqmd.gov/~/media/files/ab617-community-health/facility-risk-reduction/documents/baaqmd_hra_modeling_protocol-pdf.pdf?la=en. Accessed November 1, 2022.

OEHHA. *See* Office of Environmental Health Hazard Assessment

Office of Environmental Health Hazard Assessment. 2015. *Air Toxics Hot Spots Program. Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments.* Available: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf. Accessed November 27, 2020.

References to Include in CEQA Doc:

CARB 2022a. OFFROAD 2021 v1.0.3 - Emissions Inventory. Available: https://arb.ca.gov/emfac/emissions-inventory/d0bfc739f498386d6e8417fb64d20090225b1c83. Date Accessed: November 4, 2022.
CARB 2022b. EMFAC 2021 v1.0.2 - Emissions Inventory. Available: https://arb.ca.gov/emfac/emissions-inventory/f09022ed91aa097eb2ecff2effa26b846d38ca34. Date Accessed: October 12, 2022.

FYI, the link from the EMFAC and OFFROAD runs (shown here too) links directly to *Show Results* from this Statewide runs.
https://arb.ca.gov/emfac/emissions-inventory/f09022ed91aa097eb2ecff2effa26b846d38ca34
https://arb.ca.gov/emfac/emissions-inventory/d0bfc739f498386d6e8417fb64d20090225b1c83

Methods templace to paste in CEQA doc

Construction

Energy use during construction was estimated using a combination of methods and energy consumption factors from published best available documentation. Fuel consumption was estimated for each piece based on the proposed project construction schedule and duration, equipment activity hours from the California Emissions Estimator Model (CalEEMod) program, and equipment fuel consumption factors from the CARB OFFROAD model (CARB 2022a). Fuel consumption was estimated for haul trucks, delivery trucks, and worker commute using the fuel consumption factors from CARB's EMission FACtors (EMFAC) model for the Statewide vehicle fleet.

Operations

Energy use during operations was estimated using a combination of methods and energy consumption factors from published best available documentation. Fuel consumption for mobile sources was estimated using the fuel consumption factors from CARB's EMission FACtors (EMFAC) model for the Statewide vehicle fleet and VMT data for the project's operations. Utility consumption data, measured in megawatt-hours of electricity and thousand British Thermal Units (BTU) for natural gas, were taken directly from the modeling performed within the California Emissions Estimator Model (CalEEMod) program.

User Input Page

orange cells denote cells for user to input data

Operations

Annual Project VMT	7,294,724	From Traffic Engineer or CalEEMod output
Project Operational Year	2027	
Annual kWh	1,678,638	From PD or CalEEMod output
Annual kBTU	3,937,703	From PD or CalEEMod output

Construction

Construction Start Year	2023

User Needs to paste 3 tables from Caleemod output
These tables are in Section 3.0 Construction Detail

1. Construction Phase
2. Trips and VMT ='USER INPUT'!'USER INPUT'!D:DD59
3. Offroad Equipment

In section **3.0 Construction Detail from CalEEMod output,** paste three tables: the *Construction Phase* , *Trips and VMT* and *Offroad Equipment* tables
Best practice. Save the CalEEMout output as PDF, then, open the PDF in the Adobe App, highlight the tables, right click "copy formatting", then paste below.
See example to the right.
Note that this "copy formatting" function only works in the Adobe app. It does not work if viewing the PDF directly in Chrome or Edge. Download the PDF to your computer, if necessary.

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Description
1	Demolition	Demolition	4/3/2023	5/23/2023	5	37	Chapel Hill & Mission Dr.
2	Site Preparation, Grading and Paving	Site Preparation	5/29/2023	7/21/2023	5	40	Chapel Hill & Mission Dr.
3	Foundation	Grading	7/24/2023	11/10/2023	5	80	Chapel Hill & Mission Dr.
4	Building Construction	Building Construction	11/13/2023	8/16/2024	5	200	Chapel Hill & Mission Dr.
5	Architectural Coating	Architectural Coating	5/20/2024	5/16/2025	5	260	Chapel Hill & Mission Dr.
1	Demolition	Demolition	12/18/2023	2/9/2024	5	40	Existing Admin & Academic Building
2	Utilities	Site Preparation	2/12/2024	3/8/2024	5	20	Existing Admin & Academic Building
3	Structure Retrofit	Building Construction	3/11/2024	6/28/2024	5	80	Existing Admin & Academic Building
4	Exterior Finishes	Paving	7/1/2024	12/27/2024	5	130	Existing Admin & Academic Building
5	Interior Finishes	Architectural Coating	11/4/2024	7/11/2025	5	180	Existing Admin & Academic Building
1	Demolition	Demolition	2/12/2024	3/22/2024	5	30	Existing Café
2	Utilities	Site Preparation	3/25/2024	4/19/2024	5	20	Existing Café
3	Structure Retrofit	Building Construction	4/22/2024	6/28/2024	5	50	Existing Café
4	Exterior Finishes	Paving	7/1/2024	11/15/2024	5	100	Existing Café
5	Interior Finishes	Architectural Coating	10/21/2024	6/27/2025	5	180	Existing Café
1	Demolition	Demolition	45208	45275	5	50	Existing Library
2	Utilities	Site Preparation	45278	45303	5	20	Existing Library
3	Structure Retrofit	Building Construction	45306	45401	5	70	Existing Library
4	Exterior Finishes	Architectural Coating	45404	45583	5	130	Existing Library
5	Interior Finishes	Architectural Coating	45530	45807	5	200	Existing Library
1	Demolition	Demolition	45726	45757	5	24	Fitness & Day Care
2	Utilities	Site Preparation	45751	45793	5	31	Fitness & Day Care
3	Foundations	Building Construction	45796	45849	5	40	Fitness & Day Care
4	Exterior Finishes	Paving	45852	45989	5	100	Fitness & Day Care
5	Interior Finishes	Architectural Coating	45980	46241	5	188	Fitness & Day Care
1	Demolition	Demolition	45579	45688	5	80	Hodge/Shuck & Reed/Storer/Shuck
2	Site Preparation, Grading andPaving	Site Preparation	45649	45702	5	40	Hodge/Shuck & Reed/Storer/Shuck
3	Foundation	Grading	45691	45870	5	130	Hodge/Shuck & Reed/Storer/Shuck
4	Building Construction	Building Construction	45733	46276	5	390	Hodge/Shuck & Reed/Storer/Shuck
5	Architectural Coating	Architectural Coating	45775	46402	5	450	Hodge/Shuck & Reed/Storer/Shuck
1	SURVEY, SITE UTILITIES, GRUB &CLEA	Site Preparation	45796	45905	5	80	Landscaping & Renovation
2	CURB & GUTTER, HARDSCAPE &PAVI	Paving	45908	46129	5	160	Landscaping & Renovation
3	MISC. SITE FURNISHINGS	Site Preparation	46132	46185	5	40	Landscaping & Renovation
4	IRRIGATION & PLANTING	Site Preparation	46195	46597	5	289	Landscaping & Renovation
1	Demolition	Demolition	45656	45681	5	20	New Admin Building
2	Utilities, Grading and Paving	Site Preparation	45684	45723	5	30	New Admin Building
3	Foundation	Grading	45726	45779	5	40	New Admin Building
4	Structure and Exterior Finishes	Building Construction	45852	45989	5	100	New Admin Building
5	Interior Finishes	Architectural Coating	45894	46101	5	150	New Admin Building
1	Demolition	Demolition	45131	45184	5	40	Residential Care Facility
2	Site Preparation, Grading andPaving	Site Preparation	45147	45240	5	68	Residential Care Facility
3	Foundation	Grading	45243	45380	5	100	Residential Care Facility
4	Building Construction	Building Construction	45313	45674	5	260	Residential Care Facility
5	Architectural Coating	Architectural Coating	45565	45982	5	300	Residential Care Facility

1	Demolition	Demolition	45355	45408	5	40	Seminary Point
2	Site Preparation, Grading andPaving	Site Preparation	45411	45464	5	40	Seminary Point
3	Foundation	Grading	45467	45576	5	80	Seminary Point
4	Building Construction	Building Construction	45509	45758	5	180	Seminary Point
5	Architectural Coating	Architectural Coating	45551	45828	5	200	Seminary Point
1	Demolition	Demolition	45243	45296	5	40	Shuck Knoll
2	Site Preparation, Grading andPaving	Site Preparation	45299	45352	5	40	Shuck Knoll
3	Foundation	Grading	45355	45464	5	80	Shuck Knoll
4	Building Construction	Building Construction	45397	45646	5	180	Shuck Knoll
5	Architectural Coating	Architectural Coating	45439	45716	5	200	Shuck Knoll

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	Description
Demolition	10	30	0	6	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Chapel Hill & Mission Dr.
Site Preparation, Grading and Paving	11	30	0	6	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Chapel Hill & Mission Dr.
Foundation	14	50	0	6	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Chapel Hill & Mission Dr.
Building Construction	4	80	15	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Chapel Hill & Mission Dr.
Architectural Coating	2	150	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Chapel Hill & Mission Dr.
Demolition	12	40	0	4	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Admin & Academic Building
Utilities	3	30	0	2	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Admin & Academic Building
Structure Retrofit	6	40	13	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Admin & Academic Building
Exterior Finishes	4	80	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Admin & Academic Building
Interior Finishes	2	120	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Admin & Academic Building
Demolition	6	30	0	2	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Café
Utilities	3	30	0	2	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Café
Structure Retrofit	4	40	2	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Café
Exterior Finishes	4	50	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Café
Interior Finishes	2	60	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Café
Demolition	6	40	0	2	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Library
Utilities	3	30	0	2	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Library
Structure Retrofit	6	40	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Library
Exterior Finishes	4	80	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Library
Interior Finishes	2	80	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Library
Demolition	7	40	0	4	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Fitness & Day Care
Utilities	7	30	0	2	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Fitness & Day Care
Foundations	7	40	3	2	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Fitness & Day Care
Exterior Finishes	4	80	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Fitness & Day Care
Interior Finishes	2	80	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Fitness & Day Care
Demolition	10	30	0	461	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Hodge/Shuck & Reed/Storer/Shuck
Site Preparation, Grading and Paving	11	30	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Hodge/Shuck & Reed/Storer/Shuck
Foundation	14	50	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Hodge/Shuck & Reed/Storer/Shuck
Building Construction	3	80	18	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Hodge/Shuck & Reed/Storer/Shuck
Architectural Coating	2	150	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Hodge/Shuck & Reed/Storer/Shuck
IRRIGATION & PLANTING	4	30	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Landscaping & Renovation
SURVEY, SITE UTILITIES, GRUB &	7	40	0	4	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Landscaping & Renovation
CURB & GUTTER, HARDSCAPE &	9	20	0	4	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Landscaping & Renovation
MISC. SITE FURNISHINGS	3	15	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Landscaping & Renovation
Demolition	7	30	0	4	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	New Admin Building
Utilities, Grading and Paving	8	30	0	4	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	New Admin Building
Foundation	7	40	0	4	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	New Admin Building
Structure and Exterior Finishes	4	60	3	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	New Admin Building
Interior Finishes	2	60	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	New Admin Building
Demolition	10	30	0	6	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Residential Care Facility
Site Preparation, Grading and Paving	11	30	0	6	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Residential Care Facility
Foundation	14	50	0	6	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Residential Care Facility
Building Construction	4	80	1	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Residential Care Facility
Architectural Coating	2	120	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Residential Care Facility
Demolition	10	30	0	38	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Seminary Point

Site Preparation, Grading and Paving	11	30	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Seminary Point
Foundation	14	50	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Seminary Point
Building Construction	4	80	1	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Seminary Point
Architectural Coating	2	150	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Seminary Point
Demolition	10	30	0	6	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Shuck Knoll
Site Preparation, Grading and Paving	11	30	0	6	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Shuck Knoll
Foundation	14	50	0	6	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Shuck Knoll
Building Construction	4	80	1	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Shuck Knoll
Architectural Coating	2	120	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Shuck Knoll

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Description
Demolition	Excavators	2	8	273	0.38	Chapel Hill & Mission Dr.
Demolition	Off-Highway Trucks	3	8	430	0.38	Chapel Hill & Mission Dr.
Demolition	Rollers	1	8	249	0.38	Chapel Hill & Mission Dr.
Demolition	Scrapers	2	8	304	0.48	Chapel Hill & Mission Dr.
Demolition	Skid Steer Loaders	1	8	74	0.37	Chapel Hill & Mission Dr.
Demolition	Tractors/Loaders/Backhoes	1	8	104	0.37	Chapel Hill & Mission Dr.
Site Preparation, Grading and Paving	Cement and Mortar Mixers	2	8	350	0.56	Chapel Hill & Mission Dr.
Site Preparation, Grading and Paving	Off-Highway Trucks	3	8	350	0.38	Chapel Hill & Mission Dr.
Site Preparation, Grading and Paving	Paving Equipment	1	8	225	0.36	Chapel Hill & Mission Dr.
Site Preparation, Grading and Paving	Rollers	1	8	130	0.38	Chapel Hill & Mission Dr.
Site Preparation, Grading and Paving	Skid Steer Loaders	2	8	74	0.37	Chapel Hill & Mission Dr.
Site Preparation, Grading and Paving	Tractors/Loaders/Backhoes	2	8	104	0.37	Chapel Hill & Mission Dr.
Foundation	Cement and Mortar Mixers	4	8	350	0.56	Chapel Hill & Mission Dr.
Foundation	Excavators	2	8	24	0.38	Chapel Hill & Mission Dr.
Foundation	Off-Highway Trucks	3	8	350	0.38	Chapel Hill & Mission Dr.
Foundation	Off-Highway Trucks	1	8	197	0.38	Chapel Hill & Mission Dr.
Foundation	Skid Steer Loaders	2	8	74	0.37	Chapel Hill & Mission Dr.
Foundation	Tractors/Loaders/Backhoes	2	8	104	0.37	Chapel Hill & Mission Dr.
Building Construction	Aerial Lifts	1	8	130	0.31	Chapel Hill & Mission Dr.
Building Construction	Aerial Lifts	1	8	49	0.31	Chapel Hill & Mission Dr.
Building Construction	Cranes	1	8	367	0.29	Chapel Hill & Mission Dr.
Building Construction	Forklifts	1	8	83	0.2	Chapel Hill & Mission Dr.
Architectural Coating	Forklifts	1	8	83	0.2	Chapel Hill & Mission Dr.
Architectural Coating	Skid Steer Loaders	1	8	130	0.37	Chapel Hill & Mission Dr.
Demolition	Excavators	2	8	273	0.38	Existing Admin & Academic Building
Demolition	Off-Highway Trucks	2	8	430	0.38	Existing Admin & Academic Building
Demolition	Skid Steer Loaders	4	8	74	0.37	Existing Admin & Academic Building
Demolition	Skid Steer Loaders	4	8	49	0.37	Existing Admin & Academic Building
Utilities	Off-Highway Trucks	1	8	350	0.38	Existing Admin & Academic Building
Utilities	Skid Steer Loaders	1	8	74	0.37	Existing Admin & Academic Building
Utilities	Tractors/Loaders/Backhoes	1	8	104	0.37	Existing Admin & Academic Building
Structure Retrofit	Aerial Lifts	1	8	49	0.31	Existing Admin & Academic Building
Structure Retrofit	Cement and Mortar Mixers	2	8	350	0.56	Existing Admin & Academic Building
Structure Retrofit	Cranes	1	4	130	0.29	Existing Admin & Academic Building
Structure Retrofit	Pumps	1	8	197	0.74	Existing Admin & Academic Building
Structure Retrofit	Skid Steer Loaders	1	8	74	0.37	Existing Admin & Academic Building
Exterior Finishes	Aerial Lifts	1	8	130	0.31	Existing Admin & Academic Building
Exterior Finishes	Aerial Lifts	1	8	49	0.31	Existing Admin & Academic Building
Exterior Finishes	Cranes	1	8	367	0.29	Existing Admin & Academic Building
Exterior Finishes	Forklifts	1	8	83	0.2	Existing Admin & Academic Building
Interior Finishes	Forklifts	1	8	83	0.2	Existing Admin & Academic Building
Interior Finishes	Skid Steer Loaders	1	8	130	0.37	Existing Admin & Academic Building
Demolition	Aerial Lifts	2	8	49	0.31	Existing Café
Demolition	Excavators	1	8	273	0.38	Existing Café
Demolition	Off-Highway Trucks	1	8	430	0.38	Existing Café
Demolition	Skid Steer Loaders	2	8	74	0.37	Existing Café
Utilities	Off-Highway Trucks	1	8	350	0.38	Existing Café
Utilities	Skid Steer Loaders	1	8	74	0.37	Existing Café

Utilities	Tractors/Loaders/Backhoes	1	8	104	0.37	Existing Café
Structure Retrofit	Cement and Mortar Mixers	1	8	350	0.56	Existing Café
Structure Retrofit	Off-Highway Trucks	1	8	350	0.38	Existing Café
Structure Retrofit	Pumps	1	8	197	0.74	Existing Café
Structure Retrofit	Skid Steer Loaders	1	8	74	0.37	Existing Café
Exterior Finishes	Aerial Lifts	1	8	130	0.31	Existing Café
Exterior Finishes	Aerial Lifts	1	8	49	0.31	Existing Café
Exterior Finishes	Cranes	1	8	367	0.29	Existing Café
Exterior Finishes	Forklifts	1	8	83	0.2	Existing Café
Interior Finishes	Forklifts	1	8	83	0.2	Existing Café
Interior Finishes	Skid Steer Loaders	1	8	130	0.37	Existing Café
Demolition	Excavators	1	8	273	0.38	Existing Library
Demolition	Off-Highway Trucks	1	8	430	0.38	Existing Library
Demolition	Skid Steer Loaders	2	8	74	0.37	Existing Library
Demolition	Skid Steer Loaders	2	8	49	0.37	Existing Library
Utilities	Off-Highway Trucks	1	8	350	0.38	Existing Library
Utilities	Skid Steer Loaders	1	8	74	0.37	Existing Library
Utilities	Tractors/Loaders/Backhoes	1	8	104	0.37	Existing Library
Structure Retrofit	Aerial Lifts	1	8	49	0.31	Existing Library
Structure Retrofit	Cement and Mortar Mixers	2	8	350	0.56	Existing Library
Structure Retrofit	Cranes	1	4	544	0.29	Existing Library
Structure Retrofit	Pumps	1	8	197	0.74	Existing Library
Structure Retrofit	Skid Steer Loaders	1	8	74	0.37	Existing Library
Exterior Finishes	Aerial Lifts	1	8	130	0.31	Existing Library
Exterior Finishes	Aerial Lifts	1	8	49	0.31	Existing Library
Exterior Finishes	Cranes	1	8	367	0.29	Existing Library
Exterior Finishes	Forklifts	1	8	83	0.2	Existing Library
Interior Finishes	Forklifts	1	8	83	0.2	Existing Library
Interior Finishes	Skid Steer Loaders	1	8	130	0.37	Existing Library
Demolition	Excavators	1	8	273	0.38	Fitness & Day Care
Demolition	Off-Highway Trucks	1	8	430	0.38	Fitness & Day Care
Demolition	Rollers	1	8	249	0.38	Fitness & Day Care
Demolition	Scrapers	1	8	304	0.48	Fitness & Day Care
Demolition	Skid Steer Loaders	2	8	74	0.37	Fitness & Day Care
Demolition	Tractors/Loaders/Backhoes	1	8	104	0.37	Fitness & Day Care
Utilities	Cement and Mortar Mixers	2	8	350	0.56	Fitness & Day Care
Utilities	Off-Highway Trucks	1	8	350	0.38	Fitness & Day Care
Utilities	Paving Equipment	1	8	225	0.36	Fitness & Day Care
Utilities	Rollers	1	8	130	0.38	Fitness & Day Care
Utilities	Skid Steer Loaders	1	8	74	0.37	Fitness & Day Care
Utilities	Tractors/Loaders/Backhoes	1	8	104	0.37	Fitness & Day Care
Foundations	Cement and Mortar Mixers	2	8	350	0.56	Fitness & Day Care
Foundations	Excavators	1	8	24	0.38	Fitness & Day Care
Foundations	Off-Highway Trucks	1	8	350	0.38	Fitness & Day Care
Foundations	Pumps	1	8	197	0.74	Fitness & Day Care
Foundations	Skid Steer Loaders	1	8	74	0.37	Fitness & Day Care
Foundations	Tractors/Loaders/Backhoes	1	8	104	0.37	Fitness & Day Care
Exterior Finishes	Aerial Lifts	1	8	130	0.31	Fitness & Day Care
Exterior Finishes	Aerial Lifts	1	8	49	0.31	Fitness & Day Care
Exterior Finishes	Cranes	1	8	367	0.29	Fitness & Day Care
Exterior Finishes	Forklifts	1	8	83	0.2	Fitness & Day Care
Interior Finishes	Forklifts	1	8	83	0.2	Fitness & Day Care
Interior Finishes	Skid Steer Loaders	1	8	130	0.37	Fitness & Day Care
Demolition	Excavators	2	8	273	0.38	Hodge/Shuck & Reed/Storer/Shuck
Demolition	Off-Highway Trucks	3	8	430	0.38	Hodge/Shuck & Reed/Storer/Shuck
Demolition	Rollers	1	8	249	0.38	Hodge/Shuck & Reed/Storer/Shuck
Demolition	Scrapers	2	8	304	0.48	Hodge/Shuck & Reed/Storer/Shuck
Demolition	Skid Steer Loaders	1	8	74	0.37	Hodge/Shuck & Reed/Storer/Shuck
Demolition	Tractors/Loaders/Backhoes	1	8	104	0.37	Hodge/Shuck & Reed/Storer/Shuck
Site Preparation, Grading and Paving	Cement and Mortar Mixers	2	8	350	0.56	Hodge/Shuck & Reed/Storer/Shuck
Site Preparation, Grading and Paving	Off-Highway Trucks	3	8	350	0.38	Hodge/Shuck & Reed/Storer/Shuck
Site Preparation, Grading and Paving	Paving Equipment	1	8	225	0.36	Hodge/Shuck & Reed/Storer/Shuck
Site Preparation, Grading and Paving	Rollers	1	8	130	0.38	Hodge/Shuck & Reed/Storer/Shuck
Site Preparation, Grading and Paving	Skid Steer Loaders	2	8	74	0.37	Hodge/Shuck & Reed/Storer/Shuck
Site Preparation, Grading and Paving	Tractors/Loaders/Backhoes	2	8	104	0.37	Hodge/Shuck & Reed/Storer/Shuck
Foundation	Cement and Mortar Mixers	4	8	350	0.56	Hodge/Shuck & Reed/Storer/Shuck

Foundation	Excavators	2	8	24	0.38	Hodge/Shuck & Reed/Storer/Shuck
Foundation	Off-Highway Trucks	3	8	350	0.38	Hodge/Shuck & Reed/Storer/Shuck
Foundation	Off-Highway Trucks	1	8	197	0.38	Hodge/Shuck & Reed/Storer/Shuck
Foundation	Skid Steer Loaders	2	8	74	0.37	Hodge/Shuck & Reed/Storer/Shuck
Foundation	Tractors/Loaders/Backhoes	2	8	104	0.37	Hodge/Shuck & Reed/Storer/Shuck
Building Construction	Aerial Lifts	1	8	130	0.31	Hodge/Shuck & Reed/Storer/Shuck
Building Construction	Aerial Lifts	1	8	49	0.31	Hodge/Shuck & Reed/Storer/Shuck
Building Construction	Forklifts	1	8	83	0.2	Hodge/Shuck & Reed/Storer/Shuck
Architectural Coating	Forklifts	1	8	83	0.2	Hodge/Shuck & Reed/Storer/Shuck
Architectural Coating	Skid Steer Loaders	1	8	130	0.37	Hodge/Shuck & Reed/Storer/Shuck
IRRIGATION & PLANTING	Skid Steer Loaders	1	8	130	0.37	Landscaping & Renovation
IRRIGATION & PLANTING	Forklifts	1	8	83	0.2	Landscaping & Renovation
SURVEY, SITE UTILITIES, GRUB & CLEAR	Excavators	1	8	273	0.38	Landscaping & Renovation
SURVEY, SITE UTILITIES, GRUB & CLEAR	Off-Highway Trucks	1	8	430	0.38	Landscaping & Renovation
SURVEY, SITE UTILITIES, GRUB & CLEAR	Rollers	1	8	249	0.38	Landscaping & Renovation
SURVEY, SITE UTILITIES, GRUB & CLEAR	Scrapers	1	8	304	0.48	Landscaping & Renovation
SURVEY, SITE UTILITIES, GRUB & CLEAR	Skid Steer Loaders	2	8	74	0.37	Landscaping & Renovation
SURVEY, SITE UTILITIES, GRUB & CLEAR	Tractors/Loaders/Backhoes	1	8	104	0.37	Landscaping & Renovation
CURB & GUTTER, HARDSCAPE & PAVING	Cement and Mortar Mixers	2	8	350	0.56	Landscaping & Renovation
CURB & GUTTER, HARDSCAPE & PAVING	Off-Highway Trucks	2	4	350	0.38	Landscaping & Renovation
CURB & GUTTER, HARDSCAPE & PAVING	Pumps	1	8	197	0.74	Landscaping & Renovation
CURB & GUTTER, HARDSCAPE & PAVING	Rollers	1	8	130	0.38	Landscaping & Renovation
CURB & GUTTER, HARDSCAPE & PAVING	Skid Steer Loaders	1	8	74	0.37	Landscaping & Renovation
CURB & GUTTER, HARDSCAPE & PAVING	Tractors/Loaders/Backhoes	2	8	104	0.37	Landscaping & Renovation
MISC. SITE FURNISHINGS	Aerial Lifts	1	8	130	0.31	Landscaping & Renovation
MISC. SITE FURNISHINGS	Cranes	1	8	367	0.29	Landscaping & Renovation
MISC. SITE FURNISHINGS	Forklifts	1	8	83	0.2	Landscaping & Renovation
Demolition	Excavators	1	8	273	0.38	New Admin Building
Demolition	Off-Highway Trucks	1	8	430	0.38	New Admin Building
Demolition	Rollers	1	8	249	0.38	New Admin Building
Demolition	Scrapers	1	8	304	0.48	New Admin Building
Demolition	Skid Steer Loaders	2	8	74	0.37	New Admin Building
Demolition	Tractors/Loaders/Backhoes	1	8	104	0.37	New Admin Building
Utilities, Grading and Paving	Cement and Mortar Mixers	2	8	350	0.56	New Admin Building
Utilities, Grading and Paving	Off-Highway Trucks	2	8	350	0.38	New Admin Building
Utilities, Grading and Paving	Paving Equipment	1	8	225	0.36	New Admin Building
Utilities, Grading and Paving	Rollers	1	8	130	0.38	New Admin Building
Utilities, Grading and Paving	Skid Steer Loaders	1	8	74	0.37	New Admin Building
Utilities, Grading and Paving	Tractors/Loaders/Backhoes	1	8	104	0.37	New Admin Building
Foundation	Cement and Mortar Mixers	2	8	350	0.56	New Admin Building
Foundation	Excavators	1	8	24	0.38	New Admin Building
Foundation	Off-Highway Trucks	1	8	350	0.38	New Admin Building

Foundation	Pumps	1	8	197	0.74	New Admin Building
Foundation	Skid Steer Loaders	1	8	74	0.37	New Admin Building
Foundation	Tractors/Loaders/Backhoes	1	8	104	0.37	New Admin Building
Structure and Exterior Finishes	Aerial Lifts	1	8	130	0.31	New Admin Building
Structure and Exterior Finishes	Aerial Lifts	1	8	49	0.31	New Admin Building
Structure and Exterior Finishes	Cranes	1	8	367	0.29	New Admin Building
Structure and Exterior Finishes	Forklifts	1	8	83	0.2	New Admin Building
Interior Finishes	Forklifts	1	8	83	0.2	New Admin Building
Interior Finishes	Skid Steer Loaders	1	8	130	0.37	New Admin Building
Demolition	Excavators	2	8	273	0.38	Residential Care Facility
Demolition	Off-Highway Trucks	3	8	430	0.38	Residential Care Facility
Demolition	Rollers	1	8	249	0.38	Residential Care Facility
Demolition	Scrapers	2	8	304	0.48	Residential Care Facility
Demolition	Skid Steer Loaders	1	8	74	0.37	Residential Care Facility
Demolition	Tractors/Loaders/Backhoes	1	8	104	0.37	Residential Care Facility
Site Preparation, Grading and Paving	Cement and Mortar Mixers	2	8	350	0.56	Residential Care Facility
Site Preparation, Grading and Paving	Off-Highway Trucks	3	8	350	0.38	Residential Care Facility
Site Preparation, Grading and Paving	Paving Equipment	1	8	225	0.36	Residential Care Facility
Site Preparation, Grading and Paving	Rollers	1	8	130	0.38	Residential Care Facility
Site Preparation, Grading and Paving	Skid Steer Loaders	2	8	74	0.37	Residential Care Facility
Site Preparation, Grading and Paving	Tractors/Loaders/Backhoes	2	8	104	0.37	Residential Care Facility
Foundation	Cement and Mortar Mixers	4	8	350	0.56	Residential Care Facility
Foundation	Excavators	2	8	24	0.38	Residential Care Facility
Foundation	Off-Highway Trucks	3	8	350	0.38	Residential Care Facility
Foundation	Off-Highway Trucks	1	8	197	0.38	Residential Care Facility
Foundation	Skid Steer Loaders	2	8	74	0.37	Residential Care Facility
Foundation	Tractors/Loaders/Backhoes	2	8	104	0.37	Residential Care Facility
Building Construction	Aerial Lifts	1	8	130	0.31	Residential Care Facility
Building Construction	Aerial Lifts	1	8	49	0.31	Residential Care Facility
Building Construction	Cranes	1	8	367	0.29	Residential Care Facility
Building Construction	Forklifts	1	8	83	0.2	Residential Care Facility
Architectural Coating	Forklifts	1	8	83	0.2	Residential Care Facility
Architectural Coating	Skid Steer Loaders	1	8	130	0.37	Residential Care Facility
Demolition	Excavators	2	8	273	0.38	Seminary Point
Demolition	Off-Highway Trucks	3	8	430	0.38	Seminary Point
Demolition	Rollers	1	8	249	0.38	Seminary Point
Demolition	Scrapers	2	8	304	0.48	Seminary Point
Demolition	Skid Steer Loaders	1	8	74	0.37	Seminary Point
Demolition	Tractors/Loaders/Backhoes	1	8	104	0.37	Seminary Point
Site Preparation, Grading and Paving	Cement and Mortar Mixers	2	8	104	0.56	Seminary Point
Site Preparation, Grading and Paving	Off-Highway Trucks	3	8	74	0.38	Seminary Point
Site Preparation, Grading and Paving	Paving Equipment	1	8	225	0.36	Seminary Point
Site Preparation, Grading and Paving	Rollers	1	8	430	0.38	Seminary Point
Site Preparation, Grading and Paving	Skid Steer Loaders	2	8	24	0.37	Seminary Point
Site Preparation, Grading and Paving	Tractors/Loaders/Backhoes	2	8	104	0.37	Seminary Point
Foundation		0	8			Seminary Point
Foundation	Cement and Mortar Mixers	4	8	350	0.56	Seminary Point
Foundation	Excavators	2	8	24	0.38	Seminary Point
Foundation	Off-Highway Trucks	3	8	350	0.38	Seminary Point
Foundation	Off-Highway Trucks	1	8	197	0.38	Seminary Point
Foundation	Skid Steer Loaders	2	8	74	0.37	Seminary Point
Foundation	Tractors/Loaders/Backhoes	2	8	104	0.37	Seminary Point
Building Construction	Aerial Lifts	1	8	63	0.31	Seminary Point
Building Construction	Aerial Lifts	1	8	63	0.31	Seminary Point
Building Construction	Cranes	1	8	231	0.29	Seminary Point
Building Construction	Forklifts	1	8	89	0.2	Seminary Point

Architectural Coating	Forklifts	1	8	83	0.2	Seminary Point
Architectural Coating	Skid Steer Loaders	1	8	130	0.37	Seminary Point
Demolition	Excavators	2	8	273	0.38	Shuck Knoll
Demolition	Off-Highway Trucks	3	8	430	0.38	Shuck Knoll
Demolition	Rollers	1	8	249	0.38	Shuck Knoll
Demolition	Scrapers	2	8	304	0.48	Shuck Knoll
Demolition	Skid Steer Loaders	1	8	74	0.37	Shuck Knoll
Demolition	Tractors/Loaders/Backhoes	1	8	104	0.37	Shuck Knoll
Site Preparation, Grading and Paving	Cement and Mortar Mixers	2	8	350	0.56	Shuck Knoll
Site Preparation, Grading and Paving	Off-Highway Trucks	3	8	350	0.38	Shuck Knoll
Site Preparation, Grading and Paving	Paving Equipment	1	8	225	0.36	Shuck Knoll
Site Preparation, Grading and Paving	Rollers	1	8	130	0.38	Shuck Knoll
Site Preparation, Grading and Paving	Skid Steer Loaders	2	8	74	0.37	Shuck Knoll
Site Preparation, Grading and Paving	Tractors/Loaders/Backhoes	2	8	104	0.37	Shuck Knoll
Foundation		0	8			Shuck Knoll
Foundation	Cement and Mortar Mixers	4	8	350	0.56	Shuck Knoll
Foundation	Excavators	2	8	24	0.38	Shuck Knoll
Foundation	Off-Highway Trucks	3	8	350	0.38	Shuck Knoll
Foundation	Off-Highway Trucks	1	8	197	0.38	Shuck Knoll
Foundation	Skid Steer Loaders	2	8	74	0.37	Shuck Knoll
Foundation	Tractors/Loaders/Backhoes	2	8	104	0.37	Shuck Knoll
Building Construction	Aerial Lifts	1	8	130	0.31	Shuck Knoll
Building Construction	Aerial Lifts	1	8	49	0.31	Shuck Knoll
Building Construction	Cranes	1	8	367	0.29	Shuck Knoll
Building Construction	Forklifts	1	8	83	0.2	Shuck Knoll
Architectural Coating	Forklifts	1	8	83	0.2	Shuck Knoll
Architectural Coating	Skid Steer Loaders	1	8	130	0.37	Shuck Knoll

Energy Calculations Summary Page

Operations

Source	Gas (gal)	Diesel (gal)	Kwh	kBTU
Mobile Sources	#REF!	#REF!		
Electricity			1,678,638	
Natural Gas				3,937,703

Construction

Phase Name	Gas (gal)	Diesel (gal)
Offroad		428,818
Trucks		75,593
Worker Commute	886,626	
Total	**886,626**	**504,410**

Construction Offroad Calculations

Nothing for the user to do here.

This tab calculates fuel consumption from offroad equipment and schedule input in the USER INPUT tab

Fuel consumption calculated from OFFROAD based on fuel consumption divided by horsepower hours to generate an average for all epuipment output

Total =	**428,818**

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Days	total hp-hrs	Gallons per hp-hr	Gallons
Demolition	Excavators	2	8	273	0.38	37	61414.08	0.027	1,688
Demolition	Off-Highway Trucks	3	8	430	0.38	37	145099.2	0.027	3,988
Demolition	Rollers	1	8	249	0.38	37	28007.52	0.027	770
Demolition	Scrapers	2	8	304	0.48	37	86384.64	0.027	2,374
Demolition	Skid Steer Loaders	1	8	74	0.37	37	8104.48	0.027	223
Demolition	Tractors/Loaders/Ba	1	8	104	0.37	37	11390.08	0.027	313
Site Preparation, Grading and Paving	Cement and Mortar	2	8	350	0.56	40	125440	0.027	3,448
Site Preparation, Grading and Paving	Off-Highway Trucks	3	8	350	0.38	40	127680	0.027	3,510
Site Preparation, Grading and Paving	Paving Equipment	1	8	225	0.36	40	25920	0.027	712
Site Preparation, Grading and Paving	Rollers	1	8	130	0.38	40	15808	0.027	435
Site Preparation, Grading and Paving	Skid Steer Loaders	2	8	74	0.37	40	17523.2	0.027	482
Site Preparation, Grading and Paving	Tractors/Loaders/Ba	2	8	104	0.37	40	24627.2	0.027	677
Foundation	Cement and Mortar	4	8	350	0.56	80	501760	0.027	13,792
Foundation	Excavators	2	8	24	0.38	80	11673.6	0.027	321
Foundation	Off-Highway Trucks	3	8	350	0.38	80	255360	0.027	7,019
Foundation	Off-Highway Trucks	1	8	197	0.38	80	47910.4	0.027	1,317
Foundation	Skid Steer Loaders	2	8	74	0.37	80	35046.4	0.027	963
Foundation	Tractors/Loaders/Ba	2	8	104	0.37	80	49254.4	0.027	1,354
Building Construction	Aerial Lifts	1	8	130	0.31	200	64480	0.027	1,772
Building Construction	Aerial Lifts	1	8	49	0.31	200	24304	0.027	668
Building Construction	Cranes	1	8	367	0.29	200	170288	0.027	4,681
Building Construction	Forklifts	1	8	83	0.2	200	26560	0.027	730
Architectural Coating	Forklifts	1	8	83	0.2	260	34528	0.027	949
Architectural Coating	Skid Steer Loaders	1	8	130	0.37	260	100048	0.027	2,750
Demolition	Excavators	2	8	273	0.38	37	61414.08	0.027	1,688
Demolition	Off-Highway Trucks	2	8	430	0.38	37	96732.8	0.027	2,659
Demolition	Skid Steer Loaders	4	8	74	0.37	37	32417.92	0.027	891
Demolition	Skid Steer Loaders	4	8	49	0.37	37	21465.92	0.027	590
Utilities	Off-Highway Trucks	1	8	350	0.38	20	21280	0.027	585
Utilities	Skid Steer Loaders	1	8	74	0.37	20	4380.8	0.027	120
Utilities	Tractors/Loaders/Ba	1	8	104	0.37	20	6156.8	0.027	169
Structure Retrofit	Aerial Lifts	1	8	49	0.31	80	9721.6	0.027	267
Structure Retrofit	Cement and Mortar	2	8	350	0.56	80	250880	0.027	6,896
Structure Retrofit	Cranes	1	4	130	0.29	80	12064	0.027	332
Structure Retrofit	Pumps	1	8	197	0.74	80	93299.2	0.027	2,564
Structure Retrofit	Skid Steer Loaders	1	8	74	0.37	80	17523.2	0.027	482
Exterior Finishes	Aerial Lifts	1	8	130	0.31	130	41912	0.027	1,152
Exterior Finishes	Aerial Lifts	1	8	49	0.31	130	15797.6	0.027	434
Exterior Finishes	Cranes	1	8	367	0.29	130	110687.2	0.027	3,042
Exterior Finishes	Forklifts	1	8	83	0.2	130	17264	0.027	475
Interior Finishes	Forklifts	1	8	83	0.2	180	23904	0.027	657
Interior Finishes	Skid Steer Loaders	1	8	130	0.37	180	69264	0.027	1,904
Demolition	Aerial Lifts	2	8	49	0.31	37	8992.48	0.027	247
Demolition	Excavators	1	8	273	0.38	37	30707.04	0.027	844
Demolition	Off-Highway Trucks	1	8	430	0.38	37	48366.4	0.027	1,329
Demolition	Skid Steer Loaders	2	8	74	0.37	37	16208.96	0.027	446
Utilities	Off-Highway Trucks	1	8	350	0.38	20	21280	0.027	585
Utilities	Skid Steer Loaders	1	8	74	0.37	20	4380.8	0.027	120
Utilities	Tractors/Loaders/Ba	1	8	104	0.37	20	6156.8	0.027	169
Structure Retrofit	Cement and Mortar	1	8	350	0.56	80	125440	0.027	3,448
Structure Retrofit	Off-Highway Trucks	1	8	350	0.38	80	85120	0.027	2,340
Structure Retrofit	Pumps	1	8	197	0.74	80	93299.2	0.027	2,564
Structure Retrofit	Skid Steer Loaders	1	8	74	0.37	80	17523.2	0.027	482
Exterior Finishes	Aerial Lifts	1	8	130	0.31	130	41912	0.027	1,152
Exterior Finishes	Aerial Lifts	1	8	49	0.31	130	15797.6	0.027	434
Exterior Finishes	Cranes	1	8	367	0.29	130	110687.2	0.027	3,042
Exterior Finishes	Forklifts	1	8	83	0.2	130	17264	0.027	475
Interior Finishes	Forklifts	1	8	83	0.2	180	23904	0.027	657
Interior Finishes	Skid Steer Loaders	1	8	130	0.37	180	69264	0.027	1,904
Demolition	Excavators	1	8	273	0.38	37	30707.04	0.027	844
Demolition	Off-Highway Trucks	1	8	430	0.38	37	48366.4	0.027	1,329
Demolition	Skid Steer Loaders	2	8	74	0.37	37	16208.96	0.027	446
Demolition	Skid Steer Loaders	2	8	49	0.37	37	10732.96	0.027	295
Utilities	Off-Highway Trucks	1	8	350	0.38	20	21280	0.027	585
Utilities	Skid Steer Loaders	1	8	74	0.37	20	4380.8	0.027	120
Utilities	Tractors/Loaders/Ba	1	8	104	0.37	20	6156.8	0.027	169
Structure Retrofit	Aerial Lifts	1	8	49	0.31	80	9721.6	0.027	267
Structure Retrofit	Cement and Mortar	2	8	350	0.56	80	250880	0.027	6,896
Structure Retrofit	Cranes	1	4	544	0.29	80	50483.2	0.027	1,388
Structure Retrofit	Pumps	1	8	197	0.74	80	93299.2	0.027	2,564
Structure Retrofit	Skid Steer Loaders	1	8	74	0.37	80	17523.2	0.027	482
Exterior Finishes	Aerial Lifts	1	8	130	0.31	130	41912	0.027	1,152
Exterior Finishes	Aerial Lifts	1	8	49	0.31	130	15797.6	0.027	434

Exterior Finishes	Cranes	1	8	367	0.29	130	110687.2	0.027	3,042
Exterior Finishes	Forklifts	1	8	83	0.2	130	17264	0.027	475
Interior Finishes	Forklifts	1	8	83	0.2	180	23904	0.027	657
Interior Finishes	Skid Steer Loaders	1	8	130	0.37	180	69264	0.027	1,904
Demolition	Excavators	1	8	273	0.38	37	30707.04	0.027	844
Demolition	Off-Highway Trucks	1	8	430	0.38	37	48366.4	0.027	1,329
Demolition	Rollers	1	8	249	0.38	37	28007.52	0.027	770
Demolition	Scrapers	1	8	304	0.48	37	43192.32	0.027	1,187
Demolition	Skid Steer Loaders	2	8	74	0.37	37	16208.96	0.027	446
Demolition	Tractors/Loaders/Ba	1	8	104	0.37	37	11390.08	0.027	313
Utilities	Cement and Mortar	2	8	350	0.56	20	62720	0.027	1,724
Utilities	Off-Highway Trucks	1	8	350	0.38	20	21280	0.027	585
Utilities	Paving Equipment	1	8	225	0.36	20	12960	0.027	356
Utilities	Rollers	1	8	130	0.38	20	7904	0.027	217
Utilities	Skid Steer Loaders	1	8	74	0.37	20	4380.8	0.027	120
Utilities	Tractors/Loaders/Ba	1	8	104	0.37	20	6156.8	0.027	169
Foundations	Cement and Mortar	2	8	350	0.56	40	125440	0.027	3,448
Foundations	Excavators	1	8	24	0.38	40	2918.4	0.027	80
Foundations	Off-Highway Trucks	1	8	350	0.38	40	42560	0.027	1,170
Foundations	Pumps	1	8	197	0.74	40	46649.6	0.027	1,282
Foundations	Skid Steer Loaders	1	8	74	0.37	40	8761.6	0.027	241
Foundations	Tractors/Loaders/Ba	1	8	104	0.37	40	12313.6	0.027	338
Exterior Finishes	Aerial Lifts	1	8	130	0.31	130	41912	0.027	1,152
Exterior Finishes	Aerial Lifts	1	8	49	0.31	130	15797.6	0.027	434
Exterior Finishes	Cranes	1	8	367	0.29	130	110687.2	0.027	3,042
Exterior Finishes	Forklifts	1	8	83	0.2	130	17264	0.027	475
Interior Finishes	Forklifts	1	8	83	0.2	180	23904	0.027	657
Interior Finishes	Skid Steer Loaders	1	8	130	0.37	180	69264	0.027	1,904
Demolition	Excavators	2	8	273	0.38	37	61414.08	0.027	1,688
Demolition	Off-Highway Trucks	3	8	430	0.38	37	145099.2	0.027	3,988
Demolition	Rollers	1	8	249	0.38	37	28007.52	0.027	770
Demolition	Scrapers	2	8	304	0.48	37	86384.64	0.027	2,374
Demolition	Skid Steer Loaders	1	8	74	0.37	37	8104.48	0.027	223
Demolition	Tractors/Loaders/Ba	1	8	104	0.37	37	11390.08	0.027	313
Site Preparation, Grading and Paving	Cement and Mortar	2	8	350	0.56	40	125440	0.027	3,448
Site Preparation, Grading and Paving	Off-Highway Trucks	3	8	350	0.38	40	127680	0.027	3,510
Site Preparation, Grading and Paving	Paving Equipment	1	8	225	0.36	40	25920	0.027	712
Site Preparation, Grading and Paving	Rollers	1	8	130	0.38	40	15808	0.027	435
Site Preparation, Grading and Paving	Skid Steer Loaders	2	8	74	0.37	40	17523.2	0.027	482
Site Preparation, Grading and Paving	Tractors/Loaders/Ba	2	8	104	0.37	40	24627.2	0.027	677
Foundation	Cement and Mortar	4	8	350	0.56	80	501760	0.027	13,792
Foundation	Excavators	2	8	24	0.38	80	11673.6	0.027	321
Foundation	Off-Highway Trucks	3	8	350	0.38	80	255360	0.027	7,019
Foundation	Off-Highway Trucks	1	8	197	0.38	80	47910.4	0.027	1,317
Foundation	Skid Steer Loaders	2	8	74	0.37	80	35046.4	0.027	963
Foundation	Tractors/Loaders/Ba	2	8	104	0.37	80	49254.4	0.027	1,354
Building Construction	Aerial Lifts	1	8	130	0.31	200	64480	0.027	1,772
Building Construction	Aerial Lifts	1	8	49	0.31	200	24304	0.027	668
Building Construction	Forklifts	1	8	83	0.2	200	26560	0.027	730
Architectural Coating	Forklifts	1	8	83	0.2	260	34528	0.027	949
Architectural Coating	Skid Steer Loaders	1	8	130	0.37	260	100048	0.027	2,750
IRRIGATION & PLANTING	Skid Steer Loaders	1	8	130	0.37	289	111207.2	0.027	3,057
IRRIGATION & PLANTING	Forklifts	1	8	83	0.2	289	38379.2	0.027	1,055
SURVEY, SITE UTILITIES, GRUB &CLEAR	Excavators	1	8	273	0.38	80	66393.6	0.027	1,825
SURVEY, SITE UTILITIES, GRUB &CLEAR	Off-Highway Trucks	1	8	430	0.38	80	104576	0.027	2,874
SURVEY, SITE UTILITIES, GRUB &CLEAR	Rollers	1	8	249	0.38	80	60556.8	0.027	1,665
SURVEY, SITE UTILITIES, GRUB &CLEAR	Scrapers	1	8	304	0.48	80	93388.8	0.027	2,567
SURVEY, SITE UTILITIES, GRUB &CLEAR	Skid Steer Loaders	2	8	74	0.37	80	35046.4	0.027	963
SURVEY, SITE UTILITIES, GRUB &CLEAR	Tractors/Loaders/Ba	1	8	104	0.37	80	24627.2	0.027	677
CURB & GUTTER, HARDSCAPE &PAVIN	Cement and Mortar	2	8	350	0.56	160	501760	0.027	13,792
CURB & GUTTER, HARDSCAPE &PAVIN	Off-Highway Trucks	2	4	350	0.38	160	170240	0.027	4,679
CURB & GUTTER, HARDSCAPE &PAVIN	Pumps	1	8	197	0.74	160	186598.4	0.027	5,129
CURB & GUTTER, HARDSCAPE &PAVIN	Rollers	1	8	130	0.38	160	63232	0.027	1,738
CURB & GUTTER, HARDSCAPE &PAVIN	Skid Steer Loaders	1	8	74	0.37	160	35046.4	0.027	963
CURB & GUTTER, HARDSCAPE &PAVIN	Tractors/Loaders/Ba	2	8	104	0.37	160	98508.8	0.027	2,708
MISC. SITE FURNISHINGS	Aerial Lifts	1	8	130	0.31	40	12896	0.027	354
MISC. SITE FURNISHINGS	Cranes	1	8	367	0.29	40	34057.6	0.027	936
MISC. SITE FURNISHINGS	Forklifts	1	8	83	0.2	40	5312	0.027	146
Demolition	Excavators	1	8	273	0.38	37	30707.04	0.027	844
Demolition	Off-Highway Trucks	1	8	430	0.38	37	48366.4	0.027	1,329
Demolition	Rollers	1	8	249	0.38	37	28007.52	0.027	770
Demolition	Scrapers	1	8	304	0.48	37	43192.32	0.027	1,187
Demolition	Skid Steer Loaders	2	8	74	0.37	37	16208.96	0.027	446
Demolition	Tractors/Loaders/Ba	1	8	104	0.37	37	11390.08	0.027	313
Utilities, Grading and Paving	Cement and Mortar	2	8	350	0.56	30	94080	0.027	2,586
Utilities, Grading and Paving	Off-Highway Trucks	2	8	350	0.38	30	63840	0.027	1,755
Utilities, Grading and Paving	Paving Equipment	1	8	225	0.36	30	19440	0.027	534
Utilities, Grading and Paving	Rollers	1	8	130	0.38	30	11856	0.027	326
Utilities, Grading and Paving	Skid Steer Loaders	1	8	74	0.37	30	6571.2	0.027	181
Utilities, Grading and Paving	Tractors/Loaders/Ba	1	8	104	0.37	30	9235.2	0.027	254
Foundation	Cement and Mortar	2	8	350	0.56	80	250880	0.027	6,896
Foundation	Excavators	1	8	24	0.38	80	5836.8	0.027	160
Foundation	Off-Highway Trucks	1	8	350	0.38	80	85120	0.027	2,340
Foundation	Pumps	1	8	197	0.74	80	93299.2	0.027	2,564

Foundation	Skid Steer Loaders	1	8	74	0.37	80	17523.2	0.027	482
Foundation	Tractors/Loaders/Ba	1	8	104	0.37	80	24627.2	0.027	677
Structure and Exterior Finishes	Aerial Lifts	1	8	130	0.31	100	32240	0.027	886
Structure and Exterior Finishes	Aerial Lifts	1	8	49	0.31	100	12152	0.027	334
Structure and Exterior Finishes	Cranes	1	8	367	0.29	100	85144	0.027	2,340
Structure and Exterior Finishes	Forklifts	1	8	83	0.2	100	13280	0.027	365
Interior Finishes	Forklifts	1	8	83	0.2	180	23904	0.027	657
Interior Finishes	Skid Steer Loaders	1	8	130	0.37	180	69264	0.027	1,904
Demolition	Excavators	2	8	273	0.38	37	61414.08	0.027	1,688
Demolition	Off-Highway Trucks	3	8	430	0.38	37	145099.2	0.027	3,988
Demolition	Rollers	1	8	249	0.38	37	28007.52	0.027	770
Demolition	Scrapers	2	8	304	0.48	37	86384.64	0.027	2,374
Demolition	Skid Steer Loaders	1	8	74	0.37	37	8104.48	0.027	223
Demolition	Tractors/Loaders/Ba	1	8	104	0.37	37	11390.08	0.027	313
Site Preparation, Grading and Paving	Cement and Mortar	2	8	350	0.56	40	125440	0.027	3,448
Site Preparation, Grading and Paving	Off-Highway Trucks	3	8	350	0.38	40	127680	0.027	3,510
Site Preparation, Grading and Paving	Paving Equipment	1	8	225	0.36	40	25920	0.027	712
Site Preparation, Grading and Paving	Rollers	1	8	130	0.38	40	15808	0.027	435
Site Preparation, Grading and Paving	Skid Steer Loaders	2	8	74	0.37	40	17523.2	0.027	482
Site Preparation, Grading and Paving	Tractors/Loaders/Ba	2	8	104	0.37	40	24627.2	0.027	677
Foundation	Cement and Mortar	4	8	350	0.56	80	501760	0.027	13,792
Foundation	Excavators	2	8	24	0.38	80	11673.6	0.027	321
Foundation	Off-Highway Trucks	3	8	350	0.38	80	255360	0.027	7,019
Foundation	Off-Highway Trucks	1	8	197	0.38	80	47910.4	0.027	1,317
Foundation	Skid Steer Loaders	2	8	74	0.37	80	35046.4	0.027	963
Foundation	Tractors/Loaders/Ba	2	8	104	0.37	80	49254.4	0.027	1,354
Building Construction	Aerial Lifts	1	8	130	0.31	200	64480	0.027	1,772
Building Construction	Aerial Lifts	1	8	49	0.31	200	24304	0.027	668
Building Construction	Cranes	1	8	367	0.29	200	170288	0.027	4,681
Building Construction	Forklifts	1	8	83	0.2	200	26560	0.027	730
Architectural Coating	Forklifts	1	8	83	0.2	260	34528	0.027	949
Architectural Coating	Skid Steer Loaders	1	8	130	0.37	260	100048	0.027	2,750
Demolition	Excavators	2	8	273	0.38	37	61414.08	0.027	1,688
Demolition	Off-Highway Trucks	3	8	430	0.38	37	145099.2	0.027	3,988
Demolition	Rollers	1	8	249	0.38	37	28007.52	0.027	770
Demolition	Scrapers	2	8	304	0.48	37	86384.64	0.027	2,374
Demolition	Skid Steer Loaders	1	8	74	0.37	37	8104.48	0.027	223
Demolition	Tractors/Loaders/Ba	1	8	104	0.37	37	11390.08	0.027	313
Site Preparation, Grading and Paving	Cement and Mortar	2	8	104	0.56	40	37273.6	0.027	1,025
Site Preparation, Grading and Paving	Off-Highway Trucks	3	8	74	0.38	40	26995.2	0.027	742
Site Preparation, Grading and Paving	Paving Equipment	1	8	225	0.36	40	25920	0.027	712
Site Preparation, Grading and Paving	Rollers	1	8	430	0.38	40	52288	0.027	1,437
Site Preparation, Grading and Paving	Skid Steer Loaders	2	8	24	0.37	40	5683.2	0.027	156
Site Preparation, Grading and Paving	Tractors/Loaders/Ba	2	8	104	0.37	40	24627.2	0.027	677
Foundation	0	0	8	0	0	80	0	0.027	0
Foundation	Cement and Mortar	4	8	350	0.56	80	501760	0.027	13,792
Foundation	Excavators	2	8	24	0.38	80	11673.6	0.027	321
Foundation	Off-Highway Trucks	3	8	350	0.38	80	255360	0.027	7,019
Foundation	Off-Highway Trucks	1	8	197	0.38	80	47910.4	0.027	1,317
Foundation	Skid Steer Loaders	2	8	74	0.37	80	35046.4	0.027	963
Foundation	Tractors/Loaders/Ba	2	8	104	0.37	80	49254.4	0.027	1,354
Building Construction	Aerial Lifts	1	8	63	0.31	200	31248	0.027	859
Building Construction	Aerial Lifts	1	8	63	0.31	200	31248	0.027	859
Building Construction	Cranes	1	8	231	0.29	200	107184	0.027	2,946
Building Construction	Forklifts	1	8	89	0.2	200	28480	0.027	783
Architectural Coating	Forklifts	1	8	83	0.2	260	34528	0.027	949
Architectural Coating	Skid Steer Loaders	1	8	130	0.37	260	100048	0.027	2,750
Demolition	Excavators	2	8	273	0.38	37	61414.08	0.027	1,688
Demolition	Off-Highway Trucks	3	8	430	0.38	37	145099.2	0.027	3,988
Demolition	Rollers	1	8	249	0.38	37	28007.52	0.027	770
Demolition	Scrapers	2	8	304	0.48	37	86384.64	0.027	2,374
Demolition	Skid Steer Loaders	1	8	74	0.37	37	8104.48	0.027	223
Demolition	Tractors/Loaders/Ba	1	8	104	0.37	37	11390.08	0.027	313
Site Preparation, Grading and Paving	Cement and Mortar	2	8	350	0.56	40	125440	0.027	3,448
Site Preparation, Grading and Paving	Off-Highway Trucks	3	8	350	0.38	40	127680	0.027	3,510
Site Preparation, Grading and Paving	Paving Equipment	1	8	225	0.36	40	25920	0.027	712
Site Preparation, Grading and Paving	Rollers	1	8	130	0.38	40	15808	0.027	435
Site Preparation, Grading and Paving	Skid Steer Loaders	2	8	74	0.37	40	17523.2	0.027	482
Site Preparation, Grading and Paving	Tractors/Loaders/Ba	2	8	104	0.37	40	24627.2	0.027	677
Foundation	0	0	8	0	0	80	0	0.027	0
Foundation	Cement and Mortar	4	8	350	0.56	80	501760	0.027	13,792
Foundation	Excavators	2	8	24	0.38	80	11673.6	0.027	321
Foundation	Off-Highway Trucks	3	8	350	0.38	80	255360	0.027	7,019
Foundation	Off-Highway Trucks	1	8	197	0.38	80	47910.4	0.027	1,317
Foundation	Skid Steer Loaders	2	8	74	0.37	80	35046.4	0.027	963
Foundation	Tractors/Loaders/Ba	2	8	104	0.37	80	49254.4	0.027	1,354
Building Construction	Aerial Lifts	1	8	130	0.31	200	64480	0.027	1,772
Building Construction	Aerial Lifts	1	8	49	0.31	200	24304	0.027	668
Building Construction	Cranes	1	8	367	0.29	200	170288	0.027	4,681
Building Construction	Forklifts	1	8	83	0.2	200	26560	0.027	730
Architectural Coating	Forklifts	1	8	83	0.2	260	34528	0.027	949
Architectural Coating	Skid Steer Loaders	1	8	130	0.37	260	100048	0.027	2,750

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
103.74 1	Demolition	Demolition	45019	45069	5	37	Chapel Hill & Mission Dr.
2	Site Preparation, Gra	Site Preparation	45075	45128	5	40	Chapel Hill & Mission Dr.
3	Foundation	Grading	45131	45240	5	80	Chapel Hill & Mission Dr.
4	Building Construction	Building Constru	45243	45520	5	200	Chapel Hill & Mission Dr.
5	Architectural Coating	Architectural Co	45432	45793	5	260	Chapel Hill & Mission Dr.
1	Demolition	Demolition	45278	45331	5	40	Existing Admin & Academic Building
2	Utilities	Site Preparation	45334	45359	5	20	Existing Admin & Academic Building
3	Structure Retrofit	Building Constru	45362	45471	5	80	Existing Admin & Academic Building
4	Exterior Finishes	Paving	45474	45653	5	130	Existing Admin & Academic Building
5	Interior Finishes	Architectural Co	45600	45849	5	180	Existing Admin & Academic Building
1	Demolition	Demolition	45334	45373	5	30	Existing Café
2	Utilities	Site Preparation	45376	45401	5	20	Existing Café
3	Structure Retrofit	Building Constru	45404	45471	5	50	Existing Café
4	Exterior Finishes	Paving	45474	45611	5	100	Existing Café
5	Interior Finishes	Architectural Co	45586	45835	5	180	Existing Café
1	Demolition	Demolition	45208	45275	5	50	Existing Library
2	Utilities	Site Preparation	45278	45303	5	20	Existing Library
3	Structure Retrofit	Building Constru	45306	45401	5	70	Existing Library
4	Exterior Finishes	Architectural Co	45404	45583	5	130	Existing Library
5	Interior Finishes	Architectural Co	45530	45807	5	200	Existing Library
1	Demolition	Demolition	45726	45757	5	24	Fitness & Day Care
2	Utilities	Site Preparation	45751	45793	5	31	Fitness & Day Care
3	Foundations	Building Constru	45796	45849	5	40	Fitness & Day Care
4	Exterior Finishes	Paving	45852	45989	5	100	Fitness & Day Care
5	Interior Finishes	Architectural Co	45980	46241	5	188	Fitness & Day Care
1	Demolition	Demolition	45579	45688	5	80	Hodge/Shuck & Reed/Storer/Shuck
2	Site Preparation, Gra	Site Preparation	45649	45702	5	40	Hodge/Shuck & Reed/Storer/Shuck
3	Foundation	Grading	45691	45870	5	130	Hodge/Shuck & Reed/Storer/Shuck
4	Building Construction	Building Constru	45733	46276	5	390	Hodge/Shuck & Reed/Storer/Shuck
5	Architectural Coating	Architectural Co	45775	46402	5	450	Hodge/Shuck & Reed/Storer/Shuck
1	SURVEY, SITE UTILITIE	Site Preparation	45796	45905	5	80	Landscaping & Renovation
2	CURB & GUTTER, HA	Paving	45908	46129	5	160	Landscaping & Renovation
3	MISC. SITE FURNISHI	Site Preparation	46132	46185	5	40	Landscaping & Renovation
4	IRRIGATION & PLANT	Site Preparation	46195	46597	5	289	Landscaping & Renovation
1	Demolition	Demolition	45656	45681	5	20	New Admin Building
2	Utilities, Grading and	Site Preparation	45684	45723	5	30	New Admin Building
3	Foundation	Grading	45726	45779	5	40	New Admin Building
4	Structure and Exteric	Building Constru	45852	45989	5	100	New Admin Building
5	Interior Finishes	Architectural Co	45894	46101	5	150	New Admin Building
1	Demolition	Demolition	45131	45184	5	40	Residential Care Facility
2	Site Preparation, Gra	Site Preparation	45147	45240	5	68	Residential Care Facility
3	Foundation	Grading	45243	45380	5	100	Residential Care Facility
4	Building Construction	Building Constru	45313	45674	5	260	Residential Care Facility
5	Architectural Coating	Architectural Co	45565	45982	5	300	Residential Care Facility
1	Demolition	Demolition	45355	45408	5	40	Seminary Point
2	Site Preparation, Gra	Site Preparation	45411	45464	5	40	Seminary Point
3	Foundation	Grading	45467	45576	5	80	Seminary Point
4	Building Construction	Building Constru	45509	45758	5	180	Seminary Point
5	Architectural Coating	Architectural Co	45551	45828	5	200	Seminary Point
1	Demolition	Demolition	45243	45296	5	40	Shuck Knoll
2	Site Preparation, Gra	Site Preparation	45299	45352	5	40	Shuck Knoll
3	Foundation	Grading	45355	45464	5	80	Shuck Knoll
4	Building Construction	Building Constru	45397	45646	5	180	Shuck Knoll
5	Architectural Coating	Architectural Co	45439	45716	5	200	Shuck Knoll

Construction Mobile Calculations

Nothing for the user to do here.

Trips and VMT				
Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number
Demolition	10	30	0	6
Site Preparation, Gradingand Paving	11	30	0	6
Foundation	14	50	0	6
Building Construction	4	80	15	0
Architectural Coating	2	150	0	0
Demolition	12	40	0	4
Utilities	3	30	0	2
Structure Retrofit	6	40	13	0
Exterior Finishes	4	80	0	0
Interior Finishes	2	120	0	0
Demolition	6	30	0	2
Utilities	3	30	0	2
Structure Retrofit	4	40	2	0
Exterior Finishes	4	50	0	0
Interior Finishes	2	60	0	0
Demolition	6	40	0	2
Utilities	3	30	0	2
Structure Retrofit	6	40	0	0
Exterior Finishes	4	80	0	0
Interior Finishes	2	80	0	0
Demolition	7	40	0	4
Utilities	7	30	0	2
Foundations	7	40	3	2
Exterior Finishes	4	80	0	0
Interior Finishes	2	80	0	0
Demolition	10	30	0	461
Site Preparation,Grading and Paving	11	30	0	0
Foundation	14	50	0	0
Building Construction	3	80	18	0
Architectural Coating	2	150	0	0
IRRIGATION &PLANTING	4	30	0	0
SURVEY, SITEUTILITIES, GRUB &	7	40	0	4
CURB & GUTTER,HARDSCAPE &	9	20	0	4
MISC. SITEFURNISHINGS	3	15	0	0
Demolition	7	30	0	4
Utilities, Grading andPaving	8	30	0	4
Foundation	7	40	0	4
Structure and ExteriorFinishes	4	60	3	0
Interior Finishes	2	60	0	0
Demolition	10	30	0	6
Site Preparation,Grading and Paving	11	30	0	6
Foundation	14	50	0	6
Building Construction	4	80	1	0
Architectural Coating	2	120	0	0
Demolition	10	30	0	38
Site Preparation,Grading and Paving	11	30	0	0
Foundation	14	50	0	0
Building Construction	4	80	1	0
Architectural Coating	2	150	0	0
Demolition	10	30	0	6
Site Preparation,Grading and Paving	11	30	0	6
Foundation	14	50	0	6
Building Construction	4	80	1	0
Architectural Coating	2	120	0	0

Nothing to do here. This Phase Calculates VMT by Type

Phase Name	Worker VMT	Vendor VMT	Haul VMT
Demolition	324	0	120
Site Preparation, Gradingand Paving	324	0	120
Foundation	540	0	120
Building Construction	864	109.5	0
Architectural Coating	1620	0	0
Demolition	432	0	80
Utilities	324	0	40
Structure Retrofit	432	94.9	0
Exterior Finishes	864	0	0
Interior Finishes	1296	0	0
Demolition	324	0	40
Utilities	324	0	40
Structure Retrofit	432	14.6	0
Exterior Finishes	540	0	0
Interior Finishes	648	0	0
Demolition	432	0	40
Utilities	324	0	40
Structure Retrofit	432	0	0
Exterior Finishes	864	0	0
Interior Finishes	864	0	0
Demolition	432	0	80
Utilities	324	0	40
Foundations	432	21.9	40
Exterior Finishes	864	0	0
Interior Finishes	864	0	0
Demolition	324	0	9220
Site Preparation,Grading and Paving	324	0	0
Foundation	540	0	0
Building Construction	864	131.4	0
Architectural Coating	1620	0	0
IRRIGATION &PLANTING	324	0	0
SURVEY, SITEUTILITIES, GRUB &	432	0	80
CURB & GUTTER,HARDSCAPE &	216	0	80
MISC. SITEFURNISHINGS	162	0	0
Demolition	324	0	80
Utilities, Grading andPaving	324	0	80
Foundation	432	0	80
Structure and ExteriorFinishes	648	21.9	0
Interior Finishes	648	0	0
Demolition	324	0	120
Site Preparation,Grading and Paving	324	0	120
Foundation	540	0	120
Building Construction	864	7.3	0
Architectural Coating	1296	0	0
Demolition	324	0	760
Site Preparation,Grading and Paving	324	0	0
Foundation	540	0	0
Building Construction	864	7.3	0
Architectural Coating	1620	0	0
Demolition	324	0	120
Site Preparation,Grading and Paving	324	0	120
Foundation	540	0	120

Building Construction	864	7.3	0
Architectural Coating	1296	0	0

Nothing to do here. This Phase Calculates Energy from Workers

Phase Name	Total gallons of gasoline	Total gallons of diesel
Demolition	8,475	
Site Preparation, Gradingand Paving	8,475	
Foundation	14,124	
Building Construction	23,070	
Architectural Coating	44,186	
Demolition	11,535	
Utilities	8,651	
Structure Retrofit	11,535	
Exterior Finishes	23,070	
Interior Finishes	35,349	
Demolition	8,651	
Utilities	8,651	
Structure Retrofit	11,535	
Exterior Finishes	14,419	
Interior Finishes	17,674	
Demolition	11,300	
Utilities	8,651	
Structure Retrofit	11,535	
Exterior Finishes	23,070	
Interior Finishes	23,566	
Demolition	11,783	
Utilities	8,837	
Foundations	11,783	
Exterior Finishes	23,566	
Interior Finishes	24,070	
Demolition	8,837	
Site Preparation,Grading and Paving	8,837	
Foundation	14,729	
Building Construction	24,070	
Architectural Coating	46,021	
IRRIGATION &PLANTING	8,837	
SURVEY, SITEUTILITIES, GRUB &	12,035	
CURB & GUTTER,HARDSCAPE &	6,018	
MISC. SITEFURNISHINGS	4,602	
Demolition	8,837	
Utilities, Grading andPaving	8,837	
Foundation	11,783	
Structure and ExteriorFinishes	17,674	
Interior Finishes	18,053	
Demolition	8,475	
Site Preparation,Grading and Paving	8,475	
Foundation	14,419	
Building Construction	23,566	
Architectural Coating	35,349	
Demolition	8,651	
Site Preparation,Grading and Paving	8,651	
Foundation	14,419	
Building Construction	23,566	
Architectural Coating	44,186	
Demolition	8,651	
Site Preparation,Grading and Paving	8,651	
Foundation	14,419	
Building Construction	23,070	
Architectural Coating	35,349	
	886,626	

Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Chapel Hill & Mission Dr.
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Chapel Hill & Mission Dr.
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Chapel Hill & Mission Dr.
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Chapel Hill & Mission Dr.
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Chapel Hill & Mission Dr.
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Admin & Academic Building
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Admin & Academic Building
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Admin & Academic Building
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Admin & Academic Building
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Admin & Academic Building
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Café
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Café
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Café
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Café
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Café
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Library
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Library
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Library
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Library
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Existing Library
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Fitness & Day Care
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Fitness & Day Care
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Fitness & Day Care
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Fitness & Day Care
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Fitness & Day Care
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Hodge/Shuck & Reed/Storer/Shuck
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Hodge/Shuck & Reed/Storer/Shuck
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Hodge/Shuck & Reed/Storer/Shuck
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Hodge/Shuck & Reed/Storer/Shuck
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Hodge/Shuck & Reed/Storer/Shuck
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Landscaping & Renovation
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Landscaping & Renovation
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Landscaping & Renovation
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Landscaping & Renovation
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	New Admin Building
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	New Admin Building
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	New Admin Building
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	New Admin Building
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	New Admin Building
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Residential Care Facility
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Residential Care Facility
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Residential Care Facility
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Residential Care Facility
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Residential Care Facility
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Seminary Point
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Seminary Point
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Seminary Point
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Seminary Point
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Seminary Point
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Shuck Knoll
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Shuck Knoll
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Shuck Knoll
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Shuck Knoll
10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	Shuck Knoll

Nothing to do here. This Looks up MPG by type based on the construction year

Phase Name	Year	Worker MPG	Vendor MPG	Haul MPG
Demolition	2023	26.16	7.31	5.94
Site Preparation, Grading and Paving	2023	26.16	7.31	5.94
Foundation	2023	26.16	7.31	5.94
Building Construction	2024	26.70	7.36	6.02
Architectural Coating	2025	27.28	7.43	6.11
Demolition	2024	26.70	7.36	6.02
Utilities	2024	26.70	7.36	6.02
Structure Retrofit	2024	26.70	7.36	6.02
Exterior Finishes	2024	26.70	7.36	6.02
Interior Finishes	2025	27.28	7.43	6.11
Demolition	2024	26.70	7.36	6.02
Utilities	2024	26.70	7.36	6.02
Structure Retrofit	2024	26.70	7.36	6.02
Exterior Finishes	2024	26.70	7.36	6.02
Interior Finishes	2025	27.28	7.43	6.11
Demolition	2023	26.16	7.31	5.94
Utilities	2024	26.70	7.36	6.02
Structure Retrofit	2024	26.70	7.36	6.02
Exterior Finishes	2024	26.70	7.36	6.02
Interior Finishes	2025	27.28	7.43	6.11
Demolition	2025	27.28	7.43	6.11
Utilities	2025	27.28	7.43	6.11
Foundations	2025	27.28	7.43	6.11
Exterior Finishes	2025	27.28	7.43	6.11
Interior Finishes	2026	27.86	7.51	6.21
Demolition	2025	27.28	7.43	6.11
Site Preparation, Grading and Paving	2025	27.28	7.43	6.11
Foundation	2025	27.28	7.43	6.11
Building Construction	2026	27.86	7.51	6.21
Architectural Coating	2027	28.41	7.58	6.32
IRRIGATION & PLANTING	2025	27.28	7.43	6.11
SURVEY, SITE UTILITIES, GRUB &	2026	27.86	7.51	6.21
CURB & GUTTER, HARDSCAPE &	2026	27.86	7.51	6.21
MISC. SITE FURNISHINGS	2027	28.41	7.58	6.32
Demolition	2025	27.28	7.43	6.11
Utilities, Grading and Paving	2025	27.28	7.43	6.11
Foundation	2025	27.28	7.43	6.11
Structure and Exterior Finishes	2025	27.28	7.43	6.11
Interior Finishes	2026	27.86	7.51	6.21
Demolition	2023	26.16	7.31	5.94
Site Preparation, Grading and Paving	2023	26.16	7.31	5.94
Foundation	2024	26.70	7.36	6.02
Building Construction	2025	27.28	7.43	6.11
Architectural Coating	2025	27.28	7.43	6.11
Demolition	2024	26.70	7.36	6.02
Site Preparation, Grading and Paving	2024	26.70	7.36	6.02
Foundation	2024	26.70	7.36	6.02
Building Construction	2025	27.28	7.43	6.11
Architectural Coating	2025	27.28	7.43	6.11
Demolition	2024	26.70	7.36	6.02
Site Preparation, Grading and Paving	2024	26.70	7.36	6.02
Foundation	2024	26.70	7.36	6.02

Building Construction	2024	26.70	7.36	6.02
Architectural Coating	2025	27.28	7.43	6.11

Nothing to do here. This Phase Calculates Energy from Trucks

Phase Name	Total gallons of gasoline	Total gallons of diesel
Demolition		712
Site Preparation, Gradingand Paving		712
Foundation		712
Building Construction		806
Architectural Coating		0
Demolition		481
Utilities		241
Structure Retrofit		699
Exterior Finishes		0
Interior Finishes		0
Demolition		241
Utilities		241
Structure Retrofit		108
Exterior Finishes		0
Interior Finishes		0
Demolition		237
Utilities		241
Structure Retrofit		0
Exterior Finishes		0
Interior Finishes		0
Demolition		489
Utilities		245
Foundations		407
Exterior Finishes		0
Interior Finishes		0
Demolition		56,360
Site Preparation,Grading and Paving		0
Foundation		0
Building Construction		986
Architectural Coating		0
IRRIGATION &PLANTING		0
SURVEY, SITEUTILITIES, GRUB &		497
CURB & GUTTER,HARDSCAPE &		497
MISC. SITEFURNISHINGS		0
Demolition		489
Utilities, Grading andPaving		489
Foundation		489
Structure and ExteriorFinishes		163
Interior Finishes		0
Demolition		712
Site Preparation,Grading and Paving		712
Foundation		722
Building Construction		54
Architectural Coating		0
Demolition		4,574
Site Preparation,Grading and Paving		0
Foundation		0
Building Construction		54
Architectural Coating		0
Demolition		722
Site Preparation,Grading and Paving		722
Foundation		722
Building Construction		54
Architectural Coating		0
		75,593

Construction Worker Commute MPG Estimate

Nothing for the user to do here.

Summary By Year	Gasoline mpg
2000	20.72
2001	20.87
2002	21.05
2003	21.12
2004	21.15
2005	21.25
2006	21.29
2007	21.37
2008	21.43
2009	21.27
2010	21.50
2011	21.69
2012	21.96
2013	22.30
2014	22.67
2015	23.11
2016	23.57
2017	23.93
2018	24.27
2019	24.55
2020	24.73
2021	25.21
2022	25.66
2023	26.16
2024	26.70
2025	27.28
2026	27.86
2027	28.41
2028	28.95
2029	29.47
2030	29.96
2031	30.42
2032	30.85
2033	31.24
2034	31.61
2035	31.94
2036	32.24
2037	32.51
2038	32.75
2039	32.95
2040	33.13
2041	33.29
2042	33.42
2043	33.54
2044	33.63
2045	33.71
2046	33.78
2047	33.83
2048	33.88
2049	33.92
2050	33.95

Splits from caleemod

LDA	50%
LDT1	25%
LDT2	25%

EMFAC OUTPUT

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Statewide
Region: California
Calendar Year: 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population (Vehicles)	Total VMT (Daily)	Combustion VMT (daily)	Electric VMT (Daily)	Trips/day	EV Kwh/day	Fuel Consumption (1000	Gasoline Gallons/day	MPG	MPG Weighting for Summary
Statewide Totals	2000	LDA	Aggregate	Aggregate	Gasoline	12975810	4.72E+08	4.72E+08	0	60588685	0	20516.23	20,516,230	22.99	11.49363023
Statewide Totals	2000	LDT1	Aggregate	Aggregate	Gasoline	2319618.6	78517211	78517211	0	10534754	0	3922.369	3,922,369	20.02	5.004450222
Statewide Totals	2000	LDT2	Aggregate	Aggregate	Gasoline	3662790.1	1.4E+08	1.4E+08	0	17446453	0	8279.711	8,279,711	16.87	4.2170851
Statewide Totals	2001	LDA	Aggregate	Aggregate	Gasoline	13308544	4.7E+08	4.7E+08	0	62270350	0	20262	20,261,999	23.21	11.60404089
Statewide Totals	2001	LDT1	Aggregate	Aggregate	Gasoline	2278707.9	74688563	74688563	0	10357793	0	3717.996	3,717,996	20.09	5.022097536
Statewide Totals	2001	LDT2	Aggregate	Aggregate	Gasoline	3920021.4	1.45E+08	1.45E+08	0	18709138	0	8536.151	8,536,151	16.98	4.245057641
Statewide Totals	2002	LDA	Aggregate	Aggregate	Gasoline	13337654	4.9E+08	4.9E+08	0	62474621	0	20891.4	20,891,400	23.44	11.7217823
Statewide Totals	2002	LDT1	Aggregate	Aggregate	Gasoline	2148790.3	73247239	73247239	0	9780555	0	3623.053	3,623,053	20.22	5.054247725
Statewide Totals	2002	LDT2	Aggregate	Aggregate	Gasoline	3918885.9	1.49E+08	1.49E+08	0	18684596	0	8741.187	8,741,187	17.09	4.272105528
Statewide Totals	2003	LDA	Aggregate	Aggregate	Gasoline	13289987	4.76E+08	4.76E+08	0	62230479	0	20188.22	20,188,222	23.56	11.78115803
Statewide Totals	2003	LDT1	Aggregate	Aggregate	Gasoline	2113483.2	69150105	69150105	0	9563720	0	3422.43	3,422,430	20.20	5.051243964
Statewide Totals	2003	LDT2	Aggregate	Aggregate	Gasoline	4205849.4	1.56E+08	1.56E+08	0	20045006	0	9098.822	9,098,822	17.16	4.28884293
Statewide Totals	2004	LDA	Aggregate	Aggregate	Gasoline	13615726	4.75E+08	4.75E+08	0	63711787	0	20162.36	20,162,360	23.55	11.77675932
Statewide Totals	2004	LDT1	Aggregate	Aggregate	Gasoline	2016966.8	63407313	63407313	0	9072282	0	3142.455	3,142,455	20.18	5.044409232
Statewide Totals	2004	LDT2	Aggregate	Aggregate	Gasoline	4427127.3	1.6E+08	1.6E+08	0	21093497	0	9263.983	9,263,983	17.30	4.324985499
Statewide Totals	2005	LDA	Aggregate	Aggregate	Gasoline	13394011	4.69E+08	4.69E+08	0	62846346	0	19824.99	19,824,985	23.64	11.82216502
Statewide Totals	2005	LDT1	Aggregate	Aggregate	Gasoline	1930843	59325461	59325461	0	8632924	0	2936.383	2,936,383	20.20	5.050896808
Statewide Totals	2005	LDT2	Aggregate	Aggregate	Gasoline	4491068	1.62E+08	1.62E+08	0	21437527	0	9269.614	9,269,614	17.51	4.378475905
Statewide Totals	2006	LDA	Aggregate	Aggregate	Gasoline	13511187	4.61E+08	4.61E+08	0	63396761	0	19496.15	19,496,150	23.65	11.8261619
Statewide Totals	2006	LDT1	Aggregate	Aggregate	Gasoline	1884731.6	55555554	55555554	0	8375969	0	2749.635	2,749,635	20.20	5.051174936
Statewide Totals	2006	LDT2	Aggregate	Aggregate	Gasoline	4533327.2	1.59E+08	1.59E+08	0	21589220	0	8981.543	8,981,543	17.65	4.412183856
Statewide Totals	2007	LDA	Aggregate	Aggregate	Gasoline	13518233	4.56E+08	4.56E+08	0	63474358	0	19235.68	19,235,683	23.72	11.8618668
Statewide Totals	2007	LDT1	Aggregate	Aggregate	Gasoline	1808196.5	52115470	52115470	0	8004644	0	2574.685	2,574,685	20.24	5.060373043
Statewide Totals	2007	LDT2	Aggregate	Aggregate	Gasoline	4605095.4	1.58E+08	1.58E+08	0	21902433	0	8889.164	8,889,164	17.80	4.450618734
Statewide Totals	2008	LDA	Aggregate	Aggregate	Gasoline	13291596	4.38E+08	4.38E+08	0	62347769	0	18419.82	18,419,822	23.76	11.87863404
Statewide Totals	2008	LDT1	Aggregate	Aggregate	Gasoline	1764504.2	50303576	50303576	0	7833550	0	2476.568	2,476,568	20.31	5.077951454
Statewide Totals	2008	LDT2	Aggregate	Aggregate	Gasoline	4573823	1.52E+08	1.52E+08	0	21660972	0	8490.782	8,490,782	17.89	4.472628896
Statewide Totals	2009	LDA	Aggregate	Aggregate	Gasoline	13178663	4.33E+08	4.33E+08	0	61570531	0	18398.75	18,398,751	23.56	11.7806128
Statewide Totals	2009	LDT1	Aggregate	Aggregate	Gasoline	1687519.2	48512286	48512286	0	7480953	0	2404.227	2,404,227	20.18	5.044479453
Statewide Totals	2009	LDT2	Aggregate	Aggregate	Gasoline	4539096.6	1.5E+08	1.5E+08	0	21361890	0	8432.176	8,432,176	17.77	4.441303056
Statewide Totals	2010	LDA	Aggregate	Aggregate	Gasoline	13034486	4.43E+08	4.43E+08	0	60728534	0	18590.06	18,590,057	23.83	11.91637164
Statewide Totals	2010	LDT1	Aggregate	Aggregate	Gasoline	1631795.4	48585578	48585578	0	7217402	0	2387.937	2,387,937	20.35	5.086564337
Statewide Totals	2010	LDT2	Aggregate	Aggregate	Gasoline	4539398.6	1.54E+08	1.54E+08	0	21253478	0	8570.865	8,570,865	17.98	4.494344329
Statewide Totals	2011	LDA	Aggregate	Aggregate	Gasoline	12971612	4.41E+08	4.41E+08	0	60326141	0	18338.86	18,338,858	24.05	12.02324163

Statewide Totals	2011	LDT1	Aggregate	Aggregate	Gasoline	1538031.3	45260246	45260246	0	6757554	0	2217.304	2,217,304	20.41	5.103071065
Statewide Totals	2011	LDT2	Aggregate	Aggregate	Gasoline	4629309.3	1.57E+08	1.57E+08	0	21614427	0	8605.074	8,605,074	18.25	4.562741243
Statewide Totals	2012	LDA	Aggregate	Aggregate	Gasoline	13123742	4.49E+08	4.49E+08	0	61007955	0	18414.04	18,414,042	24.36	12.18035523
Statewide Totals	2012	LDT1	Aggregate	Aggregate	Gasoline	1495749	44087669	44087669	0	6555116	0	2140.364	2,140,364	20.60	5.14955361
Statewide Totals	2012	LDT2	Aggregate	Aggregate	Gasoline	4710185.7	1.6E+08	1.6E+08	0	21936673	0	8632.117	8,632,117	18.52	4.629687491
Statewide Totals	2013	LDA	Aggregate	Aggregate	Gasoline	13410044	4.61E+08	4.61E+08	0	62351338	0	18623.82	18,623,819	24.75	12.37611947
Statewide Totals	2013	LDT1	Aggregate	Aggregate	Gasoline	1476705.4	43684741	43684741	0	6465723	0	2095.323	2,095,323	20.85	5.212173823
Statewide Totals	2013	LDT2	Aggregate	Aggregate	Gasoline	4879350.7	1.66E+08	1.66E+08	0	22705560	0	8812.588	8,812,588	18.84	4.711173434
Statewide Totals	2014	LDA	Aggregate	Aggregate	Gasoline	13609448	4.74E+08	4.74E+08	0	63353029	0	18848.24	18,848,235	25.15	12.57454283
Statewide Totals	2014	LDT1	Aggregate	Aggregate	Gasoline	1443740.8	43518044	43518044	0	6348191	0	2052.956	2,052,956	21.20	5.299437024
Statewide Totals	2014	LDT2	Aggregate	Aggregate	Gasoline	5024240.2	1.72E+08	1.72E+08	0	23359456	0	8985.447	8,985,447	19.19	4.796795331
Statewide Totals	2015	LDA	Aggregate	Aggregate	Gasoline	13950023	5.02E+08	5.02E+08	0	65070535	0	19591.69	19,591,694	25.61	12.80402759
Statewide Totals	2015	LDT1	Aggregate	Aggregate	Gasoline	1517351.5	48349820	48349820	0	6731863	0	2221.926	2,221,926	21.76	5.440079602
Statewide Totals	2015	LDT2	Aggregate	Aggregate	Gasoline	5118410.8	1.78E+08	1.78E+08	0	23711718	0	9168.528	9,168,528	19.46	4.864448461
Statewide Totals	2016	LDA	Aggregate	Aggregate	Gasoline	13947603	5.37E+08	5.37E+08	0	65141591	0	20585.09	20,585,085	26.09	13.04675365
Statewide Totals	2016	LDT1	Aggregate	Aggregate	Gasoline	1517821.5	52647460	52647460	0	6776157	0	2361.341	2,361,341	22.30	5.573894354
Statewide Totals	2016	LDT2	Aggregate	Aggregate	Gasoline	4986778.3	1.84E+08	1.84E+08	0	23042597	0	9300.721	9,300,721	19.81	4.951852751
Statewide Totals	2017	LDA	Aggregate	Aggregate	Gasoline	14039797	5.22E+08	5.22E+08	0	65699640	0	19730.11	19,730,105	26.47	13.23279334
Statewide Totals	2017	LDT1	Aggregate	Aggregate	Gasoline	1521398.9	50202273	50202273	0	6771081	0	2236.859	2,236,859	22.44	5.610799102
Statewide Totals	2017	LDT2	Aggregate	Aggregate	Gasoline	5407712.4	1.95E+08	1.95E+08	0	25120590	0	9590.224	9,590,224	20.35	5.087300564
Statewide Totals	2018	LDA	Aggregate	Aggregate	Gasoline	13941722	5.19E+08	5.19E+08	0	65176046	0	19362.52	19,362,515	26.79	13.39600069
Statewide Totals	2018	LDT1	Aggregate	Aggregate	Gasoline	1489629.2	49263752	49263752	0	6627586	0	2169.801	2,169,801	22.70	5.676069152
Statewide Totals	2018	LDT2	Aggregate	Aggregate	Gasoline	5563436.7	2.03E+08	2.03E+08	0	25889043	0	9748.538	9,748,538	20.79	5.197724538
Statewide Totals	2019	LDA	Aggregate	Aggregate	Gasoline	13805991	5.14E+08	5.14E+08	0	64465682	0	18954.62	18,954,624	27.09	13.54663886
Statewide Totals	2019	LDT1	Aggregate	Aggregate	Gasoline	1540249.4	49062095	49062095	0	6750703	0	2161.819	2,161,819	22.69	5.673704326
Statewide Totals	2019	LDT2	Aggregate	Aggregate	Gasoline	5806444.3	2.15E+08	2.15E+08	0	27151190	0	10090.86	10,090,863	21.31	5.327854536
Statewide Totals	2020	LDA	Aggregate	Aggregate	Gasoline	13489082	4.44E+08	4.44E+08	0	62803005	0	16273.28	16,273,279	27.27	13.63699805
Statewide Totals	2020	LDT1	Aggregate	Aggregate	Gasoline	1481704.8	41864928	41864928	0	6473872	0	1836.136	1,836,136	22.80	5.70014021
Statewide Totals	2020	LDT2	Aggregate	Aggregate	Gasoline	5815850.1	1.92E+08	1.92E+08	0	27160595	0	8882.65	8,882,650	21.59	5.39698953
Statewide Totals	2021	LDA	Aggregate	Aggregate	Gasoline	13261741	5.08E+08	5.08E+08	0	61620786	0	18311.2	18,311,197	27.77	13.88308411
Statewide Totals	2021	LDT1	Aggregate	Aggregate	Gasoline	1431765.1	47246755	47246755	0	6242429	0	2037.585	2,037,585	23.19	5.796904905
Statewide Totals	2021	LDT2	Aggregate	Aggregate	Gasoline	5866044.7	2.26E+08	2.26E+08	0	27380953	0	10233.37	10,233,366	22.13	5.533331279
Statewide Totals	2022	LDA	Aggregate	Aggregate	Gasoline	13143383	5.1E+08	5.1E+08	0	61016807	0	18072.11	18,072,106	28.23	14.11548652
Statewide Totals	2022	LDT1	Aggregate	Aggregate	Gasoline	1390471.9	46559751	46559751	0	6056811	0	1979.607	1,979,607	23.52	5.879922813
Statewide Totals	2022	LDT2	Aggregate	Aggregate	Gasoline	5974705.2	2.34E+08	2.34E+08	0	27900440	0	10346.59	10,346,587	22.66	5.66564166
Statewide Totals	2023	LDA	Aggregate	Aggregate	Gasoline	13036208	5.1E+08	5.1E+08	0	60476336	0	17745.3	17,745,304	28.75	14.37723482
Statewide Totals	2023	LDT1	Aggregate	Aggregate	Gasoline	1352184.6	45737126	45737126	0	5886607	0	1914.263	1,914,263	23.89	5.973203681
Statewide Totals	2023	LDT2	Aggregate	Aggregate	Gasoline	6085858.7	2.41E+08	2.41E+08	0	28427214	0	10396.52	10,396,519	23.22	5.805978328
Statewide Totals	2024	LDA	Aggregate	Aggregate	Gasoline	12932359	5.08E+08	5.08E+08	0	59956651	0	17319.74	17,319,737	29.34	14.66908253
Statewide Totals	2024	LDT1	Aggregate	Aggregate	Gasoline	1316921.6	44795753	44795753	0	5731283	0	1842.694	1,842,694	24.31	6.077482856
Statewide Totals	2024	LDT2	Aggregate	Aggregate	Gasoline	6196167.7	2.47E+08	2.47E+08	0	28942872	0	10373.49	10,373,487	23.82	5.954616283
Statewide Totals	2025	LDA	Aggregate	Aggregate	Gasoline	12837663	5.04E+08	5.04E+08	0	59480990	0	16815.89	16,815,895	29.96	14.98025233
Statewide Totals	2025	LDT1	Aggregate	Aggregate	Gasoline	1284221.6	43707489	43707489	0	5587632	0	1765.785	1,765,785	24.75	6.188109696
Statewide Totals	2025	LDT2	Aggregate	Aggregate	Gasoline	6307223.7	2.51E+08	2.51E+08	0	29454216	0	10286.47	10,286,468	24.43	6.106946935
Statewide Totals	2026	LDA	Aggregate	Aggregate	Gasoline	12771098	5E+08	5E+08	0	59152857	0	16345.16	16,345,163	30.60	15.30138018
Statewide Totals	2026	LDT1	Aggregate	Aggregate	Gasoline	1253937.2	42656831	42656831	0	5456153	0	1692.107	1,692,107	25.21	6.302323132
Statewide Totals	2026	LDT2	Aggregate	Aggregate	Gasoline	6421310.2	2.55E+08	2.55E+08	0	29974810	0	10188.38	10,188,380	25.02	6.255339919
Statewide Totals	2027	LDA	Aggregate	Aggregate	Gasoline	12713197	4.98E+08	4.98E+08	0	58870071	0	15956.11	15,956,112	31.21	15.60401239
Statewide Totals	2027	LDT1	Aggregate	Aggregate	Gasoline	1225903	41758053	41758053	0	5335952	0	1627.758	1,627,758	25.65	6.413432425
Statewide Totals	2027	LDT2	Aggregate	Aggregate	Gasoline	6533169.8	2.59E+08	2.59E+08	0	30476806	0	10123.05	10,123,051	25.56	6.390838895
Statewide Totals	2028	LDA	Aggregate	Aggregate	Gasoline	12663213	4.96E+08	4.96E+08	0	58628536	0	15592.93	15,592,926	31.81	15.90368652
Statewide Totals	2028	LDT1	Aggregate	Aggregate	Gasoline	1200266.3	40926999	40926999	0	5226264	0	1567.488	1,567,488	26.11	6.527481946
Statewide Totals	2028	LDT2	Aggregate	Aggregate	Gasoline	6642218.7	2.62E+08	2.62E+08	0	30959234	0	10055.18	10,055,183	26.08	6.521125353
Statewide Totals	2029	LDA	Aggregate	Aggregate	Gasoline	12617064	4.94E+08	4.94E+08	0	58412991	0	15266.56	15,266,563	32.37	16.18634813
Statewide Totals	2029	LDT1	Aggregate	Aggregate	Gasoline	1175800.9	40158564	40158564	0	5124068	0	1512.014	1,512,014	26.56	6.639912947
Statewide Totals	2029	LDT2	Aggregate	Aggregate	Gasoline	6745633.9	2.65E+08	2.65E+08	0	31410486	0	9991.011	9,991,011	26.57	6.641583077
Statewide Totals	2030	LDA	Aggregate	Aggregate	Gasoline	12575248	4.93E+08	4.93E+08	0	58223663	0	14972.54	14,972,539	32.90	16.45228182
Statewide Totals	2030	LDT1	Aggregate	Aggregate	Gasoline	1152397	39443601	39443601	0	5028510	0	1460.73	1,460,730	27.00	6.750668057
Statewide Totals	2030	LDT2	Aggregate	Aggregate	Gasoline	6843054.7	2.68E+08	2.68E+08	0	31829792	0	9928.128	9,928,128	27.02	6.753805373
Statewide Totals	2031	LDA	Aggregate	Aggregate	Gasoline	12540563	4.91E+08	4.91E+08	0	58071999	0	14712.67	14,712,672	33.40	16.70107169
Statewide Totals	2031	LDT1	Aggregate	Aggregate	Gasoline	1130193.3	38797046	38797046	0	4940596	0	1413.95	1,413,950	27.44	6.859693136
Statewide Totals	2031	LDT2	Aggregate	Aggregate	Gasoline	6932398.1	2.71E+08	2.71E+08	0	32212705	0	9866.535	9,866,535	27.43	6.858571059
Statewide Totals	2032	LDA	Aggregate	Aggregate	Gasoline	12513071	4.91E+08	4.91E+08	0	57960126	0	14488.29	14,488,288	33.86	16.92978493
Statewide Totals	2032	LDT1	Aggregate	Aggregate	Gasoline	1110385	38222875	38222875	0	4862361	0	1372.238	1,372,238	27.85	6.963603073
Statewide Totals	2032	LDT2	Aggregate	Aggregate	Gasoline	7015202.5	2.73E+08	2.73E+08	0	32565470	0	9808.871	9,808,871	27.82	6.955485648
Statewide Totals	2033	LDA	Aggregate	Aggregate	Gasoline	12494333	4.9E+08	4.9E+08	0	57890194	0	14299.33	14,299,329	34.27	17.13521473
Statewide Totals	2033	LDT1	Aggregate	Aggregate	Gasoline	1093114.1	37726555	37726555	0	4794438	0	1335.71	1,335,710	28.24	7.061144542
Statewide Totals	2033	LDT2	Aggregate	Aggregate	Gasoline	7089140.6	2.75E+08	2.75E+08	0	32880364	0	9754.348	9,754,348	28.18	7.044120797
Statewide Totals	2034	LDA	Aggregate	Aggregate	Gasoline	12482174	4.9E+08	4.9E+08	0	57856507	0	14136.61	14,136,608	34.65	17.32481597
Statewide Totals	2034	LDT1	Aggregate	Aggregate	Gasoline	1075761.6	37260628	37260628	0	4728819	0	1301.498	1,301,498	28.63	7.157256933
Statewide Totals	2034	LDT2	Aggregate	Aggregate	Gasoline	7156982.6	2.77E+08	2.77E+08	0	33168275	0	9702.64	9,702,640	28.51	7.12637988
Statewide Totals	2035	LDA	Aggregate	Aggregate	Gasoline	12476484	4.9E+08	4.9E+08	0	57857638	0	14000.66	14,000,655	34.99	17.49479979
Statewide Totals	2035	LDT1	Aggregate	Aggregate	Gasoline	1061126.7	36866507	36866507	0	4673216	0	1271.86	1,271,860	28.99	7.246574236
Statewide Totals	2035	LDT2	Aggregate	Aggregate	Gasoline	7218592.4	2.78E+08	2.78E+08	0	33430020	0	9655.302	9,655,302	28.80	7.201077269
Statewide Totals	2036	LDA	Aggregate	Aggregate	Gasoline	12477791	4.9E+08	4.9E+08	0	57893988	0	13890.53	13,890,530	35.29	17.64343647
Statewide Totals	2036	LDT1	Aggregate	Aggregate	Gasoline	1046982.9	36506486	36506486	0	4621148	0	1245.011	1,245,011	29.32	7.330553727
Statewide Totals	2036	LDT2	Aggregate	Aggregate	Gasoline	7275368.7	2.79E+08	2.79E+08	0	33670259	0	9614.024	9,614,024	29.07	7.267225575
Statewide Totals	2037	LDA	Aggregate	Aggregate	Gasoline	12490536	4.91E+08	4.91E+08	0	57976254	0	13802.13	13,802,135	35.55	17.77415638
Statewide Totals	2037	LDT1	Aggregate	Aggregate	Gasoline	1035140	36202323	36202323	0	4577742	0	1221.663	1,221,663	29.63	7.408411446
Statewide Totals	2037	LDT2	Aggregate	Aggregate	Gasoline	7328229.5	2.81E+08	2.81E+08	0	33892451	0	9576.673	9,576,673	29.31	7.326692895
Statewide Totals	2038	LDA	Aggregate	Aggregate	Gasoline	12511403	4.91E+08	4.91E+08	0	58093670	0	13731.91	13,731,912	35.78	17.88802657
Statewide Totals	2038	LDT1	Aggregate	Aggregate	Gasoline	1023974.3	35927224	35927224	0	4538423	0	1200.754	1,200,754	29.92	7.48013688
Statewide Totals	2038	LDT2	Aggregate	Aggregate	Gasoline	7377592	2.82E+08	2.82E+08	0	34100550	0	9544.384	9,544,384	29.52	7.379083194
Statewide Totals	2039	LDA	Aggregate	Aggregate	Gasoline	12539053	4.92E+08	4.92E+08	0	58240175	0	13680.25	13,680,247	35.97	17.9830397
Statewide Totals	2039	LDT1	Aggregate	Aggregate	Gasoline	1013974.7	35688994	35688994	0	4504498	0	1182.384	1,182,384	30.18	7.545983022
Statewide Totals	2039	LDT2	Aggregate	Aggregate	Gasoline	7426167.8	2.83E+08	2.83E+08	0	34304574	0	9519.977	9,519,977	29.70	7.424100531
Statewide Totals	2040	LDA	Aggregate	Aggregate	Gasoline	12570406	4.93E+08	4.93E+08	0	58404644	0	13642.41	13,642,412	36.13	18.06274812
Statewide Totals	2040	LDT1	Aggregate	Aggregate	Gasoline	1005802.1	35490911	35490911	0	4477502	0	1166.65	1,166,650	30.42	7.60530347
Statewide Totals	2040	LDT2	Aggregate	Aggregate	Gasoline	7472298.3	2.84E+08	2.84E+08	0	34499623	0	9500.96	9,500,960	29.85	7.462911182
Statewide Totals	2041	LDA	Aggregate	Aggregate	Gasoline	12607994	4.94E+08	4.94E+08	0	58591151	0	13612.54	13,612,542	36.27	18.13348408
Statewide Totals	2041	LDT1	Aggregate	Aggregate	Gasoline	998776.34	35320742	35320742	0	4455256	0	1152.606	1,152,606	30.64	7.661063289
Statewide Totals	2041	LDT2	Aggregate	Aggregate	Gasoline	7516536.6	2.84E+08	2.84E+08	0	34685784	0	9484.08	9,484,080	29.99	7.497698078
Statewide Totals	2042	LDA	Aggregate	Aggregate	Gasoline	12646467	4.95E+08	4.95E+08	0	58783069	0	13596.93	13,596,933	36.37	18.18721277
Statewide Totals	2042	LDT1	Aggregate	Aggregate	Gasoline	992033.03	35170081	35170081	0	4435128	0	1140.376	1,140,376	30.84	7.710195576
Statewide Totals	2042	LDT2	Aggregate	Aggregate	Gasoline	7554641.6	2.85E+08	2.85E+08	0	34851810	0	9471.25	9,471,250	30.11	7.526526767
Statewide Totals	2043	LDA	Aggregate	Aggregate	Gasoline	12686001	4.95E+08	4.95E+08	0	58978985	0	13588.55	13,588,554	36.46	18.23053384
Statewide Totals	2043	LDT1	Aggregate	Aggregate	Gasoline	985532.69	35031803	35031803	0	4416861	0	1129.334	1,129,334	31.02	7.754971448
Statewide Totals	2043	LDT2	Aggregate	Aggregate	Gasoline	7590580.6	2.86E+08	2.86E+08	0	35008917	0	9461.623	9,461,623	30.20	7.550924209

Statewide Totals	2044	LDA	Aggregate	Aggregate	Gasoline	12726626	4.96E+08	4.96E+08	0	59177438	0	13586.46	13,586,464	36.53	18.26503558
Statewide Totals	2044	LDT1	Aggregate	Aggregate	Gasoline	981072.19	34932815	34932815	0	4405235	0	1120.61	1,120,610	31.17	7.79325899
Statewide Totals	2044	LDT2	Aggregate	Aggregate	Gasoline	7624260.6	2.86E+08	2.86E+08	0	35157351	0	9454.976	9,454,976	30.29	7.571605843
Statewide Totals	2045	LDA	Aggregate	Aggregate	Gasoline	12765277	4.97E+08	4.97E+08	0	59369327	0	13588.7	13,588,696	36.59	18.29272806
Statewide Totals	2045	LDT1	Aggregate	Aggregate	Gasoline	977494.51	34854646	34854646	0	4396912	0	1113.113	1,113,113	31.31	7.828192212
Statewide Totals	2045	LDT2	Aggregate	Aggregate	Gasoline	7654516.7	2.87E+08	2.87E+08	0	35294410	0	9449.755	9,449,755	30.36	7.58967587
Statewide Totals	2046	LDA	Aggregate	Aggregate	Gasoline	12804510	4.98E+08	4.98E+08	0	59560592	0	13594.08	13,594,083	36.63	18.31458766
Statewide Totals	2046	LDT1	Aggregate	Aggregate	Gasoline	975118.78	34797982	34797982	0	4392619	0	1107.059	1,107,059	31.43	7.858201578
Statewide Totals	2046	LDT2	Aggregate	Aggregate	Gasoline	7684536.4	2.87E+08	2.87E+08	0	35428337	0	9447.325	9,447,325	30.42	7.604775789
Statewide Totals	2047	LDA	Aggregate	Aggregate	Gasoline	12843643	4.99E+08	4.99E+08	0	59748938	0	13601.17	13,601,165	36.66	18.33183354
Statewide Totals	2047	LDT1	Aggregate	Aggregate	Gasoline	973713.35	34759774	34759774	0	4391685	0	1102.237	1,102,237	31.54	7.883915705
Statewide Totals	2047	LDT2	Aggregate	Aggregate	Gasoline	7712817.4	2.88E+08	2.88E+08	0	35555244	0	9445.583	9,445,583	30.47	7.617880791
Statewide Totals	2048	LDA	Aggregate	Aggregate	Gasoline	12881527	4.99E+08	4.99E+08	0	59931087	0	13609.63	13,609,626	36.69	18.34560054
Statewide Totals	2048	LDT1	Aggregate	Aggregate	Gasoline	974120.36	34748220	34748220	0	4395774	0	1099.092	1,099,092	31.62	7.90384357
Statewide Totals	2048	LDT2	Aggregate	Aggregate	Gasoline	7739565.3	2.88E+08	2.88E+08	0	35675837	0	9444.638	9,444,638	30.52	7.629371567
Statewide Totals	2049	LDA	Aggregate	Aggregate	Gasoline	12919645	5E+08	5E+08	0	60110740	0	13618.66	13,618,662	36.71	18.35663069
Statewide Totals	2049	LDT1	Aggregate	Aggregate	Gasoline	975176.52	34745438	34745438	0	4401691	0	1096.714	1,096,714	31.68	7.920352582
Statewide Totals	2049	LDT2	Aggregate	Aggregate	Gasoline	7763910.3	2.89E+08	2.89E+08	0	35788038	0	9443.838	9,443,838	30.56	7.639309746
Statewide Totals	2050	LDA	Aggregate	Aggregate	Gasoline	12955079	5.01E+08	5.01E+08	0	60280110	0	13626.87	13,626,871	36.73	18.36561487
Statewide Totals	2050	LDT1	Aggregate	Aggregate	Gasoline	976830.11	34749369	34749369	0	4409241	0	1094.993	1,094,993	31.73	7.933694467
Statewide Totals	2050	LDT2	Aggregate	Aggregate	Gasoline	7787615.7	2.89E+08	2.89E+08	0	35896549	0	9443.481	9,443,481	30.59	7.647814004

Construction Truck MPG Estimate

Nothing for the user to do here.

Diesel MPG

Summary By Year	Vendor (MD/HD)	Haul (HD)
2000	6.91	5.57
2001	6.93	5.61
2002	6.96	5.62
2003	6.94	5.61
2004	6.95	5.62
2005	6.97	5.65
2006	6.96	5.64
2007	6.96	5.65
2008	6.99	5.77
2009	6.97	5.76
2010	6.97	5.75
2011	7.00	5.76
2012	7.03	5.77
2013	7.16	5.88
2014	7.13	5.83
2015	7.10	5.81
2016	7.10	5.81
2017	7.11	5.80
2018	7.09	5.76
2019	7.10	5.76
2020	7.18	5.77
2021	7.21	5.80
2022	7.24	5.86
2023	7.31	5.94
2024	7.36	6.02
2025	7.43	6.11
2026	7.51	6.21
2027	7.58	6.32
2028	7.66	6.43
2029	7.75	6.55
2030	7.83	6.66
2031	7.91	6.76
2032	7.99	6.86
2033	8.06	6.96
2034	8.14	7.04
2035	8.20	7.12
2036	8.27	7.19
2037	8.33	7.24
2038	8.38	7.30
2039	8.43	7.34
2040	8.48	7.38
2041	8.52	7.41
2042	8.56	7.43
2043	8.59	7.45
2044	8.62	7.47
2045	8.65	7.49
2046	8.68	7.50
2047	8.70	7.51
2048	8.73	7.52
2049	8.75	7.53
2050	8.76	7.54

Splits from caleemod

Vendors/Deliveries	MHDT	50%
	HHDT	50%
Haul Trucks	MHDT	0%
	HHDT	100%

EMFAC OUTPUT

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Statewide
Region: California

Calendar Year: 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

															MPG Weighting for Summary	
Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population (Vehicles)	Total VMT (Daily)	Combustion VMT (daily)	Electric VMT (Daily)	Trips/day	EV Kwh/day	Fuel Consumption (1000 gallons/day)	Diesel Gallons/day	MPG	Vendor	Haul
Statewide Totals	2000	HHDT	Aggregate	Aggregate	Diesel	178113	34780710	34780710	0	2615210	0	6239.85326	6,239,853	5.57	2.79	5.57
Statewide Totals	2000	MHDT	Aggregate	Aggregate	Diesel	168694.8	10002589	10002589	0	2030696	0	1211.81064	1,211,811	8.25	4.13	0.00
Statewide Totals	2001	HHDT	Aggregate	Aggregate	Diesel	180027.9	34720083	34720083	0	2597929	0	6194.08059	6,194,081	5.61	2.80	5.61
Statewide Totals	2001	MHDT	Aggregate	Aggregate	Diesel	183194.1	9985419	9985419	0	2209555	0	1209.46545	1,209,465	8.26	4.13	0.00
Statewide Totals	2002	HHDT	Aggregate	Aggregate	Diesel	174735.4	35500867	35500867	0	2547079	0	6314.6438	6,314,644	5.62	2.81	5.62
Statewide Totals	2002	MHDT	Aggregate	Aggregate	Diesel	176957.7	10213234	10213234	0	2108494	0	1231.67175	1,231,672	8.29	4.15	0.00
Statewide Totals	2003	HHDT	Aggregate	Aggregate	Diesel	197939.1	34527310	34527310	0	2825932	0	6149.85229	6,149,852	5.61	2.81	5.61
Statewide Totals	2003	MHDT	Aggregate	Aggregate	Diesel	206041.2	9934237	9934237	0	2448737	0	1203.31107	1,203,311	8.26	4.13	0.00
Statewide Totals	2004	HHDT	Aggregate	Aggregate	Diesel	206852.9	36874324	36874324	0	2992787	0	6564.93667	6,564,937	5.62	2.81	5.62
Statewide Totals	2004	MHDT	Aggregate	Aggregate	Diesel	219426.4	10610216	10610216	0	2616773	0	1282.32412	1,282,324	8.27	4.14	0.00
Statewide Totals	2005	HHDT	Aggregate	Aggregate	Diesel	217552.4	38447311	38447311	0	3192910	0	6802.97601	6,802,976	5.65	2.83	5.65
Statewide Totals	2005	MHDT	Aggregate	Aggregate	Diesel	235520.8	11066971	11066971	0	2822446	0	1335.62464	1,335,625	8.29	4.14	0.00
Statewide Totals	2006	HHDT	Aggregate	Aggregate	Diesel	236178.9	38564195	38564195	0	3491086	0	6834.29416	6,834,294	5.64	2.82	5.64
Statewide Totals	2006	MHDT	Aggregate	Aggregate	Diesel	255032.2	11105570	11105570	0	3066526	0	1343.10143	1,343,101	8.27	4.13	0.00
Statewide Totals	2007	HHDT	Aggregate	Aggregate	Diesel	239155.3	39869284	39869284	0	3518917	0	7053.89315	7,053,893	5.65	2.83	5.65
Statewide Totals	2007	MHDT	Aggregate	Aggregate	Diesel	262968.8	11484741	11484741	0	3159087	0	1388.89125	1,388,891	8.27	4.13	0.00
Statewide Totals	2008	HHDT	Aggregate	Aggregate	Diesel	237103	36689871	36689871	0	3443893	0	6361.02369	6,361,024	5.77	2.88	5.77
Statewide Totals	2008	MHDT	Aggregate	Aggregate	Diesel	270527.7	10575725	10575725	0	3242547	0	1288.15075	1,288,151	8.21	4.11	0.00
Statewide Totals	2009	HHDT	Aggregate	Aggregate	Diesel	220484	33207200	33207200	0	3181262	0	5768.9707	5,768,971	5.76	2.88	5.76
Statewide Totals	2009	MHDT	Aggregate	Aggregate	Diesel	256088.6	9576914	9576914	0	3056749	0	1170.46619	1,170,466	8.18	4.09	0.00
Statewide Totals	2010	HHDT	Aggregate	Aggregate	Diesel	229437.4	33342764	33342764	0	3382274	0	5800.33832	5,800,338	5.75	2.87	5.75
Statewide Totals	2010	MHDT	Aggregate	Aggregate	Diesel	255248.4	9621197	9621197	0	3046173	0	1174.90095	1,174,901	8.19	4.09	0.00
Statewide Totals	2011	HHDT	Aggregate	Aggregate	Diesel	230366.4	33956560	33956560	0	3424172	0	5891.21437	5,891,214	5.76	2.88	5.76
Statewide Totals	2011	MHDT	Aggregate	Aggregate	Diesel	254233.9	9807401	9807401	0	3031418	0	1190.71478	1,190,715	8.24	4.12	0.00
Statewide Totals	2012	HHDT	Aggregate	Aggregate	Diesel	233463.4	33729156	33729156	0	3516518	0	5845.10146	5,845,101	5.77	2.89	5.77
Statewide Totals	2012	MHDT	Aggregate	Aggregate	Diesel	253766	9752040	9752040	0	3021990	0	1175.03851	1,175,039	8.30	4.15	0.00
Statewide Totals	2013	HHDT	Aggregate	Aggregate	Diesel	241346.7	36264801	36264801	0	3632540	0	6163.20088	6,163,201	5.88	2.94	5.88
Statewide Totals	2013	MHDT	Aggregate	Aggregate	Diesel	255742.9	10529119	10529119	0	3041833	0	1248.96764	1,248,968	8.43	4.22	0.00
Statewide Totals	2014	HHDT	Aggregate	Aggregate	Diesel	250724.3	36387810	36387810	0	3824767	0	6236.25395	6,236,254	5.83	2.92	5.83
Statewide Totals	2014	MHDT	Aggregate	Aggregate	Diesel	258616	10571553	10571553	0	3071193	0	1255.86891	1,255,869	8.42	4.21	0.00
Statewide Totals	2015	HHDT	Aggregate	Aggregate	Diesel	262464	36298335	36298335	0	4036940	0	6245.29195	6,245,292	5.81	2.91	5.81
Statewide Totals	2015	MHDT	Aggregate	Aggregate	Diesel	264588.1	10561670	10561670	0	3142075	0	1258.52645	1,258,526	8.39	4.20	0.00
Statewide Totals	2016	HHDT	Aggregate	Aggregate	Diesel	268393.3	38160748	38160748	0	4167285	0	6570.41395	6,570,414	5.81	2.90	5.81
Statewide Totals	2016	MHDT	Aggregate	Aggregate	Diesel	270110.3	11122010	11122010	0	3205899	0	1325.86266	1,325,863	8.39	4.19	0.00
Statewide Totals	2017	HHDT	Aggregate	Aggregate	Diesel	274958.2	40169432	40169432	0	4302856	0	6920.00471	6,920,005	5.80	2.90	5.80
Statewide Totals	2017	MHDT	Aggregate	Aggregate	Diesel	275936.3	11695011	11695011	0	3294422	0	1390.07694	1,390,077	8.41	4.21	0.00
Statewide Totals	2018	HHDT	Aggregate	Aggregate	Diesel	283895.6	39174308	39174308	0	4484968	0	6796.88974	6,796,890	5.76	2.88	5.76
Statewide Totals	2018	MHDT	Aggregate	Aggregate	Diesel	276404.7	11405354	11405354	0	3292792	0	1355.28142	1,355,281	8.42	4.21	0.00
Statewide Totals	2019	HHDT	Aggregate	Aggregate	Diesel	270487.7	39244412	39244412	0	4305247	0	6814.03613	6,814,036	5.76	2.88	5.76

Statewide Totals	2019	MHDT	Aggregate	Aggregate	Diesel	276258.4	11442537	11442537	0	3265874	0	1356.77321	1,356,773	8.43	4.22	0.00
Statewide Totals	2020	HHDT	Aggregate	Aggregate	Diesel	274445.5	39811871	39811871	0	4414648	0	6905.23005	6,905,230	5.77	2.88	5.77
Statewide Totals	2020	MHDT	Aggregate	Aggregate	Diesel	271763.6	11585754	11585754	0	3221070	0	1347.46398	1,347,464	8.60	4.30	0.00
Statewide Totals	2021	HHDT	Aggregate	Aggregate	Diesel	280809.4	40518102	40518102	0	4535953	0	6983.59098	6,983,591	5.80	2.90	5.80
Statewide Totals	2021	MHDT	Aggregate	Aggregate	Diesel	268011	11734361	11734361	0	3180879	0	1362.89603	1,362,896	8.61	4.30	0.00
Statewide Totals	2022	HHDT	Aggregate	Aggregate	Diesel	289296.3	41279363	41279363	0	4687045	0	7047.17767	7,047,178	5.86	2.93	5.86
Statewide Totals	2022	MHDT	Aggregate	Aggregate	Diesel	269999.8	11888587	11888587	0	3210829	0	1377.29922	1,377,299	8.63	4.32	0.00
Statewide Totals	2023	HHDT	Aggregate	Aggregate	Diesel	296921.7	42074959	42074959	0	4821966	0	7087.04929	7,087,049	5.94	2.97	5.94
Statewide Totals	2023	MHDT	Aggregate	Aggregate	Diesel	273233.3	12042684	12042684	0	3255560	0	1387.50445	1,387,504	8.68	4.34	0.00
Statewide Totals	2024	HHDT	Aggregate	Aggregate	Diesel	307158.3	42799671	42799671	0	4993670	0	7111.76559	7,111,766	6.02	3.01	6.02
Statewide Totals	2024	MHDT	Aggregate	Aggregate	Diesel	277729.4	12176259	12176259	0	3314941	0	1397.76998	1,397,770	8.71	4.36	0.00
Statewide Totals	2025	HHDT	Aggregate	Aggregate	Diesel	315961.6	43487031	43487031	0	5139397	0	7114.08091	7,114,081	6.11	3.06	6.11
Statewide Totals	2025	MHDT	Aggregate	Aggregate	Diesel	283391.9	12272300	12272300	0	3387538	0	1401.45124	1,401,451	8.76	4.38	0.00
Statewide Totals	2026	HHDT	Aggregate	Aggregate	Diesel	323622.8	44147348	44147348	0	5266387	0	7107.92312	7,107,923	6.21	3.11	6.21
Statewide Totals	2026	MHDT	Aggregate	Aggregate	Diesel	288372.5	12351100	12351100	0	3451074	0	1402.92464	1,402,925	8.80	4.40	0.00
Statewide Totals	2027	HHDT	Aggregate	Aggregate	Diesel	330234.7	44752671	44752671	0	5376907	0	7083.14812	7,083,148	6.32	3.16	6.32
Statewide Totals	2027	MHDT	Aggregate	Aggregate	Diesel	292488.2	12389016	12389016	0	3503647	0	1400.2356	1,400,236	8.85	4.42	0.00
Statewide Totals	2028	HHDT	Aggregate	Aggregate	Diesel	335719.6	45293436	45293436	0	5470645	0	7040.53069	7,040,531	6.43	3.22	6.43
Statewide Totals	2028	MHDT	Aggregate	Aggregate	Diesel	295113.6	12360648	12360648	0	3537773	0	1389.37409	1,389,374	8.90	4.45	0.00
Statewide Totals	2029	HHDT	Aggregate	Aggregate	Diesel	340009.8	45771755	45771755	0	5547523	0	6991.47585	6,991,476	6.55	3.27	6.55
Statewide Totals	2029	MHDT	Aggregate	Aggregate	Diesel	295954.7	12259160	12259160	0	3549747	0	1370.4327	1,370,433	8.95	4.47	0.00
Statewide Totals	2030	HHDT	Aggregate	Aggregate	Diesel	343223	46195497	46195497	0	5609765	0	6939.9951	6,939,995	6.66	3.33	6.66
Statewide Totals	2030	MHDT	Aggregate	Aggregate	Diesel	295033.9	12086147	12086147	0	3540144	0	1343.497	1,343,497	9.00	4.50	0.00
Statewide Totals	2031	HHDT	Aggregate	Aggregate	Diesel	347000.5	46971560	46971560	0	5685306	0	6944.36313	6,944,363	6.76	3.38	6.76
Statewide Totals	2031	MHDT	Aggregate	Aggregate	Diesel	293727.2	11930554	11930554	0	3526137	0	1318.0645	1,318,065	9.05	4.53	0.00
Statewide Totals	2032	HHDT	Aggregate	Aggregate	Diesel	350357.3	47743653	47743653	0	5756980	0	6955.30395	6,955,304	6.86	3.43	6.86
Statewide Totals	2032	MHDT	Aggregate	Aggregate	Diesel	291109.3	11750779	11750779	0	3496043	0	1289.9338	1,289,934	9.11	4.55	0.00
Statewide Totals	2033	HHDT	Aggregate	Aggregate	Diesel	353488.5	48559936	48559936	0	5828242	0	6980.32186	6,980,322	6.96	3.48	6.96
Statewide Totals	2033	MHDT	Aggregate	Aggregate	Diesel	287220.6	11547153	11547153	0	3450479	0	1259.22341	1,259,223	9.17	4.59	0.00
Statewide Totals	2034	HHDT	Aggregate	Aggregate	Diesel	356554.7	49434540	49434540	0	5902380	0	7020.75751	7,020,758	7.04	3.52	7.04
Statewide Totals	2034	MHDT	Aggregate	Aggregate	Diesel	282262.5	11319757	11319757	0	3391948	0	1226.44792	1,226,448	9.23	4.61	0.00
Statewide Totals	2035	HHDT	Aggregate	Aggregate	Diesel	359761.9	50374336	50374336	0	5980942	0	7078.46111	7,078,461	7.12	3.56	7.12
Statewide Totals	2035	MHDT	Aggregate	Aggregate	Diesel	276502.1	11078238	11078238	0	3323913	0	1192.67832	1,192,678	9.29	4.64	0.00
Statewide Totals	2036	HHDT	Aggregate	Aggregate	Diesel	362908.2	51251124	51251124	0	6060300	0	7132.27287	7,132,273	7.19	3.59	7.19
Statewide Totals	2036	MHDT	Aggregate	Aggregate	Diesel	270503.8	10855294	10855294	0	3253058	0	1161.12218	1,161,122	9.35	4.67	0.00
Statewide Totals	2037	HHDT	Aggregate	Aggregate	Diesel	366473	52202885	52202885	0	6148266	0	7206.13411	7,206,134	7.24	3.62	7.24
Statewide Totals	2037	MHDT	Aggregate	Aggregate	Diesel	264677.2	10659167	10659167	0	3184474	0	1133.13276	1,133,133	9.41	4.70	0.00
Statewide Totals	2038	HHDT	Aggregate	Aggregate	Diesel	370536.1	53224068	53224068	0	6245673	0	7294.87759	7,294,878	7.30	3.65	7.30
Statewide Totals	2038	MHDT	Aggregate	Aggregate	Diesel	259226.3	10486246	10486246	0	3120599	0	1107.63645	1,107,636	9.47	4.73	0.00
Statewide Totals	2039	HHDT	Aggregate	Aggregate	Diesel	375037.1	54310649	54310649	0	6352022	0	7400.55981	7,400,560	7.34	3.67	7.34
Statewide Totals	2039	MHDT	Aggregate	Aggregate	Diesel	254277.1	10340345	10340345	0	3063047	0	1085.83023	1,085,830	9.52	4.76	0.00
Statewide Totals	2040	HHDT	Aggregate	Aggregate	Diesel	380017.3	55464869	55464869	0	6468132	0	7520.43999	7,520,440	7.38	3.69	7.38
Statewide Totals	2040	MHDT	Aggregate	Aggregate	Diesel	249717.3	10214210	10214210	0	3010472	0	1066.48976	1,066,490	9.58	4.79	0.00
Statewide Totals	2041	HHDT	Aggregate	Aggregate	Diesel	385544	56691482	56691482	0	6594813	0	7654.81218	7,654,812	7.41	3.70	7.41
Statewide Totals	2041	MHDT	Aggregate	Aggregate	Diesel	245696	10105529	10105529	0	2964607	0	1049.40299	1,049,403	9.63	4.81	0.00
Statewide Totals	2042	HHDT	Aggregate	Aggregate	Diesel	391634	57995763	57995763	0	6731647	0	7803.79189	7,803,792	7.43	3.72	7.43
Statewide Totals	2042	MHDT	Aggregate	Aggregate	Diesel	242148.9	10015200	10015200	0	2924709	0	1034.66785	1,034,668	9.68	4.84	0.00
Statewide Totals	2043	HHDT	Aggregate	Aggregate	Diesel	398293.6	59377495	59377495	0	6878845	0	7966.40647	7,966,406	7.45	3.73	7.45
Statewide Totals	2043	MHDT	Aggregate	Aggregate	Diesel	239166.6	9950762	9950762	0	2891825	0	1022.98731	1,022,987	9.73	4.86	0.00
Statewide Totals	2044	HHDT	Aggregate	Aggregate	Diesel	405462.4	60834234	60834234	0	7035643	0	8141.49936	8,141,499	7.47	3.74	7.47
Statewide Totals	2044	MHDT	Aggregate	Aggregate	Diesel	236737.4	9910440	9910440	0	2865857	0	1014.09613	1,014,096	9.77	4.89	0.00
Statewide Totals	2045	HHDT	Aggregate	Aggregate	Diesel	413177.8	62367937	62367937	0	7201774	0	8329.14282	8,329,143	7.49	3.74	7.49
Statewide Totals	2045	MHDT	Aggregate	Aggregate	Diesel	234923.2	9898341	9898341	0	2847509	0	1008.38041	1,008,380	9.82	4.91	0.00
Statewide Totals	2046	HHDT	Aggregate	Aggregate	Diesel	421414	63975214	63975214	0	7376963	0	8528.15877	8,528,159	7.50	3.75	7.50
Statewide Totals	2046	MHDT	Aggregate	Aggregate	Diesel	233657.4	9912056	9912056	0	2835943	0	1005.56801	1,005,568	9.86	4.93	0.00
Statewide Totals	2047	HHDT	Aggregate	Aggregate	Diesel	430170.2	65655403	65655403	0	7560784	0	8738.42586	8,738,426	7.51	3.76	7.51
Statewide Totals	2047	MHDT	Aggregate	Aggregate	Diesel	232960.1	9950946	9950946	0	2831342	0	1005.67245	1,005,672	9.89	4.95	0.00
Statewide Totals	2048	HHDT	Aggregate	Aggregate	Diesel	439454	67407269	67407269	0	7753031	0	8959.37727	8,959,377	7.52	3.76	7.52
Statewide Totals	2048	MHDT	Aggregate	Aggregate	Diesel	232860.4	10014245	10014245	0	2834055	0	1008.58743	1,008,587	9.93	4.96	0.00
Statewide Totals	2049	HHDT	Aggregate	Aggregate	Diesel	449284.9	69230433	69230433	0	7953883	0	9191.04474	9,191,045	7.53	3.77	7.53
Statewide Totals	2049	MHDT	Aggregate	Aggregate	Diesel	233352.1	10100592	10100592	0	2843959	0	1014.15464	1,014,155	9.96	4.98	0.00
Statewide Totals	2050	HHDT	Aggregate	Aggregate	Diesel	459625.8	71123346	71123346	0	8162888	0	9432.74384	9,432,744	7.54	3.77	7.54
Statewide Totals	2050	MHDT	Aggregate	Aggregate	Diesel	234387.9	10207488	10207488	0	2860504	0	1022.06125	1,022,061	9.99	4.99	0.00

Construction Equipment Fuel Estimate

Nothing for the user to do here.

Diesel Gallons per Horsepower Hour

Summary By Year	gallons per hour	gallons per hp-hr
2000	3.105	0.028
2001	3.093	0.028
2002	3.090	0.028
2003	3.089	0.028
2004	3.089	0.028
2005	3.088	0.028
2006	3.088	0.028
2007	3.087	0.028
2008	3.087	0.028
2009	3.085	0.028
2010	3.084	0.028
2011	3.083	0.028
2012	3.081	0.028
2013	3.081	0.028
2014	3.079	0.028
2015	3.077	0.028
2016	3.076	0.028
2017	3.075	0.028
2018	3.073	0.028
2019	3.073	0.028
2020	3.073	0.028
2021	3.073	0.027
2022	3.074	0.027
2023	3.074	0.027
2024	3.074	0.027
2025	3.074	0.027
2026	3.074	0.027
2027	3.074	0.027
2028	3.074	0.027
2029	3.073	0.027
2030	3.073	0.027
2031	3.073	0.027
2032	3.073	0.027
2033	3.073	0.027
2034	3.073	0.027
2035	3.073	0.027
2036	3.073	0.027
2037	3.073	0.027
2038	3.073	0.027
2039	3.073	0.027
2040	3.073	0.027
2041	3.073	0.027
2042	3.073	0.027
2043	3.073	0.027
2044	3.073	0.027
2045	3.073	0.027
2046	3.073	0.027
2047	3.073	0.027
2048	3.073	0.027
2049	3.073	0.027
2050	3.073	0.027

EMFAC OUTPUT

Model Output: OFFROAD2021 (v1.0.3) Emissions Inventory
Region Type: Statewide
Region: California

Calendar Year: 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050
Scenario: All Adopted Rules - Exhaust
Vehicle Classification: OFFROAD2021 Equipment Types
Units: tons/day for Emissions, gallons/year for Fuel, hours/year for Activity, Horsepower-hours/year for Horsepower-hours

										Fuel Consumption Estimate	
Region	Calendar Year	Vehicle Category	Model Year	Horsepower Bin	Fuel	Fuel Consumption	Total_Activity_hpy	Total_Population	Horsepower_Hours_hhpy	gallons per hour	gallons per hp-hr
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	2416328.083	420068.7806	1265.818808	92847821.06	5.75222	0.026
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	5720781.469	1659297.653	3812.203828	383405287	3.447713	0.015
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	14150521.09	2996600.801	7022.22201	637625362.7	4.722191	0.022
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	25441422.32	8122056.67	13656.09572	1280275178	3.132387	0.020
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	9566787.449	2400280.443	4415.618425	449785905.5	3.985696	0.021
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	1239.605161	0	87.90518529	0		
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	1329.016617	0	556.0299763	0		
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	28702.15467	19866.95	50.6514421	655609.35	1.444719	0.044
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	138.0258996	0	23.20976405	0		
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	908.4898718	0	36.88	0		
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	2486.401099	0	340.4001953	0		
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	257.5131951	0	14.27	0		
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	439.224977	0	36.45253818	0		
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	852.910093	0	321.9900099	0		
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	6191.209732	0	994.5975056	0		
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	158.8657651	0	8.60426591	0		
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	24190.91758	7018.95	2828.192654	259701.15	3.446515	0.093
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	53215.89087	0	4037.731749	0		
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	4674.877188	0	266.4917206	0		
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	5905.168905	0	457.4707407	0		
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	5373971.912	1902923.737	3106.786356	235278344.7	2.824061	0.023
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	32299814.81	4050019.44	3251.802492	1630961734	7.975225	0.020
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	7205865.457	1935542.715	4703.192795	333123332.9	3.722917	0.022
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	1696943.919	608609.2667	1670.143457	78821433.48	2.788232	0.022
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	987611.7702	406238.2319	946.2917304	53455047.2	2.431115	0.018
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	4400256.342	2758119.652	8698.510218	221401052	1.595383	0.020
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	4777699.3	2282668.494	8771.018285	229416343.7	2.093032	0.021
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	2817343.427	550478.8169	775.4676388	136553430.9	5.117987	0.021
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	38858512.44	10284675.85	11367.79027	2083332316	3.778292	0.019
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	25290279.71	2757446.39	6384.396804	1010978690	9.171631	0.025
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	4632937.131	3651240.919	11373.93502	238867761.5	1.268866	0.019
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	532379.938	129506.4087	522.3038772	34098270.46	4.110839	0.016
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	35494855.05	18925156.52	34303.6897	1847405958	1.875538	0.019
Statewide Totals	2000	Construction and	Aggregate	Aggregate	Diesel	1462617.295	689103.4963	2060.949652	54172752.47	2.122493	0.027
Statewide Totals	2000	Industrial - Aerial l	Aggregate	Aggregate	Diesel	2251045.577	2167296.558	7729.51162	136258460	1.038642	0.017
Statewide Totals	2000	Industrial - Forklift	Aggregate	Aggregate	Diesel	9472318.407	10131859.5	14497.44543	906745391	0.934904	0.010
Statewide Totals	2000	Industrial - Misc -	Aggregate	Aggregate	Diesel	4608.85793	0	1180.025846	0		
Statewide Totals	2000	Industrial - Misc -	Aggregate	Aggregate	Diesel	4505.56932	0	341.3333489	0		
Statewide Totals	2000	Industrial - Misc -	Aggregate	Aggregate	Diesel	1836.559635	0	217.1158836	0		

Statewide Totals	2000	Industrial - Other (	Aggregate	Aggregate	Diesel	4574265.323	2858355.466	3691.376692	251966901.9	1.600314	0.018
Statewide Totals	2000	Industrial - Other (	Aggregate	Aggregate	Diesel	2681903.033	781272.3396	1110.364141	130845036.8	3.432738	0.020
Statewide Totals	2000	Light Commercial	Aggregate	Aggregate	Diesel	868256.9851	759054	1084.913039	28084998	1.143867	0.031
Statewide Totals	2000	Light Commercial	Aggregate	Aggregate	Diesel	3990253.736	1527897.3	13330.42519	50420610.9	2.611598	0.079
Statewide Totals	2000	Light Commercial	Aggregate	Aggregate	Diesel	20132.28045	15264.3	397.0478764	580043.4	1.318913	0.035
Statewide Totals	2000	Light Commercial	Aggregate	Aggregate	Diesel	2209980.165	797525	6941.190797	29508425	2.771048	0.075
Statewide Totals	2000	Light Commercial	Aggregate	Aggregate	Diesel	4478787.589	2992956.2	7906.850602	137675985.2	1.496443	0.033
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	2573894.207	447004.7227	1318.170965	98800666.93	5.758092	0.026
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	6088832.261	1765751.283	3969.870226	408126881.3	3.448296	0.015
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	15039628.44	3188658.759	7312.64941	677764278.9	4.7166	0.022
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	27074582.21	8643762.222	14220.88909	1362966952	3.132268	0.020
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	10179864.1	2554040.551	4598.241045	478662323	3.985788	0.021
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	1137.210378	0	87.85562619	0		
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	1271.829155	0	566.7400254	0		
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	29195.09023	20253.85	51.94072982	668377.05	1.441459	0.044
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	131.622718	0	23.74576504	0		
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	774.8122992	0	37.64000193	0		
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	2176.911267	0	347.7999918	0		
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	245.1839615	0	14.49000074	0		
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	405.4828915	0	37.20945659	0		
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	774.7520344	0	328.2500303	0		
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	5502.598172	0	1010.771767	0		
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	129.9104583	0	8.043751694	0		
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	22120.87214	7186.85	2883.702413	265913.45	3.077965	0.083
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	48541.10061	0	4121.578618	0		
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	4407.820885	0	271.5612404	0		
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	4757.340263	0	451.9606261	0		
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	5718772.732	2024914.84	3235.277863	250450079.6	2.824204	0.023
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	34392277.01	4309559.522	3386.291624	1735220732	7.980462	0.020
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	7665456.293	2059566.393	4897.709011	354552177.9	3.721879	0.022
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	1806288.025	647581.9062	1739.217807	83870799.36	2.789281	0.022
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	1050847.568	432264.8791	985.4287794	56903055.43	2.431027	0.018
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	4682134.487	2934869.551	9058.266105	235596358.1	1.595347	0.020
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	5084483.992	2427849.642	9133.772985	244049646.2	2.094233	0.021
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	3000272.593	585764.724	807.5396881	145532565	5.121976	0.021
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	41385847.04	10943571.08	11837.94313	2219332818	3.78175	0.019
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	26903492.92	2934067.837	6648.444817	1075304477	9.169349	0.025
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	4930991.122	3885423.763	11844.34202	254301300.6	1.2691	0.019
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	566596.0652	137819.3941	543.9054951	36330994.7	4.111149	0.016
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	37775464.85	20138758.66	35722.43314	1966441041	1.875759	0.019
Statewide Totals	2001	Construction and	Aggregate	Aggregate	Diesel	1555861.926	733209.7377	2146.187095	57642455.38	2.121988	0.027
Statewide Totals	2001	Industrial - Aerial I	Aggregate	Aggregate	Diesel	2395525.376	2306401.058	8049.935185	145003368.1	1.038642	0.017
Statewide Totals	2001	Industrial - Forklift	Aggregate	Aggregate	Diesel	10080284.18	10782156.87	15098.43077	965005425.9	0.934904	0.010
Statewide Totals	2001	Industrial - Misc -	Aggregate	Aggregate	Diesel	4334.522658	0	1190.311947	0		
Statewide Totals	2001	Industrial - Misc -	Aggregate	Aggregate	Diesel	3941.203699	0	346.0786494	0		
Statewide Totals	2001	Industrial - Misc -	Aggregate	Aggregate	Diesel	1603.963114	0	217.14805	0		
Statewide Totals	2001	Industrial - Other (	Aggregate	Aggregate	Diesel	4867857.306	3041814.489	3844.401118	268080414.7	1.600314	0.018
Statewide Totals	2001	Industrial - Other (	Aggregate	Aggregate	Diesel	2854036.736	831417.0686	1156.393807	139297625.3	3.432738	0.020
Statewide Totals	2001	Light Commercial	Aggregate	Aggregate	Diesel	878196.3671	768284.85	1098.112788	28426539.45	1.143061	0.031
Statewide Totals	2001	Light Commercial	Aggregate	Aggregate	Diesel	4035757.36	1546362.65	13492.03348	51029967.45	2.609839	0.079
Statewide Totals	2001	Light Commercial	Aggregate	Aggregate	Diesel	20343.24291	15454.1	401.8275694	587255.8	1.316365	0.035
Statewide Totals	2001	Light Commercial	Aggregate	Aggregate	Diesel	2235138.705	807292.4	7025.144385	29869818.8	2.768685	0.075
Statewide Totals	2001	Light Commercial	Aggregate	Aggregate	Diesel	4530006.285	3029255.45	8002.386139	139345750.7	1.495419	0.033
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	2559346.691	443561.4548	1311.568971	98089573.61	5.769993	0.026
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	6042975.295	1752093.501	3949.987327	405043049.2	3.449003	0.015
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	14929156.89	3164131.537	7276.024367	672531692.4	4.718248	0.022
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	26862080.93	8577162.822	14149.66447	1353058017	3.131814	0.020
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	10103031.29	2534477.473	4575.210982	475498593.6	3.986238	0.021
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	1035.534285	0	87.77215026	0		
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	1214.855103	0	577.7199041	0		
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	29741.48304	20691.85	53.06525053	682831.05	1.437353	0.044
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	125.3146108	0	24.2783164	0		
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	646.9155479	0	38.28999595	0		
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	1902.619699	0	355.5848953	0		
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	233.6678286	0	14.73999844	0		
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	370.3877977	0	37.83000883	0		
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	700.8187891	0	334.5299812	0		
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	4849.460425	0	1026.075659	0		
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	103.9047379	0	7.599762964	0		
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	21983.27178	7332.85	2939.055047	271315.45	2.997916	0.081
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	44001.84048	0	4212.450132	0		
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	4116.497088	0	276.6273422	0		
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	3782.629164	0	451.2778668	0		
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	5672296.421	2009322.079	3219.074134	248384352.4	2.82299	0.023
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	34118975.94	4276341.889	3369.33155	1721087034	7.978543	0.020
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	7604133.353	2043716.078	4873.179078	351840316.7	3.720739	0.022
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	1791487.597	642621.5723	1730.50702	83245940.51	2.78778	0.022
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	1042791.3	428903.0825	980.4933081	56470376.96	2.431298	0.018
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	4647012.35	2912296.415	9012.898227	233862326.2	1.595652	0.020
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	5045814.45	2409286.561	9088.026935	242223793.3	2.094319	0.021
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	2979518.17	581256.9703	803.4951655	144700932.1	5.125991	0.021
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	41107304.12	10859643.53	11778.65338	2204424620	3.785327	0.019
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	26692697.59	2911615.931	6615.14641	1067124643	9.167657	0.025
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	4892807.293	3854224.081	11785.02022	252296454.7	1.269466	0.019
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	560910.0737	136750.3717	541.1813714	35985210.07	4.101708	0.016
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	37471190.67	19983500.12	35543.5191	1951458262	1.875106	0.019
Statewide Totals	2002	Construction and	Aggregate	Aggregate	Diesel	1543274.133	727575.6732	2135.438023	57163764.87	2.121118	0.027
Statewide Totals	2002	Industrial - Aerial I	Aggregate	Aggregate	Diesel	2377030.003	2288593.796	8009.355675	143884784.9	1.038642	0.017
Statewide Totals	2002	Industrial - Forklift	Aggregate	Aggregate	Diesel	10002456.32	10698909.99	15022.31998	957589962.6	0.934904	0.010
Statewide Totals	2002	Industrial - Misc -	Aggregate	Aggregate	Diesel	4082.691541	0	1197.725866	0		
Statewide Totals	2002	Industrial - Misc -	Aggregate	Aggregate	Diesel	3516.009456	0	347.547258	0		
Statewide Totals	2002	Industrial - Misc -	Aggregate	Aggregate	Diesel	1392.883468	0	212.1992888	0		
Statewide Totals	2002	Industrial - Other (	Aggregate	Aggregate	Diesel	4830273.551	3018329.247	3825.021593	265996403.5	1.600314	0.018
Statewide Totals	2002	Industrial - Other (	Aggregate	Aggregate	Diesel	2832001.288	824997.8634	1150.564457	138213195.8	3.432738	0.020
Statewide Totals	2002	Light Commercial	Aggregate	Aggregate	Diesel	888090.26	777336.85	1111.102658	28761463.45	1.142478	0.031
Statewide Totals	2002	Light Commercial	Aggregate	Aggregate	Diesel	4081084.246	1564813.4	13652.34147	51638842.2	2.608033	0.079
Statewide Totals	2002	Light Commercial	Aggregate	Aggregate	Diesel	20538.56978	15684.05	406.5871737	595993.9	1.30952	0.034
Statewide Totals	2002	Light Commercial	Aggregate	Aggregate	Diesel	2260183.857	816837.15	7108.577738	30222974.55	2.766994	0.075
Statewide Totals	2002	Light Commercial	Aggregate	Aggregate	Diesel	4580910.097	3065255.4	8097.541896	141001748.4	1.494463	0.032
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	2633567.532	456380.9906	1336.099533	101024012.5	5.770546	0.026
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	6218165.087	1802772.203	4023.864807	416829836.6	3.449224	0.015
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	15343953.07	3255672.485	7412.109447	692186587.8	4.71299	0.022
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	27653384.85	8825240.052	14414.30875	1393002672	3.133443	0.020
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	10392342.44	2607758.629	4660.782157	489742099.3	3.985163	0.021
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	932.365371	0	87.54844104	0		
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	1158.176854	0	588.6599273	0		
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	30296.46863	21067.8	54.18821036	695237.4	1.438046	0.044
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	118.2139619	0	24.7709678	0		
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	535.2178944	0	39.00999841	0		
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	1834.217458	0	363.9634097	0		

Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	222.885996	0	15.00999939	0		
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	337.7241006	0	38.46747984	0		
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	636.7887183	0	340.8299869	0		
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	4445.995057	0	1040.807563	0		
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	87.51196299	0	7.5685375	0		
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	22284.41686	7471.55	2994.38549	276447.35	2.982569	0.081
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	39834.46999	0	4300.166534	0		
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	3818.28887	0	281.7758843	0		
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	3304.917108	0	456.0421334	0		
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	5833286.497	2067450.373	3279.281184	255501491.8	2.821488	0.023
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	35089499.64	4400034.793	3432.348897	1769109464	7.974823	0.020
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	7821715.175	2102858.126	4964.323216	361727958.4	3.719564	0.022
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	1842953.42	661233.2428	1762.873073	85646059.27	2.787146	0.022
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	1072768.687	441334.2384	998.8316896	58081527.51	2.43074	0.018
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	4782409.088	2996559.001	9181.46844	240669698.6	1.595967	0.020
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	5191513.645	2479585.414	9258.002297	249302980	2.093702	0.021
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	3065599.939	598057.2833	818.5231119	148922794.8	5.12593	0.021
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	42307054.74	11173683.25	11998.95212	2266571881	3.786312	0.019
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	27459207.17	2995799.283	6738.870945	1098433979	9.165904	0.025
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	5032260.213	3966980.821	12005.43804	259588391.1	1.268537	0.019
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	576793.0695	140683.8148	551.3032053	37043789.22	4.099925	0.016
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	38540735.21	20560796.93	36208.29734	2007894927	1.874477	0.019
Statewide Totals	2003	Construction and	Aggregate	Aggregate	Diesel	1587706.61	748590.7584	2175.377589	58841378.54	2.120927	0.027
Statewide Totals	2003	Industrial - Aerial l	Aggregate	Aggregate	Diesel	2445912.918	2354913.957	8159.576244	148054867.4	1.038642	0.017
Statewide Totals	2003	Industrial - Forklift	Aggregate	Aggregate	Diesel	10292313.13	11008949.04	15304.07317	985358449.3	0.934904	0.010
Statewide Totals	2003	Industrial - Misc -	Aggregate	Aggregate	Diesel	3842.015395	0	1205.776466	0		
Statewide Totals	2003	Industrial - Misc -	Aggregate	Aggregate	Diesel	3231.485147	0	347.3891073	0		
Statewide Totals	2003	Industrial - Misc -	Aggregate	Aggregate	Diesel	1272.850186	0	205.9208732	0		
Statewide Totals	2003	Industrial - Other (	Aggregate	Aggregate	Diesel	4970247.941	3105796.093	3896.762311	273691552.5	1.600314	0.018
Statewide Totals	2003	Industrial - Other l	Aggregate	Aggregate	Diesel	2914068.617	848905.1165	1172.144026	142150483.4	3.432738	0.020
Statewide Totals	2003	Light Commercial	Aggregate	Aggregate	Diesel	898821.5836	787148.05	1125.412373	29124477.85	1.141871	0.031
Statewide Totals	2003	Light Commercial	Aggregate	Aggregate	Diesel	4130066.996	1584611	13825.12905	52292163	2.60636	0.079
Statewide Totals	2003	Light Commercial	Aggregate	Aggregate	Diesel	20764.67763	15881.15	411.6768572	603483.7	1.307505	0.034
Statewide Totals	2003	Light Commercial	Aggregate	Aggregate	Diesel	2287374.418	827181.25	7199.04062	30605706.25	2.765264	0.075
Statewide Totals	2003	Light Commercial	Aggregate	Aggregate	Diesel	4635966.479	3104098.7	8199.867206	142788540.2	1.493498	0.032
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	2815370.267	487102.8389	1393.551825	108048539.8	5.779827	0.026
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	6636688.458	1924075.458	4196.891031	444976894.8	3.449287	0.015
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	16383583.01	3474667.371	7730.830224	739570388.3	4.715151	0.022
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	29517125.78	9419131.738	15034.12416	1486576645	3.133742	0.020
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	11099335.16	2783170.482	4861.195834	523704729.8	3.988018	0.021
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	836.4071159	0	87.53414902	0		
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	1103.814396	0	599.5399946	0		
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	30799.95156	21480.25	55.24194602	708848.25	1.433873	0.043
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	110.1937442	0	25.15432563	0		
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	505.8953734	0	39.70000244	0		
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	1802.322098	0	371.1407856	0		
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	212.1528294	0	15.33000094	0		
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	306.4650323	0	39.09470769	0		
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	624.1903297	0	347.2700383	0		
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	4126.076221	0	1056.958723	0		
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	74.09917672	0	7.656891305	0		
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	22713.70622	7599.3	3049.728296	281174.1	2.988921	0.081
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	37805.01545	0	4383.419608	0		
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	3518.682787	0	287.225301	0		
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	3207.515066	0	463.2471646	0		
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	6224391.461	2206519.525	3420.290305	272749587.8	2.820909	0.023
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	37458784.05	4696022.636	3579.939932	1889982877	7.976704	0.020
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	8352258.883	2244313.891	5177.789161	386061507.8	3.72152	0.022
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	1966377.406	705666.8794	1838.676632	91365865.52	2.786552	0.022
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	1144922.078	471028.63	1041.781462	62002848.38	2.430685	0.018
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	5105923.339	3198043.071	9576.27167	256999313.8	1.596577	0.020
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	5542084.568	2646306.871	9656.096483	266177416.9	2.094271	0.021
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	3276956.165	638315.5908	853.7196134	159061800.9	5.133755	0.021
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	45185854.72	11925275.56	12514.90717	2419495804	3.789083	0.019
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	29301522.17	3197241.922	7028.642459	1173100552	9.164625	0.025
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	5371754.507	4233707.317	12521.67198	277134576.9	1.268806	0.019
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	615914.1904	150163.7348	575.0092483	39530429.25	4.101617	0.016
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	41138149.37	21944372.02	37765.25447	2144229322	1.874656	0.019
Statewide Totals	2004	Construction and	Aggregate	Aggregate	Diesel	1695078.807	798970.0337	2268.918846	62820449.53	2.12158	0.027
Statewide Totals	2004	Industrial - Aerial l	Aggregate	Aggregate	Diesel	2610682.342	2513553.217	8511.204627	158033736.6	1.038642	0.017
Statewide Totals	2004	Industrial - Forklift	Aggregate	Aggregate	Diesel	10985656.91	11750569.14	15963.58615	1051731824	0.934904	0.010
Statewide Totals	2004	Industrial - Misc -	Aggregate	Aggregate	Diesel	3702.831124	0	1214.419023	0		
Statewide Totals	2004	Industrial - Misc -	Aggregate	Aggregate	Diesel	3145.677732	0	345.7461073	0		
Statewide Totals	2004	Industrial - Misc -	Aggregate	Aggregate	Diesel	1156.630649	0	193.4275815	0		
Statewide Totals	2004	Industrial - Other (	Aggregate	Aggregate	Diesel	5305069.708	3315018.681	4064.689197	292028991.6	1.600314	0.018
Statewide Totals	2004	Industrial - Other l	Aggregate	Aggregate	Diesel	3110375.445	906091.783	1222.656344	151651397.4	3.432738	0.021
Statewide Totals	2004	Light Commercial	Aggregate	Aggregate	Diesel	908960.2244	796941	1139.372221	29486817	1.140562	0.031
Statewide Totals	2004	Light Commercial	Aggregate	Aggregate	Diesel	4177384.008	1604364.8	13996.99657	52944038.4	2.603762	0.079
Statewide Totals	2004	Light Commercial	Aggregate	Aggregate	Diesel	20992.67735	16092.85	417.0463584	611528.3	1.304472	0.034
Statewide Totals	2004	Light Commercial	Aggregate	Aggregate	Diesel	2313478.373	837466.95	7288.043646	30986277.15	2.762471	0.075
Statewide Totals	2004	Light Commercial	Aggregate	Aggregate	Diesel	4688326.453	3142737.6	8302.092578	144565929.6	1.491797	0.032
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	2985906.863	518530.8255	1450.701943	114537898.9	5.758398	0.026
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	7061363.997	2048351.024	4369.00721	473390833	3.447341	0.015
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	17446917.6	3699040.625	8047.874661	786983104.6	4.716606	0.022
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	31441182.26	10027024.74	15650.6796	1583792218	3.135644	0.020
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	11879927.68	2962840.856	5060.555418	560741886.9	4.009641	0.021
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	742.1523451	0	87.86634406	0		
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	1048.820705	0	610.3499077	0		
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	31346.5705	21867.15	56.25376103	721615.95	1.433501	0.043
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	102.1927357	0	25.67993074	0		
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	486.9182466	0	40.45999698	0		
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	1762.738305	0	378.4584897	0		
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	199.4752444	0	15.67999883	0		
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	278.1059587	0	39.91886674	0		
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	609.6508416	0	353.4399551	0		
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	3861.264704	0	1074.294471	0		
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	70.80948896	0	7.90976394	0		
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	22802.61079	7730.7	3105.149273	286035.9	2.949618	0.080
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	36016.63435	0	4452.373864	0		
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	3219.650604	0	292.8233688	0		
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	3159.761291	0	471.6937369	0		
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	6630422.799	2348932.347	3560.557778	290372243.5	2.822739	0.023
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	39906084.31	4999262.831	3726.7547	2014758648	7.982394	0.020
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	8898540.717	2389208.621	5390.132364	411017526.4	3.724472	0.022
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	2093986.203	751261.5081	1914.081495	97218044.22	2.787293	0.022
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	1219282.588	501418.9456	1084.505336	65963869.86	2.431664	0.018
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	5438151.584	3404483.036	9968.998399	273768549.1	1.59735	0.020
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	5902011.054	2817294.975	10052.09686	283463101.4	2.094921	0.021
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	3487357.416	679496.1806	888.730996	169641505.4	5.132269	0.021
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	48073774.19	12695164.45	13028.14851	2571365951	3.786778	0.019

Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	31207835.05	3403868.947	7316.889896	1249059353	9.168342	0.025
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	5720136.852	4507055.85	13035.19076	295074833.1	1.269152	0.019
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	656017.9724	159845.4025	598.5906074	42070274.38	4.104078	0.016
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	43860037.79	23361365.62	39314.02265	2285933190	1.87746	0.019
Statewide Totals	2005	Construction and	Aggregate	Aggregate	Diesel	1805466.877	850571.7059	2361.968115	66966596.42	2.122651	0.027
Statewide Totals	2005	Industrial - Aerial	Aggregate	Aggregate	Diesel	2778839.434	2675454.109	8859.031642	168223210	1.038642	0.017
Statewide Totals	2005	Industrial - Forklift	Aggregate	Aggregate	Diesel	11693255.87	12507436.99	16615.96931	1119405154	0.934904	0.010
Statewide Totals	2005	Industrial - Misc -	Aggregate	Aggregate	Diesel	3568.600913	0	1223.392424	0		
Statewide Totals	2005	Industrial - Misc -	Aggregate	Aggregate	Diesel	2984.980979	0	340.2484723	0		
Statewide Totals	2005	Industrial - Misc -	Aggregate	Aggregate	Diesel	1034.792947	0	179.2221048	0		
Statewide Totals	2005	Industrial - Other	Aggregate	Aggregate	Diesel	5646775.431	3528542.898	4230.800667	310933341.2	1.600314	0.018
Statewide Totals	2005	Industrial - Other	Aggregate	Aggregate	Diesel	3310718.353	964454.2109	1272.622586	161439441.4	3.432738	0.021
Statewide Totals	2005	Light Commercial	Aggregate	Aggregate	Diesel	918145.6624	806142.65	1152.432012	29827278.05	1.138937	0.031
Statewide Totals	2005	Light Commercial	Aggregate	Aggregate	Diesel	4220947.77	1622786.35	14158.32452	53551949.55	2.60105	0.079
Statewide Totals	2005	Light Commercial	Aggregate	Aggregate	Diesel	21187.50486	16304.55	421.8458114	619572.9	1.299484	0.034
Statewide Totals	2005	Light Commercial	Aggregate	Aggregate	Diesel	2337522.21	847070.1	7371.926752	31341593.7	2.759538	0.075
Statewide Totals	2005	Light Commercial	Aggregate	Aggregate	Diesel	4736114.656	3178868.95	8397.698319	146227971.7	1.489874	0.032
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	3084412.237	534802.2865	1479.639582	118247508.6	5.767388	0.026
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	7282832.176	2112605.511	4456.157265	488327905.9	3.447322	0.015
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	18012914.26	3815035.141	8208.408322	812221324.4	4.721559	0.022
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	32421428.9	10341578.93	15962.86897	1632328517	3.135056	0.020
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	12275371.02	3055808.808	5161.500017	579019727.1	4.017061	0.021
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	669.7090725	0	88.59590474	0		
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	1000.43329	0	621.409965	0		
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	31821.46632	22290.55	57.34287605	735588.15	1.427577	0.043
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	93.95279899	0	26.09536119	0		
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	477.5933968	0	41.16000148	0		
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	1748.280356	0	385.6602853	0		
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	184.9960194	0	15.92000057	0		
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	263.0988202	0	40.5239858	0		
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	602.876534	0	359.8300414	0		
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	3787.778872	0	1091.729271	0		
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	70.99166718	0	8.400286282	0		
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	22962.18345	7876.7	3160.499226	291437.9	2.915204	0.079
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	34640.02195	0	4514.902972	0		
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	2940.167362	0	298.6467914	0		
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	3131.935699	0	480.7247806	0		
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	6842426.635	2422654.991	3631.581421	299688778.3	2.82435	0.023
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	41214540.26	5156088.627	3801.093528	2081169979	7.993373	0.020
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	9186951.834	2464088.152	5497.651146	424541995.4	3.728337	0.022
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	2159751.431	774815.4593	1952.262322	100242427.3	2.78744	0.022
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	1257579.371	517106.0128	1106.138328	68016996.15	2.431957	0.018
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	5608404.407	3511383.349	10167.85336	282400536.7	1.597207	0.020
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	6088731.326	2905865.362	10252.60941	292454517.2	2.095325	0.021
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	3598123.309	700812.5305	906.4588119	175171752.3	5.134217	0.021
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	49551373.67	13093360.83	13288.02537	2649875991	3.784466	0.019
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	32184496.59	3510633.778	7462.842358	1288199769	9.167717	0.025
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	5902019.841	4648833.835	13295.20809	304294033.9	1.26957	0.019
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	677169.9102	164880.9686	610.5308955	43419291	4.107023	0.016
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	45263751.76	24094192.04	40098.23267	2359238547	1.878617	0.019
Statewide Totals	2006	Construction and	Aggregate	Aggregate	Diesel	1862044.958	877298.0879	2409.083086	69097561.01	2.122477	0.027
Statewide Totals	2006	Industrial - Aerial	Aggregate	Aggregate	Diesel	2866386.469	2759744.001	9036.920345	173542781.3	1.038642	0.017
Statewide Totals	2006	Industrial - Forklift	Aggregate	Aggregate	Diesel	12061650.63	12901482.44	16949.61675	1154642163	0.934904	0.010
Statewide Totals	2006	Industrial - Misc -	Aggregate	Aggregate	Diesel	3460.051306	0	1225.666597	0		
Statewide Totals	2006	Industrial - Misc -	Aggregate	Aggregate	Diesel	2827.927101	0	331.7794451	0		
Statewide Totals	2006	Industrial - Misc -	Aggregate	Aggregate	Diesel	918.9591569	0	164.3355627	0		
Statewide Totals	2006	Industrial - Other	Aggregate	Aggregate	Diesel	5824676.479	3639709.26	4315.754832	320745360.7	1.600314	0.018
Statewide Totals	2006	Industrial - Other	Aggregate	Aggregate	Diesel	3415022.176	994839.2363	1298.176753	166536777	3.432738	0.021
Statewide Totals	2006	Light Commercial	Aggregate	Aggregate	Diesel	923741.4537	812037.4	1160.92192	30045383.8	1.13756	0.031
Statewide Totals	2006	Light Commercial	Aggregate	Aggregate	Diesel	4247554.931	1634685.35	14261.88727	53944616.55	2.598393	0.079
Statewide Totals	2006	Light Commercial	Aggregate	Aggregate	Diesel	21330.16948	16446.9	424.9657328	624982.2	1.296911	0.034
Statewide Totals	2006	Light Commercial	Aggregate	Aggregate	Diesel	2352194.583	853366.35	7426.002716	31574554.95	2.756371	0.074
Statewide Totals	2006	Light Commercial	Aggregate	Aggregate	Diesel	4765138.347	3202207.05	8459.215527	147301524.3	1.488079	0.032
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	2940546.788	511255.1105	1437.626323	112502932.6	5.751623	0.026
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	6960102.29	2019619.517	4329.628014	466779207.3	3.446244	0.015
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	17220457.52	3647086.531	7975.336709	776467475.4	4.721702	0.022
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	30977111.48	9886601.152	15509.61525	1558677510	3.133242	0.020
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	11736403.21	2921195.518	5014.943086	553693979.3	4.017671	0.021
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	631.8640887	0	90.30219966	0		
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	979.9264066	0	632.2499873	0		
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	32325.52637	22673.8	58.2762946	748235.4	1.425677	0.043
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	86.08937852	0	26.46957413	0		
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	478.7765248	0	41.93000035	0		
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	1742.651516	0	393.2116385	0		
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	172.3070188	0	16.27000014	0		
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	250.8393261	0	41.12291978	0		
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	601.9304666	0	366.0600325	0		
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	3748.204796	0	1110.944635	0		
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	74.38402449	0	9.075897317	0		
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	23310.19729	8026.35	3215.76559	296974.95	2.904209	0.078
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	33587.51828	0	4571.66789	0		
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	2707.716073	0	304.7860953	0		
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	3143.16478	0	491.9398908	0		
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	6543452.905	2316089.882	3528.465383	286487714.2	2.825215	0.023
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	39419571.18	4929056.685	3693.164321	1993903830	7.997386	0.020
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	8782626.684	2355617.972	5341.549455	406316379.5	3.728375	0.022
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	2064679.344	740747.0573	1896.829294	95814741.36	2.787293	0.022
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	1202198.592	494388.0679	1074.730358	65007883.09	2.43169	0.018
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	5360124.909	3356770.523	9879.144772	269936014.8	1.59681	0.020
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	5817599.655	2777899.201	9961.494241	279419606.9	2.094244	0.021
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	3441474.207	669965.4755	880.7205921	167561409.8	5.136793	0.021
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	47361629.47	12517172.48	12910.72183	2532260922	3.783732	0.019
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	30791067.94	3356111.154	7250.940533	1232203856	9.174627	0.025
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	5643516.856	4443915.789	12917.7006	291025116.1	1.269942	0.019
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	647450.0805	157621.6181	593.1953275	41491636.69	4.107622	0.016
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	43303443.34	23033558.36	38959.67336	2257589498	1.880015	0.019
Statewide Totals	2007	Construction and	Aggregate	Aggregate	Diesel	1781628.374	838623.2815	2340.678975	66079401.27	2.124468	0.027
Statewide Totals	2007	Industrial - Aerial	Aggregate	Aggregate	Diesel	2740118.324	2638173.599	8780.021471	165903557.8	1.038642	0.017
Statewide Totals	2007	Industrial - Forklift	Aggregate	Aggregate	Diesel	11530318.84	12333154.94	16467.7781	1103681695	0.934904	0.010
Statewide Totals	2007	Industrial - Misc -	Aggregate	Aggregate	Diesel	3333.282499	0	1220.785625	0		
Statewide Totals	2007	Industrial - Misc -	Aggregate	Aggregate	Diesel	2706.689658	0	322.4049285	0		
Statewide Totals	2007	Industrial - Misc -	Aggregate	Aggregate	Diesel	865.9481954	0	158.3581984	0		
Statewide Totals	2007	Industrial - Other	Aggregate	Aggregate	Diesel	5568091.715	3479375.215	4193.067842	306652860.5	1.600314	0.018
Statewide Totals	2007	Industrial - Other	Aggregate	Aggregate	Diesel	3264585.896	951015.2416	1261.272572	159158289	3.432738	0.021
Statewide Totals	2007	Light Commercial	Aggregate	Aggregate	Diesel	929497.1511	817924.85	1169.311735	30263219.45	1.136409	0.031
Statewide Totals	2007	Light Commercial	Aggregate	Aggregate	Diesel	4274806.892	1646613.55	14365.29991	54338247.15	2.59612	0.079
Statewide Totals	2007	Light Commercial	Aggregate	Aggregate	Diesel	21448.09244	16556.4	428.2253152	629143.2	1.295456	0.034
Statewide Totals	2007	Light Commercial	Aggregate	Aggregate	Diesel	2367178.429	859607.85	7479.898351	31805490.45	2.753789	0.074
Statewide Totals	2007	Light Commercial	Aggregate	Aggregate	Diesel	4795037.52	3225556.1	8520.542693	148375580.6	1.486577	0.032
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	2604527.62	451199.3734	1326.172337	99929270.3	5.772454	0.026

Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	6143525.615	1782183.314	3993.967563	412041837.5	3.447191	0.015
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	15204460.3	3218454.931	7357.037606	685179218.3	4.724149	0.022
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	27328480.89	8724638.286	14307.21069	1374324537	3.132334	0.020
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	10316671.92	2577988.177	4626.152628	487915312.5	4.001831	0.021
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	609.7361915	0	92.5372478	0		
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	963.3660059	0	643.1300096	0		
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	32819.35272	23071.65	59.46154416	761364.45	1.422497	0.043
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	79.06986572	0	26.89088308	0		
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	482.501826	0	42.64999862	0		
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	1760.248175	0	400.8108034	0		
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	161.3194129	0	16.68999946	0		
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	241.7011137	0	41.78843854	0		
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	604.157989	0	372.3999764	0		
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	3756.811347	0	1131.665888	0		
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	78.66372409	0	9.787618757	0		
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	23695.03481	8165.05	3271.094603	302106.85	2.902007	0.078
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	32688.47577	0	4627.643324	0		
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	2624.602753	0	310.2379943	0		
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	3188.783653	0	503.9784897	0		
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	5776831.476	2043928.013	3254.916183	252882931.4	2.826338	0.023
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	34805232.62	4349655.7	3406.846606	1760771693	8.001836	0.020
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	7752898.34	2078779.955	4927.438383	358518813.7	3.729543	0.022
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	1821876.314	653653.9869	1749.774957	84544420.83	2.787218	0.022
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	1061110.787	436283.7771	991.410388	57370989.91	2.432157	0.018
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	4730327.899	2962261.755	9113.250293	238229899.1	1.596864	0.020
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	5132804.958	2451118.987	9189.215505	246467107.1	2.094066	0.021
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	3033967.665	591208.633	812.4414997	147921569.9	5.131805	0.021
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	41804366.43	11046092.85	11909.80012	2232868191	3.784539	0.019
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	27174262.46	2961423.055	6688.801254	1087474399	9.176083	0.025
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	4981879.591	3921869.761	11916.23784	257124073.2	1.270282	0.019
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	571083.5143	139083.9512	547.2070323	36600975.67	4.106035	0.016
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	38257364.37	20326773.76	35939.27034	1996525308	1.882117	0.019
Statewide Totals	2008	Construction and	Aggregate	Aggregate	Diesel	1571179.571	740073.0712	2159.214572	58305279.94	2.123006	0.027
Statewide Totals	2008	Industrial - Aerial l	Aggregate	Aggregate	Diesel	2417951.152	2327992.494	8098.85772	146396932.4	1.038642	0.017
Statewide Totals	2008	Industrial - Forklift	Aggregate	Aggregate	Diesel	10174651.03	10883094.33	15190.18971	973918652.1	0.934904	0.010
Statewide Totals	2008	Industrial - Misc -	Aggregate	Aggregate	Diesel	3205.143998	0	1213.866538	0		
Statewide Totals	2008	Industrial - Misc -	Aggregate	Aggregate	Diesel	2611.221748	0	313.7186661	0		
Statewide Totals	2008	Industrial - Misc -	Aggregate	Aggregate	Diesel	842.7311395	0	156.0337701	0		
Statewide Totals	2008	Industrial - Other	Aggregate	Aggregate	Diesel	4913427.883	3070290.518	3867.765014	270587957.2	1.600314	0.018
Statewide Totals	2008	Industrial - Other	Aggregate	Aggregate	Diesel	2880754.878	839200.402	1163.421655	140428679.7	3.432738	0.021
Statewide Totals	2008	Light Commercial	Aggregate	Aggregate	Diesel	935291.8939	823867.05	1177.741648	30483080.85	1.135246	0.031
Statewide Totals	2008	Light Commercial	Aggregate	Aggregate	Diesel	4301980.779	1658549.05	14468.72196	54732118.65	2.593822	0.079
Statewide Totals	2008	Light Commercial	Aggregate	Aggregate	Diesel	21601.29017	16680.5	430.9751622	633859	1.295003	0.034
Statewide Totals	2008	Light Commercial	Aggregate	Aggregate	Diesel	2382270.723	865739.85	7533.704035	32032374.45	2.751717	0.074
Statewide Totals	2008	Light Commercial	Aggregate	Aggregate	Diesel	4824994.352	3248784.7	8582.260055	149444096.2	1.485169	0.032
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	2049028.031	356500.5946	1135.092336	78835592.41	5.747615	0.026
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	4836917.875	1404251.033	3414.827801	324642830.4	3.444482	0.015
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	11971813.02	2536320.991	6290.06449	539734787	4.720149	0.022
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	21513679.69	6867990.685	12225.53691	1081653360	3.132456	0.020
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	8134212.545	2029294.697	3952.3	384614066.3	4.008394	0.021
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	601.9193686	0	95.23884328	0		
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	949.5279099	0	653.9199768	0		
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	33356.73715	23447.6	60.50108915	773770.8	1.422608	0.043
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	77.43064399	0	27.47884362	0		
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	488.2070976	0	43.27999923	0		
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	1784.178501	0	408.4403821	0		
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	149.8470194	0	16.9399997	0		
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	234.3610156	0	42.48554597	0		
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	611.7556715	0	378.6900101	0		
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	3788.616651	0	1153.087689	0		
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	84.03004872	0	10.5379992	0		
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	24094.49829	8343.9	3326.466347	308724.3	2.887678	0.078
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	31908.95106	0	4686.560221	0		
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	2568.832538	0	315.5958643	0		
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	3268.831104	0	516.7690952	0		
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	4558574.7	1610412.93	2783.105804	199716177.6	2.830687	0.023
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	27401308.13	3427756.962	2912.884615	1387923096	7.993947	0.020
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	6105713.489	1637474.395	4211.97367	282699286.8	3.728738	0.022
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	1434870.558	514518.1256	1494.9	66567220.82	2.788766	0.022
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	835332.4741	343447.1156	847	45152484.3	2.432201	0.019
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	3723739.268	2333889.142	7792.837481	187732420.2	1.595508	0.020
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	4040716.558	1929626.26	7850.7	194024034.4	2.094041	0.021
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	2388517.707	465416.3683	694.1	116497598.2	5.132002	0.021
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	32891758.16	8692791.652	10175	1756118833	3.783797	0.019
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	21392304.46	2332310.671	5716.80006	856483575.6	9.17215	0.025
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	3921805.469	3084588.199	10180.5	202285906.1	1.271419	0.019
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	449645.3824	109495.1786	467.5	28781436.16	4.106531	0.016
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	30134829.43	16002653.49	30706.63573	1573817666	1.883115	0.019
Statewide Totals	2009	Construction and	Aggregate	Aggregate	Diesel	1236890.07	582586.7344	1844.7	45900437.09	2.1231	0.027
Statewide Totals	2009	Industrial - Aerial l	Aggregate	Aggregate	Diesel	1902109.569	1831507	6919.165436	115162930.8	1.038549	0.017
Statewide Totals	2009	Industrial - Forklift	Aggregate	Aggregate	Diesel	8008739.005	8568294.574	12979.91371	766736674.7	0.934695	0.010
Statewide Totals	2009	Industrial - Misc -	Aggregate	Aggregate	Diesel	3090.851511	0	1209.068332	0		
Statewide Totals	2009	Industrial - Misc -	Aggregate	Aggregate	Diesel	2531.446436	0	305.3798921	0		
Statewide Totals	2009	Industrial - Misc -	Aggregate	Aggregate	Diesel	829.7941023	0	154.2212754	0		
Statewide Totals	2009	Industrial - Other	Aggregate	Aggregate	Diesel	3867991.152	2417020.63	3304.380312	213014786.7	1.600314	0.018
Statewide Totals	2009	Industrial - Other	Aggregate	Aggregate	Diesel	2267812.746	660642.5914	993.9558366	110549478.6	3.432738	0.021
Statewide Totals	2009	Light Commercial	Aggregate	Aggregate	Diesel	940902.5348	829776.4	1186.191513	30701726.8	1.133923	0.031
Statewide Totals	2009	Light Commercial	Aggregate	Aggregate	Diesel	4329165.866	1670466.3	14572.44464	55125387.9	2.591591	0.079
Statewide Totals	2009	Light Commercial	Aggregate	Aggregate	Diesel	21770.83878	16800.95	434.014995	638436.1	1.29581	0.034
Statewide Totals	2009	Light Commercial	Aggregate	Aggregate	Diesel	2397290.73	871871.85	7588.059677	32259258.45	2.749591	0.074
Statewide Totals	2009	Light Commercial	Aggregate	Aggregate	Diesel	4854787.358	3272126.45	8644.057086	150517816.7	1.48368	0.032
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	1842363.596	320759.2047	1057.658728	70959657.8	5.743759	0.026
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	4353408.572	1263908.706	3181.875441	292224537.5	3.444401	0.015
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	10775586.33	2282958.616	5860.969539	485837028	4.720009	0.022
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	19364674.15	6183115.009	11391.53653	973943542.5	3.131864	0.020
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	7321343.483	1826492.039	3682.682419	346197021	4.008418	0.021
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	609.5977392	0	98.20852982	0		
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	938.2447104	0	664.9699878	0		
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	33849.86795	23867.35	61.40193423	787622.55	1.41825	0.043
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	76.18236294	0	27.94013526	0		
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	496.1766046	0	44.06000292	0		
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	1811.853435	0	415.7811162	0		
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	146.6815096	0	17.22000114	0		
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	229.7171362	0	43.18245705	0		
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	620.3675052	0	385.0000447	0		
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	3839.28186	0	1174.701635	0		
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	89.49871299	0	11.24536393	0		
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	24435.26875	8497.2	3381.746307	314396.4	2.875685	0.078
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	31172.08354	0	4747.53629	0		
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	2526.434375	0	321.0088496	0		

Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	3353.138269	0	528.6368783	0		
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	4102293.945	1449422.48	2593.248188	179716735.2	2.830296	0.023
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	24658843.92	3084981.265	2714.173762	1249033334	7.993191	0.020
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	5493577.639	1473919.308	3924.641698	254310968.8	3.72719	0.022
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	1291368.249	463109.4154	1392.921071	59912984.47	2.788473	0.022
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	751715.4495	309118.7976	789.2194441	40623033.19	2.431801	0.019
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	3351006.791	2100705.019	7261.226522	168953831.3	1.595182	0.020
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	3636059.146	1736253.097	7315.141782	174497467.1	2.094199	0.021
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	2148158.44	418894.818	646.74996	104842903.3	5.128157	0.020
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	29598027.31	7823431.883	9480.882932	1580222847	3.783254	0.019
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	19251669.56	2099067.183	5326.812002	770815626.9	9.171536	0.025
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	3528745.153	2778036.887	9486.007733	182061424.7	1.27023	0.019
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	404516.55	98537.90495	435.6081347	25892832.74	4.105187	0.016
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	27116519.53	14399691.08	28611.89372	1415587873	1.883132	0.019
Statewide Totals	2010	Construction and	Aggregate	Aggregate	Diesel	1112981.96	524356.1623	1718.858452	41301637.41	2.122569	0.027
Statewide Totals	2010	Industrial - Aerial I	Aggregate	Aggregate	Diesel	1711917.896	1647751.687	6447.154544	103610680	1.038942	0.017
Statewide Totals	2010	Industrial - Forklifi	Aggregate	Aggregate	Diesel	7207865.104	7711465.116	12094.45134	690022839.3	0.934695	0.010
Statewide Totals	2010	Industrial - Misc -	Aggregate	Aggregate	Diesel	2999.067039	0	1211.994388	0		
Statewide Totals	2010	Industrial - Misc -	Aggregate	Aggregate	Diesel	2465.722258	0	298.417387	0		
Statewide Totals	2010	Industrial - Misc -	Aggregate	Aggregate	Diesel	806.3751166	0	149.8738626	0		
Statewide Totals	2010	Industrial - Other (	Aggregate	Aggregate	Diesel	3481192.037	2175318.567	3078.962447	191716394	1.600314	0.018
Statewide Totals	2010	Industrial - Other (	Aggregate	Aggregate	Diesel	2041031.471	594578.3323	926.150263	99495939.4	3.432738	0.021
Statewide Totals	2010	Light Commercial	Aggregate	Aggregate	Diesel	946323.9911	835667.5	1194.501471	30919697.5	1.132417	0.031
Statewide Totals	2010	Light Commercial	Aggregate	Aggregate	Diesel	4355865.364	1682259.45	14675.93677	55514561.85	2.589295	0.078
Statewide Totals	2010	Light Commercial	Aggregate	Aggregate	Diesel	21918.6219	16910.45	436.9148087	642597.1	1.296158	0.034
Statewide Totals	2010	Light Commercial	Aggregate	Aggregate	Diesel	2411920.317	878091.45	7641.705623	32489383.65	2.746776	0.074
Statewide Totals	2010	Light Commercial	Aggregate	Aggregate	Diesel	4883292.282	3295431.7	8705.114257	151589858.2	1.481837	0.032
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	1935454.289	337618.8105	1094.730025	74606951.73	5.732661	0.026
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	4582361.061	1330266.362	3293.401256	307570362.6	3.444694	0.015
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	11342841.04	2402871.046	6066.398511	511316263	4.720537	0.022
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	20382861.98	6507959.742	11790.81375	1025333972	3.13199	0.020
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	7706073.859	1922499.441	3811.761688	364326522	4.008362	0.021
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	622.5619646	0	101.3023856	0		
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	930.2877705	0	675.9399761	0		
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	34336.41589	24257.9	62.20866241	800510.7	1.415474	0.043
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	75.16793355	0	28.38416487	0		
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	504.1854696	0	44.81000057	0		
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	1843.419925	0	423.2706782	0		
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	145.0560016	0	17.59000023	0		
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	226.9558526	0	43.89467145	0		
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	629.6165092	0	391.2399894	0		
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	3906.381122	0	1196.555084	0		
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	92.66474124	0	11.65694458	0		
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	24823.72026	8643.2	3437.166463	319798.4	2.872052	0.078
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	30493.0203	0	4810.121623	0		
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	2499.388983	0	326.4203852	0		
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	3420.38571	0	538.3533258	0		
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	4316748.382	1525584.112	2684.142418	189148187.6	2.829571	0.023
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	25944400.58	3247068.612	2809.306474	1314438620	7.990099	0.020
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	5782490.63	1551335.983	4062.201722	267775290.2	3.727426	0.022
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	1359142.109	487480.0133	1441.743427	63043378.89	2.788098	0.022
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	791249.4182	325385.3923	816.8818535	42768638.5	2.43173	0.019
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	3525628.552	2211033.179	7515.734977	177745401.8	1.594562	0.020
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	3826005.439	1828230.382	7571.539985	183672915	2.092737	0.021
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	2261853.224	440910.5795	669.4187656	110326617.4	5.129959	0.021
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	31140714.48	8234491.928	9813.191097	1663139675	3.781741	0.019
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	20263937.01	2209225.516	5513.518571	811318327.2	9.172417	0.025
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	3712337.604	2923875.423	9818.495525	191545796.1	1.269663	0.019
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	425418.6002	103728.2386	450.8763477	27240318.75	4.10128	0.016
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	28509222.3	15156396.69	29614.7503	1487931745	1.881003	0.019
Statewide Totals	2011	Construction and	Aggregate	Aggregate	Diesel	1171791.47	551918.9444	1779.105024	43471340.39	2.123122	0.027
Statewide Totals	2011	Industrial - Aerial I	Aggregate	Aggregate	Diesel	1801877.823	1734339.731	6673.129499	109050273.3	1.038942	0.017
Statewide Totals	2011	Industrial - Forklifi	Aggregate	Aggregate	Diesel	7586632.695	8116696.488	12518.36596	726251053.2	0.934695	0.010
Statewide Totals	2011	Industrial - Misc -	Aggregate	Aggregate	Diesel	2941.387873	0	1226.879339	0		
Statewide Totals	2011	Industrial - Misc -	Aggregate	Aggregate	Diesel	2416.513865	0	293.286565	0		
Statewide Totals	2011	Industrial - Misc -	Aggregate	Aggregate	Diesel	775.3881564	0	144.0751572	0		
Statewide Totals	2011	Industrial - Other (	Aggregate	Aggregate	Diesel	3664125.916	2289629.831	3186.881126	201767674.6	1.600314	0.018
Statewide Totals	2011	Industrial - Other (	Aggregate	Aggregate	Diesel	2148286.055	625822.9518	958.6121441	104730287	3.432738	0.021
Statewide Totals	2011	Light Commercial	Aggregate	Aggregate	Diesel	951051.803	841408.95	1202.571259	31132131.15	1.130309	0.031
Statewide Totals	2011	Light Commercial	Aggregate	Aggregate	Diesel	4380942.883	1693735.05	14775.24935	55893256.65	2.586557	0.078
Statewide Totals	2011	Light Commercial	Aggregate	Aggregate	Diesel	22091.27294	17049.15	439.9446507	647867.7	1.29574	0.034
Statewide Totals	2011	Light Commercial	Aggregate	Aggregate	Diesel	2425505.059	884092.05	7693.381471	32711405.85	2.743498	0.074
Statewide Totals	2011	Light Commercial	Aggregate	Aggregate	Diesel	4909077.646	3317791.6	8764.111695	152618413.6	1.479622	0.032
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	2031876.497	354460.0829	1130.992419	78361007.13	5.732314	0.026
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	4810552.454	1396693.846	3402.493553	322847835.4	3.444243	0.015
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	11908662.19	2522777.962	6267.344979	536709918	4.720456	0.022
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	21401545.97	6832931.988	12181.37866	1076487406	3.132118	0.020
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	8090893.479	2018403.237	3938.02442	382500929.4	4.008561	0.021
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	638.8617751	0	104.1383145	0		
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	928.8878283	0	686.9000044	0		
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	34852.00129	24688.6	63.0963216	814723.8	1.411664	0.043
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	74.5302061	0	28.86868351	0		
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	511.7438292	0	45.4900017	0		
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	1874.720356	0	430.5414164	0		
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	143.8400898	0	17.86000067	0		
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	230.4559611	0	44.66655822	0		
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	639.8098089	0	397.7100332	0		
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	3976.29825	0	1217.819625	0		
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	93.96268409	0	11.82772467	0		
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	25194.10904	8822.05	3492.681887	326415.85	2.855811	0.077
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	29861.71846	0	4868.259266	0		
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	2488.375401	0	331.8262032	0		
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	3475.768417	0	546.4068046	0		
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	4532673.688	1601808.375	2773.053316	198608658.7	2.829723	0.023
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	27237722.24	3409140.868	2902.36337	1380314570	7.989615	0.020
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	6070922.392	1628798.752	4196.760157	281129490.3	3.727239	0.022
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	1427016.257	511776.9435	1489.500469	66185033.88	2.788356	0.022
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	830689.9266	341628.2059	843.9406633	44902403.12	2.431561	0.018
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	3701218.187	2321404.122	7764.690003	186598138.7	1.594388	0.020
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	4016358.039	1919180.187	7822.343524	192770097.4	2.092747	0.021
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	2374482.306	462911.1194	691.5929331	115783294.3	5.129456	0.021
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	32690892.76	8645708.429	10138.24823	1746150352	3.78117	0.019
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	21276996.77	2319659.799	5696.151163	852011139.1	9.172464	0.025
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	3896018.901	3070054.935	10143.72836	201073338.1	1.269039	0.019
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	446309.831	108905.8673	465.811405	28578471.56	4.098125	0.016
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	29926865.14	15913078.07	30595.72435	1561759642	1.880646	0.019
Statewide Totals	2012	Construction and	Aggregate	Aggregate	Diesel	1230378.781	579475.1002	1838.037003	45643630.57	2.123264	0.027
Statewide Totals	2012	Industrial - Aerial I	Aggregate	Aggregate	Diesel	1891837.75	1820927.774	6894.173633	114491369.4	1.038942	0.017
Statewide Totals	2012	Industrial - Forklifi	Aggregate	Aggregate	Diesel	7965400.286	8521927.86	12933.03068	762518330	0.934695	0.010
Statewide Totals	2012	Industrial - Misc -	Aggregate	Aggregate	Diesel	2888.217183	0	1240.168097	0		

Statewide Totals	2012	Industrial - Misc -	Aggregate	Aggregate	Diesel	2371.472735	0	288.6230278	0		
Statewide Totals	2012	Industrial - Misc -	Aggregate	Aggregate	Diesel	738.4164423	0	137.2824835	0		
Statewide Totals	2012	Industrial - Other	Aggregate	Aggregate	Diesel	3847059.794	2403941.095	3292.444996	211846580.2	1.600314	0.018
Statewide Totals	2012	Industrial - Other	Aggregate	Aggregate	Diesel	2255540.639	657067.5712	990.3657001	109926359.9	3.432738	0.021
Statewide Totals	2012	Light Commercial	Aggregate	Aggregate	Diesel	952734.0322	844573.5	1207.021171	31249219.5	1.128065	0.030
Statewide Totals	2012	Light Commercial	Aggregate	Aggregate	Diesel	4392478.098	1700060.5	14830.99557	56101996.5	2.583719	0.078
Statewide Totals	2012	Light Commercial	Aggregate	Aggregate	Diesel	22167.17175	17118.5	441.9443201	650503	1.294925	0.034
Statewide Totals	2012	Light Commercial	Aggregate	Aggregate	Diesel	2431625.302	887468.3	7722.519096	32836327.1	2.739957	0.074
Statewide Totals	2012	Light Commercial	Aggregate	Aggregate	Diesel	4919263.877	3330260	8797.450324	153191960	1.477141	0.032
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	2127440.256	371297.79	1166.496658	82146332.81	5.729741	0.026
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	5039357.465	1463115.729	3509.305005	338204921	3.444264	0.015
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	12474009.94	2642813.008	6464.090163	562074596.5	4.719974	0.022
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	22424057.76	7157800.195	12563.77784	1128499317	3.132814	0.020
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	8473116.232	2114381.556	4061.647316	400498383.1	4.007373	0.021
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	651.4801192	0	106.3006178	0		
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	930.1417682	0	697.689984	0		
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	35360.14575	25028.05	63.9634897	825925.65	1.412821	0.043
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	74.20571728	0	29.28052066	0		
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	520.293475	0	46.24999833	0		
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	1907.216406	0	438.062079	0		
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	142.8025185	0	18.11999934	0		
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	233.7240904	0	45.38096725	0		
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	649.783877	0	403.9099802	0		
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	4041.016379	0	1237.42359	0		
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	93.85947594	0	11.81857319	0		
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	25575.40313	8953.45	3548.141732	331277.65	2.856486	0.077
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	29698.39398	0	4925.932254	0		
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	2498.185443	0	337.2969624	0		
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	3518.862827	0	553.0828881	0		
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	4748984.782	1677950.513	2860.105311	208145939.6	2.830229	0.023
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	28535424.68	3571370.013	2993.47468	1446254304	7.99005	0.020
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	6356813.367	1706304.051	4328.505314	294421080.2	3.725487	0.022
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	1495391.621	536149.589	1536.259032	69393567.83	2.789131	0.022
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	869514.421	357818.6147	870.4337415	47031018.37	2.430042	0.018
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	3877168.165	2431724.631	8008.440006	195487853.3	1.594411	0.020
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	4206579.069	2010708.24	8067.903393	201898897.8	2.092088	0.021
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	2487120.642	484931.426	713.3034946	121348158.8	5.128809	0.020
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	34241352.76	9056777.292	10456.50923	1829353387	3.780744	0.019
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	22289084.68	2429948.974	5874.965367	892518853.4	9.172655	0.025
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	4079270.105	3216091.704	10462.1614	210561390.1	1.268394	0.019
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	467426.2401	114083.3941	480.434208	29932936.42	4.097233	0.016
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	31333045.29	16669619.64	31556.18869	1635640777	1.87965	0.019
Statewide Totals	2013	Construction and	Aggregate	Aggregate	Diesel	1288469.423	607019.6629	1895.736863	47827816.64	2.122616	0.027
Statewide Totals	2013	Industrial - Aerial	Aggregate	Aggregate	Diesel	1981797.677	1907515.818	7110.596291	119934146.1	1.038942	0.017
Statewide Totals	2013	Industrial - Forkliff	Aggregate	Aggregate	Diesel	8344167.876	8927159.231	13339.0258	798756206	0.934695	0.010
Statewide Totals	2013	Industrial - Misc -	Aggregate	Aggregate	Diesel	2871.356859	0	1253.77034	0		
Statewide Totals	2013	Industrial - Misc -	Aggregate	Aggregate	Diesel	2338.906641	0	285.2352863	0		
Statewide Totals	2013	Industrial - Misc -	Aggregate	Aggregate	Diesel	707.5454597	0	131.6924806	0		
Statewide Totals	2013	Industrial - Other	Aggregate	Aggregate	Diesel	4029993.673	2518252.36	3395.801792	221950283.2	1.600314	0.018
Statewide Totals	2013	Industrial - Other	Aggregate	Aggregate	Diesel	2362795.223	688312.1907	1021.455369	115165334.6	3.432738	0.021
Statewide Totals	2013	Light Commercial	Aggregate	Aggregate	Diesel	954283.4711	847676	1211.681002	31364012	1.125764	0.030
Statewide Totals	2013	Light Commercial	Aggregate	Aggregate	Diesel	4403728.993	1706469.9	14885.9014	56313506.7	2.580607	0.078
Statewide Totals	2013	Light Commercial	Aggregate	Aggregate	Diesel	22237.30891	17191.5	443.3942326	653277	1.293506	0.034
Statewide Totals	2013	Light Commercial	Aggregate	Aggregate	Diesel	2437450.78	890764.25	7750.886674	32958277.25	2.736359	0.074
Statewide Totals	2013	Light Commercial	Aggregate	Aggregate	Diesel	4928772.88	3342633.5	8829.858669	153761141	1.474518	0.032
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	2223263.836	388144.169	1201.288395	85848786.69	5.727933	0.026
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	5267986.841	1529535.371	3613.972958	353613155.7	3.444175	0.015
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	13036281.18	2762781.005	6656.887051	587555624	4.718536	0.022
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	23445008.76	7482782.337	12938.50301	1180298027	3.133194	0.020
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	8854545.915	2210457.071	4182.789339	418560686.5	4.005753	0.021
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	660.0087359	0	107.7007661	0		
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	938.4163207	0	708.6299625	0		
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	35839.42333	25480.65	64.93930961	840861.45	1.406535	0.043
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	74.58625082	0	29.7736769	0		
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	528.730661	0	46.99999658	0		
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	1939.678207	0	445.5592351	0		
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	142.0547847	0	18.36999866	0		
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	237.2023659	0	46.12701227	0		
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	659.9510185	0	410.2299485	0		
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	4101.344412	0	1255.586725	0		
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	92.8792229	0	11.69564878	0		
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	25927.4803	9110.4	3603.655666	337084.8	2.845921	0.077
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	29700.52153	0	4987.751657	0		
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	2521.768609	0	342.7836826	0		
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	3550.768144	0	557.4701047	0		
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	4963686.353	1754142.991	2945.41034	217640206.9	2.829693	0.023
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	29775675.07	3733437.022	3082.757563	1509870610	7.975406	0.020
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	6638406.143	1783747.326	4457.6066	307569757.3	3.721607	0.022
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	1563249.866	560475.8997	1582.079241	72572099.96	2.789147	0.022
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	908977.7103	374075.988	896.3951548	49172887.02	2.429928	0.018
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	4052285.696	2542170.732	8247.298419	204341307.1	1.594026	0.020
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	4397268.55	2101628.154	8308.535351	211007301.8	2.092315	0.021
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	2598037.351	506943.9635	734.5783671	126785722.3	5.1249	0.020
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	35761777.21	9467827.819	10768.38335	1911868373	3.777189	0.019
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	23295728.49	2540228.075	6050.191116	933073821	9.170723	0.025
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	4264770.007	3362019.272	10774.2041	220143407	1.268514	0.019
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	488809.0308	119254.9528	494.7635595	31299738.91	4.098857	0.016
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	32708313.64	17426398.1	32497.37838	1708530359	1.876941	0.019
Statewide Totals	2014	Construction and	Aggregate	Aggregate	Diesel	1345685.976	634570.0821	1952.278798	49976773.23	2.120626	0.027
Statewide Totals	2014	Industrial - Aerial	Aggregate	Aggregate	Diesel	2071757.603	1994103.861	7322.675764	125378737.6	1.038942	0.017
Statewide Totals	2014	Industrial - Forkliff	Aggregate	Aggregate	Diesel	8722935.467	9332390.603	13736.87339	834979179.4	0.934695	0.010
Statewide Totals	2014	Industrial - Misc -	Aggregate	Aggregate	Diesel	2863.829375	0	1266.088416	0		
Statewide Totals	2014	Industrial - Misc -	Aggregate	Aggregate	Diesel	2313.756325	0	282.5373079	0		
Statewide Totals	2014	Industrial - Misc -	Aggregate	Aggregate	Diesel	678.8394122	0	126.4331287	0		
Statewide Totals	2014	Industrial - Other	Aggregate	Aggregate	Diesel	4212927.552	2632563.624	3497.084417	232036325.8	1.600314	0.018
Statewide Totals	2014	Industrial - Other	Aggregate	Aggregate	Diesel	2470049.807	719556.8102	1051.921129	120385894.9	3.432738	0.021
Statewide Totals	2014	Light Commercial	Aggregate	Aggregate	Diesel	955824.8408	850760.25	1216.510904	31478129.25	1.123495	0.030
Statewide Totals	2014	Light Commercial	Aggregate	Aggregate	Diesel	4415154.938	1712802.65	14941.0276	56522487.45	2.577737	0.078
Statewide Totals	2014	Light Commercial	Aggregate	Aggregate	Diesel	22300.89715	17271.8	445.2541479	656328.4	1.291174	0.034
Statewide Totals	2014	Light Commercial	Aggregate	Aggregate	Diesel	2443295.288	894063.85	7779.754473	33080362.45	2.732797	0.074
Statewide Totals	2014	Light Commercial	Aggregate	Aggregate	Diesel	4938138.472	3355101.9	8862.487328	154334687.4	1.47183	0.032
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	2318400.073	404993.4221	1235.408879	89523084.35	5.724538	0.026
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	5496218.751	1595983.757	3716.621503	368951154	3.443781	0.015
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	13604717.29	2882725.369	6845.964218	613165109.2	4.719394	0.022
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	24461348.25	7807547.248	13305.99843	1231477163	3.133039	0.020
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	9238228.06	2306398.243	4301.594113	436630310.9	4.005478	0.021
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	665.8325869	0	108.6187065	0		
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	948.3324782	0	719.5699786	0		
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	36384.80318	25845.65	65.87926093	852906.45	1.407773	0.043
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	75.28737561	0	30.28190612	0		

Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	537.0554046	0	47.74000133	0		
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	1972.615056	0	453.1446484	0		
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	142.2488982	0	18.65000053	0		
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	240.8617487	0	46.89378996	0		
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	670.0700214	0	416.5199829	0		
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	4158.728435	0	1272.879023	0		
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	91.44704374	0	11.51530414	0		
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	26315.93149	9289.25	3659.115784	343702.25	2.832945	0.077
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	29735.64456	0	5049.494295	0		
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	2555.856769	0	348.2695995	0		
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	3573.945973	0	561.1790766	0		
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	5178739.276	1830278.69	3029.06954	227099183.5	2.829481	0.023
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	31053760.43	3895584.2	3170.317869	1575220182	7.971528	0.020
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	6924628.55	1861185.758	4584.217074	320811075.1	3.720547	0.022
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	1631226.308	584811.6067	1627.015419	75730059.86	2.789319	0.022
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	948647.5537	390313.9527	921.8556824	51323689.17	2.430473	0.018
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	4228568.6	2652518.296	8481.548423	213219213.1	1.594171	0.020
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	4588736.187	2192902.042	8544.524682	220193273.8	2.09254	0.021
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	2710928.06	528946.3553	755.4427735	132203642.6	5.125147	0.021
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	37292001.87	9879015.496	11074.24034	1994771110	3.77487	0.019
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	24301785.57	2650506.417	6222.036152	973576463.8	9.168733	0.025
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	4448614.808	3508046.815	11080.22642	229556972.2	1.268117	0.019
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	509938.5212	124452.8323	508.8164481	32660277.6	4.097444	0.016
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	34113528.72	18182953.68	33420.40925	1782054974	1.876127	0.019
Statewide Totals	2015	Construction and	Aggregate	Aggregate	Diesel	1403797.579	662132.9214	2007.729843	52130262.95	2.120114	0.027
Statewide Totals	2015	Industrial - Aerial l	Aggregate	Aggregate	Diesel	2161717.53	2080691.905	7530.663488	130824855.2	1.038942	0.017
Statewide Totals	2015	Industrial - Forklift	Aggregate	Aggregate	Diesel	9101703.058	9737621.975	14127.04511	871198344.3	0.934695	0.010
Statewide Totals	2015	Industrial - Misc -	Aggregate	Aggregate	Diesel	2856.829396	0	1276.876151	0		
Statewide Totals	2015	Industrial - Misc -	Aggregate	Aggregate	Diesel	2294.129898	0	280.2502831	0		
Statewide Totals	2015	Industrial - Misc -	Aggregate	Aggregate	Diesel	652.1937552	0	121.4719464	0		
Statewide Totals	2015	Industrial - Other	Aggregate	Aggregate	Diesel	4395861.43	2746874.888	3596.412948	242134566.7	1.600314	0.018
Statewide Totals	2015	Industrial - Other	Aggregate	Aggregate	Diesel	2577304.391	750801.4297	1081.799098	125579872.2	3.432738	0.021
Statewide Totals	2015	Light Commercial	Aggregate	Aggregate	Diesel	957438.0961	853884.65	1221.230864	31593732.05	1.121273	0.030
Statewide Totals	2015	Light Commercial	Aggregate	Aggregate	Diesel	4427069.315	1719098.9	14996.36361	56730263.7	2.575227	0.078
Statewide Totals	2015	Light Commercial	Aggregate	Aggregate	Diesel	22348.60611	17322.9	446.7040442	658270.2	1.290119	0.034
Statewide Totals	2015	Light Commercial	Aggregate	Aggregate	Diesel	2449449.471	897224.75	7808.172594	33197315.75	2.730029	0.074
Statewide Totals	2015	Light Commercial	Aggregate	Aggregate	Diesel	4948499.617	3367533.8	8895.355786	154906554.8	1.469473	0.032
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	2414870.855	421884.3856	1268.895524	93034870.97	5.724011	0.026
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	5725329.531	1662344.666	3817.363201	384392585	3.444129	0.015
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	14171282.45	3002717.662	7031.528999	638452186.9	4.719485	0.022
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	25470696.03	8132417.018	13666.66708	1282360052	3.131996	0.020
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	9615811.673	2402415.2	4418.191914	454480675.5	4.00256	0.021
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	670.7135852	0	109.3863017	0		
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	958.7627836	0	730.4900048	0		
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	36893.54921	26298.25	66.85122447	867842.25	1.40289	0.043
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	76.07573484	0	30.68512429	0		
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	544.8176343	0	48.43000269	0		
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	2005.348371	0	460.6681343	0		
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	143.1804715	0	18.93000106	0		
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	244.1744025	0	47.58472703	0		
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	680.398128	0	422.9399989	0		
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	4213.038163	0	1289.356508	0		
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	90.34102047	0	11.37603009	0		
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	26653.11863	9453.5	3714.489003	349779.5	2.819392	0.076
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	29771.6249	0	5105.187805	0		
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	2595.849496	0	353.9884883	0		
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	3586.476572	0	564.0997732	0		
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	5390729.54	1906441.687	3111.174647	236456279.3	2.827639	0.023
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	32313654.29	4057734.188	3256.251614	1639043921	7.963472	0.020
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	7212295.633	1938593.292	4708.475573	334187452.4	3.720376	0.022
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	1698849.974	609147.2059	1671.116841	78899000.75	2.788899	0.022
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	988143.3493	406575.7442	946.8432434	53448967.47	2.430404	0.018
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	4403996.479	2762866.809	8711.44689	222058124.6	1.593995	0.020
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	4781438.123	2284467.357	8776.130166	229477379.8	2.093021	0.021
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	2821917.389	550943.9397	775.9195929	137599209.5	5.121968	0.021
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	38827746.95	10290045.6	11374.41559	2079886854	3.773331	0.019
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	25299865.42	2760839.978	6390.688915	1013915149	9.163829	0.025
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	4632930.603	3654219.802	11380.56392	239140402	1.26783	0.019
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	531237.4485	129603.8869	522.6082837	33998364.77	4.098931	0.016
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	35487128.52	18939824.36	34326.29346	1854835700	1.873678	0.019
Statewide Totals	2016	Construction and	Aggregate	Aggregate	Diesel	1462873.528	689649.1587	2062.150804	54295397.13	2.121185	0.027
Statewide Totals	2016	Industrial - Aerial l	Aggregate	Aggregate	Diesel	2251677.457	2167279.948	7734.787536	136269864.9	1.038942	0.017
Statewide Totals	2016	Industrial - Forklift	Aggregate	Aggregate	Diesel	9480470.649	10142853.35	14509.96883	907430618.6	0.934695	0.010
Statewide Totals	2016	Industrial - Misc -	Aggregate	Aggregate	Diesel	2847.724953	0	1284.847681	0		
Statewide Totals	2016	Industrial - Misc -	Aggregate	Aggregate	Diesel	2268.314491	0	277.2629388	0		
Statewide Totals	2016	Industrial - Misc -	Aggregate	Aggregate	Diesel	627.3022438	0	116.8854356	0		
Statewide Totals	2016	Industrial - Other	Aggregate	Aggregate	Diesel	4578795.309	2861186.152	3693.896306	252249873.1	1.600314	0.018
Statewide Totals	2016	Industrial - Other	Aggregate	Aggregate	Diesel	2684558.975	782046.0491	1111.12204	130801687.5	3.432738	0.021
Statewide Totals	2016	Light Commercial	Aggregate	Aggregate	Diesel	956610.1239	854767.95	1222.140856	31626414.15	1.119146	0.030
Statewide Totals	2016	Light Commercial	Aggregate	Aggregate	Diesel	4427646.768	1720708.55	15010.89238	56783382.15	2.573153	0.078
Statewide Totals	2016	Light Commercial	Aggregate	Aggregate	Diesel	22412.31905	17315.6	447.1037963	657992.8	1.294343	0.034
Statewide Totals	2016	Light Commercial	Aggregate	Aggregate	Diesel	2449496.89	898115.35	7815.971789	33230267.95	2.727374	0.074
Statewide Totals	2016	Light Commercial	Aggregate	Aggregate	Diesel	4945785.934	3370639.95	8903.495469	155049437.7	1.467314	0.032
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	2511664.306	438711.3472	1301.782395	96827132.36	5.725095	0.026
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	5955444.131	1728749.627	3916.300528	399865904.1	3.444943	0.015
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	14737762.2	3122697.806	7213.770157	663916893	4.719561	0.022
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	26492900.42	8457336.695	14020.87585	1333669139	3.132535	0.020
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	9993036.796	2498391.68	4532.701348	472307398.4	3.999788	0.021
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	674.7499527	0	110.0305093	0		
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	970.2950927	0	741.5800838	0		
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	37354.95898	26637.7	67.89697567	879044.1	1.402334	0.042
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	77.36287709	0	31.23784401	0		
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	552.6923534	0	49.13000319	0		
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	2037.335516	0	468.0150983	0		
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	145.0944415	0	19.26000125	0		
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	247.1423134	0	48.16311332	0		
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	690.2436025	0	429.0600098	0		
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	4266.11576	0	1305.741355	0		
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	90.19640961	0	11.35782025	0		
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	26997.76474	9617.75	3769.917241	355856.75	2.807077	0.076
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	29854.16108	0	5160.248794	0		
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	2635.164568	0	359.5490649	0		
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	3603.129294	0	567.9916228	0		
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	5604031.487	1982608.615	3191.809182	246008364.3	2.826595	0.023
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	33597364.22	4219809.641	3340.646212	1704024405	7.96182	0.020
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	7495316.717	2016081.141	4830.508497	347367504.3	3.717765	0.022
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	1766111.325	633460.2373	1714.42837	82045332.93	2.788038	0.022
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	1027734.102	422808.2106	971.3832557	55574905.29	2.430734	0.018
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	4578808.465	2873364.049	8937.227679	230904779.6	1.593536	0.020
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	4972393.829	2375250.752	9003.587397	238625096.1	2.093418	0.021

Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	2937549.32	572976.0808	796.029655	143032502.5	5.126827	0.021
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	40373009.95	10701170.54	11669.21444	2164116169	3.772766	0.019
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	26308871.28	2871109.609	6556.320962	1054303635	9.163311	0.025
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	4817536.045	3800162.045	11675.52212	248736215.4	1.267719	0.019
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	553551.8197	134797.7867	536.1530957	35410750.69	4.106535	0.016
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	36868190.68	19696073.06	35215.95252	1927640946	1.871855	0.019
Statewide Totals	2017	Construction and	Aggregate	Aggregate	Diesel	1521757.807	717219.2132	2115.597039	56462467.57	2.121747	0.027
Statewide Totals	2017	Industrial - Aerial l	Aggregate	Aggregate	Diesel	2341637.384	2253867.991	7935.255547	141712163.8	1.038942	0.017
Statewide Totals	2017	Industrial - Forklift	Aggregate	Aggregate	Diesel	9859238.239	10548084.72	14886.03405	943665016.4	0.934695	0.010
Statewide Totals	2017	Industrial - Misc -	Aggregate	Aggregate	Diesel	2837.714708	0	1289.930226	0		
Statewide Totals	2017	Industrial - Misc -	Aggregate	Aggregate	Diesel	2238.83886	0	273.8140383	0		
Statewide Totals	2017	Industrial - Misc -	Aggregate	Aggregate	Diesel	600.1253619	0	111.872241	0		
Statewide Totals	2017	Industrial - Other (	Aggregate	Aggregate	Diesel	4761729.188	2975497.417	3789.633654	262327234.4	1.600314	0.018
Statewide Totals	2017	Industrial - Other l	Aggregate	Aggregate	Diesel	2791813.559	813290.6686	1139.919783	136015894.4	3.432738	0.021
Statewide Totals	2017	Light Commercial	Aggregate	Aggregate	Diesel	955883.2953	855567.3	1223.520851	31655990.1	1.117251	0.030
Statewide Totals	2017	Light Commercial	Aggregate	Aggregate	Diesel	4428469.823	1722402.15	15025.45147	56839270.95	2.571101	0.078
Statewide Totals	2017	Light Commercial	Aggregate	Aggregate	Diesel	22428.90504	17315.6	448.0539746	657992.8	1.2953	0.034
Statewide Totals	2017	Light Commercial	Aggregate	Aggregate	Diesel	2449905.829	899046.1	7823.701113	33264705.7	2.725006	0.074
Statewide Totals	2017	Light Commercial	Aggregate	Aggregate	Diesel	4943897.721	3373906.7	8912.375053	155199708.2	1.465333	0.032
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	2600710.501	455569.5661	1334.10061	100237385.1	5.708701	0.026
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	6185084.17	1795170.638	4013.5271	415268584.8	3.445402	0.015
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	15288034.15	3242671.6	7392.860127	688884222.3	4.714642	0.022
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	27511101.3	8782172.005	14368.95989	1385149867	3.132608	0.020
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	10363463.48	2594349.704	4645.230764	489911541.3	3.994629	0.021
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	678.9694982	0	110.7589036	0		
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	981.4349941	0	752.3100044	0		
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	37893.07853	27101.25	68.84522914	894341.25	1.398204	0.042
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	78.26872975	0	31.61673887	0		
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	561.0170008	0	49.86999906	0		
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	2070.044867	0	475.5294855	0		
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	146.8151033	0	19.52999963	0		
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	250.5655176	0	48.83022769	0		
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	700.3785693	0	435.3599743	0		
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	4318.420499	0	1322.119078	0		
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	90.74678718	0	11.42712551	0		
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	27386.17899	9771.05	3825.3446	361528.85	2.802788	0.076
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	29950.75344	0	5211.721905	0		
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	2674.818786	0	365.0893014	0		
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	3632.877177	0	573.5551955	0		
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	5817236.929	2058796.176	3271.04944	255370443.7	2.825553	0.023
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	34894596.66	4381895.104	3423.581517	1766507745	7.963357	0.020
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	7785694.477	2093535.454	4950.431311	360675011.7	3.718922	0.022
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	1834278.702	657831.1998	1756.990985	85203895.13	2.788373	0.022
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	1067138.933	439054.3688	995.4989392	57721275.97	2.430539	0.018
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	4755062.216	2983679.631	9159.104423	239704124.5	1.593691	0.020
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	5162897.997	2466747.73	9227.111596	247779115.4	2.092998	0.021
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	3051135.404	594996.9664	815.7919879	148401466.6	5.127985	0.021
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	41919186.12	11112405.01	11958.91583	2247689189	3.772287	0.019
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	27322997.93	2981456.125	6719.089015	1094392818	9.164313	0.025
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	4998789.316	3945960.6	11965.38011	258154119.2	1.266812	0.019
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	573373.6653	139972.2538	549.4637002	36720093.75	4.096338	0.016
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	38225915.19	20452557.95	36090.22821	1999055270	1.869004	0.019
Statewide Totals	2018	Construction and	Aggregate	Aggregate	Diesel	1580290.943	744816.1128	2168.119118	58617247.17	2.12172	0.027
Statewide Totals	2018	Industrial - Aerial l	Aggregate	Aggregate	Diesel	2431597.311	2340456.035	8132.257204	147166132.6	1.038942	0.017
Statewide Totals	2018	Industrial - Forklift	Aggregate	Aggregate	Diesel	10238005.83	10953316.09	15255.59661	979980022	0.934695	0.010
Statewide Totals	2018	Industrial - Misc -	Aggregate	Aggregate	Diesel	2826.043236	0	1293.006379	0		
Statewide Totals	2018	Industrial - Misc -	Aggregate	Aggregate	Diesel	2205.313463	0	269.85321	0		
Statewide Totals	2018	Industrial - Misc -	Aggregate	Aggregate	Diesel	576.0709662	0	107.4215984	0		
Statewide Totals	2018	Industrial - Other (	Aggregate	Aggregate	Diesel	4944663.066	3089808.681	3883.715578	272353437.8	1.600314	0.018
Statewide Totals	2018	Industrial - Other l	Aggregate	Aggregate	Diesel	2899068.143	844535.2881	1168.219576	141266132.4	3.432738	0.021
Statewide Totals	2018	Light Commercial	Aggregate	Aggregate	Diesel	955220.5659	856319.2	1224.320912	31683810.4	1.115496	0.030
Statewide Totals	2018	Light Commercial	Aggregate	Aggregate	Diesel	4429274.996	1724030.05	15039.37052	56892991.65	2.56914	0.078
Statewide Totals	2018	Light Commercial	Aggregate	Aggregate	Diesel	22440.62962	17308.3	448.4538485	657715.4	1.296524	0.034
Statewide Totals	2018	Light Commercial	Aggregate	Aggregate	Diesel	2450067.665	899867.35	7830.68049	33295091.95	2.722699	0.074
Statewide Totals	2018	Light Commercial	Aggregate	Aggregate	Diesel	4942076.269	3377056.65	8920.754503	155344605.9	1.463427	0.032
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	2695340.718	472418.3739	1365.878684	104133919.6	5.70541	0.026
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	6414353.11	1861628.723	4109.128706	430827879.4	3.44556	0.015
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	15853308.45	3362676.862	7568.956931	714069542.2	4.714491	0.022
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	28525576.83	9107073.041	14711.22633	1436088295	3.132244	0.020
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	10731276.41	2690312.176	4755.879455	506970847.2	3.988859	0.021
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	681.5540954	0	111.2076116	0		
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	993.3243587	0	763.1400155	0		
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	38409.41651	27440.7	69.91825209	905543.1	1.399724	0.042
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	79.54928998	0	32.1440755	0		
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	569.3416727	0	50.60999757	0		
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	2102.768311	0	483.0424353	0		
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	149.3747093	0	19.87999905	0		
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	254.2855465	0	49.55518731	0		
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	710.5135762	0	441.6599662	0		
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	4370.404816	0	1338.509312	0		
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	92.7568561	0	11.68023989	0		
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	27785.6863	9920.7	3880.781617	367065.9	2.800779	0.076
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	30071.47695	0	5260.775998	0		
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	2712.876977	0	370.3535336	0		
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	3669.658104	0	579.8894966	0		
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	6030786.522	2134999.019	3348.965341	264769406.3	2.824726	0.023
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	36179004.43	4544067.748	3505.130708	1830432871	7.96181	0.020
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	8075183.583	2170988.368	5068.349833	374079331.5	3.719589	0.022
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	1902062.956	682148.8216	1798.842243	88338777.07	2.78834	0.022
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	1106579.54	455321.8708	1019.211573	59852203.46	2.430324	0.018
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	4931572.144	3094157.813	9377.272898	248593778.4	1.593833	0.020
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	5353663.19	2558234.178	9446.899993	256961475.4	2.092718	0.021
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	3164827.234	616993.3369	835.224029	153813976.9	5.129435	0.021
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	43489539.59	11523557.54	12243.77539	2332640268	3.773968	0.019
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	28325209.02	3091915.781	6879.136695	1134596062	9.161055	0.025
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	5185889.903	4091791.999	12250.39364	267705283.4	1.267388	0.019
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	595146.079	145157.8389	562.5518421	38123654.01	4.099993	0.016
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	39626930.68	21209812.19	36949.89196	2072231525	1.86833	0.019
Statewide Totals	2019	Construction and	Aggregate	Aggregate	Diesel	1637722.33	772378.1216	2219.763386	60772620.6	2.120363	0.027
Statewide Totals	2019	Industrial - Aerial l	Aggregate	Aggregate	Diesel	2521557.237	2427044.078	8325.966335	152608812.9	1.038942	0.017
Statewide Totals	2019	Industrial - Forklift	Aggregate	Aggregate	Diesel	10616773.42	11358547.46	15618.9826	1016424760	0.934695	0.010
Statewide Totals	2019	Industrial - Misc -	Aggregate	Aggregate	Diesel	2817.769775	0	1296.069245	0		
Statewide Totals	2019	Industrial - Misc -	Aggregate	Aggregate	Diesel	2179.948267	0	266.9503627	0		
Statewide Totals	2019	Industrial - Misc -	Aggregate	Aggregate	Diesel	558.4593283	0	104.2238712	0		
Statewide Totals	2019	Industrial - Other (	Aggregate	Aggregate	Diesel	5127596.945	3204119.945	3976.225093	282384174.4	1.600314	0.018
Statewide Totals	2019	Industrial - Other l	Aggregate	Aggregate	Diesel	3006322.727	875779.9076	1196.046389	146511440.5	3.432738	0.021
Statewide Totals	2019	Light Commercial	Aggregate	Aggregate	Diesel	954706.6543	857209.8	1225.870773	31716762.6	1.113737	0.030
Statewide Totals	2019	Light Commercial	Aggregate	Aggregate	Diesel	4430771.782	1725599.55	15054.71922	56944785.15	2.567671	0.078
Statewide Totals	2019	Light Commercial	Aggregate	Aggregate	Diesel	22466.38631	17333.85	448.9938773	658686.3	1.296099	0.034
Statewide Totals	2019	Light Commercial	Aggregate	Aggregate	Diesel	2450569.93	900717.8	7838.649825	33326558.6	2.720686	0.074

Statewide Totals	2019	Light Commercial	Aggregate	Aggregate	Diesel	4940604.645	3380473.05	8929.264364	155501760.3	1.461513	0.032
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	2798665.981	489284.0218	1397.142827	107980289.8	5.719921	0.026
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	6642286.656	1928055.641	4203.184195	446121570	3.44507	0.015
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	16419315.72	3482625.644	7742.205812	739712665.1	4.714637	0.022
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	29536104.31	9431965.613	15047.95747	1486673188	3.13149	0.020
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	11105738.49	2786347.472	4864.738681	524919631.9	3.985769	0.021
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	684.6003339	0	111.7344648	0		
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	1005.896264	0	774.1200013	0		
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	38893.04921	27838.55	71.10154043	918672.15	1.397093	0.042
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	80.41925708	0	32.50252145	0		
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	576.5414463	0	51.25000038	0		
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	2135.299443	0	490.5144887	0		
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	151.2889948	0	20.14000015	0		
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	257.7432135	0	50.2290174	0		
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	720.9864983	0	448.1700083	0		
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	4425.102009	0	1355.673883	0		
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	94.8845626	0	11.9481675	0		
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	28133.66352	10026.55	3936.08908	370982.35	2.805917	0.076
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	30216.72721	0	5308.780799	0		
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	2752.883043	0	375.8354835	0		
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	3711.919471	0	586.4802974	0		
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	6247618.07	2211112.564	3425.621147	274171014.6	2.825554	0.023
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	37469121.15	4706123.846	3585.361046	1897401049	7.96178	0.020
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	8366048.052	2248438.16	5184.361318	387683209.1	3.720826	0.022
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	1969407.262	706466.6067	1840.016662	91465381.88	2.787686	0.022
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	1145667.332	471562.9614	1042.540714	61962360.07	2.429511	0.018
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	5107628.644	3204557.303	9591.913046	257449166.3	1.593864	0.020
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	5546461.093	2649656.849	9663.133862	266261078.3	2.093275	0.021
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	3277911.212	639011.5277	854.3418057	159297951.9	5.129659	0.021
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	45048808.68	11934575.26	12524.02805	2416416545	3.774647	0.019
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	29329680.73	3202195.591	7036.596004	1174106937	9.159241	0.025
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	5371346.186	4238002.008	12530.7978	277337697.9	1.267424	0.019
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	616329.2588	150343.9336	575.428316	39481868.72	4.099462	0.016
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	41026000.9	21966054.86	37795.65281	2144547047	1.8677	0.019
Statewide Totals	2020	Construction and	Aggregate	Aggregate	Diesel	1695103.591	799954.321	2270.572438	62833168.98	2.119	0.027
Statewide Totals	2020	Industrial - Aerial	Aggregate	Aggregate	Diesel	2611517.164	2513632.122	8516.542706	158053258.6	1.038942	0.017
Statewide Totals	2020	Industrial - Forklift	Aggregate	Aggregate	Diesel	10995541.01	11763778.83	15976.49174	1052722818	0.934695	0.010
Statewide Totals	2020	Industrial - Misc -	Aggregate	Aggregate	Diesel	2811.731496	0	1298.842412	0		
Statewide Totals	2020	Industrial - Misc -	Aggregate	Aggregate	Diesel	2160.829283	0	264.9529444	0		
Statewide Totals	2020	Industrial - Misc -	Aggregate	Aggregate	Diesel	553.0685677	0	103.3660925	0		
Statewide Totals	2020	Industrial - Other	Aggregate	Aggregate	Diesel	5310530.824	3318431.209	4067.238499	292470833.5	1.600314	0.018
Statewide Totals	2020	Industrial - Other	Aggregate	Aggregate	Diesel	3113577.311	907024.527	1223.423173	151774149	3.432738	0.021
Statewide Totals	2020	Light Commercial	Aggregate	Aggregate	Diesel	954581.6127	858009.15	1227.120851	31746338.55	1.112554	0.030
Statewide Totals	2020	Light Commercial	Aggregate	Aggregate	Diesel	4432702.295	1727293.15	15068.81852	57000673.95	2.566271	0.078
Statewide Totals	2020	Light Commercial	Aggregate	Aggregate	Diesel	22476.16713	17301	449.243767	657438	1.299125	0.034
Statewide Totals	2020	Light Commercial	Aggregate	Aggregate	Diesel	2451509.683	901648.55	7846.269236	33360996.35	2.718919	0.073
Statewide Totals	2020	Light Commercial	Aggregate	Aggregate	Diesel	4940600.23	3383633.95	8937.903733	155647161.7	1.460146	0.032
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	2901215.994	506120.7453	1427.917196	111967861.8	5.732261	0.026
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	6870427.664	1994460.912	4295.766241	461407954.8	3.444754	0.015
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	16973084.26	3602644.318	7912.74063	764871502.2	4.711285	0.022
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	30536087.67	9756840.596	15379.41348	1537371755	3.129711	0.020
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	11481824.3	2882304.831	4971.892552	542682236.9	3.983557	0.021
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	694.5956961	0	113.4376354	0		
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	1018.441747	0	784.9600405	0		
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	39383.72297	28232.75	72.05067411	931680.75	1.394966	0.042
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	81.60570542	0	32.98404291	0		
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	585.4286389	0	52.04000121	0		
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	2168.300546	0	498.0926412	0		
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	153.8078223	0	20.48000048	0		
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	261.3064079	0	50.92341365	0		
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	731.1215901	0	454.4700474	0		
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	4485.986999	0	1374.626342	0		
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	98.06884487	0	12.34914254	0		
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	28518.92345	10198.1	3991.618649	377329.7	2.796494	0.076
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	30665.92735	0	5406.458357	0		
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	2792.144579	0	381.1956381	0		
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	3763.101997	0	595.0869652	0		
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	6463556.71	2287295.975	3501.076088	283551558.9	2.825851	0.023
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	38776133.94	4868276.424	3664.33452	1964067847	7.965064	0.020
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	8652360.661	2325905.497	5298.555403	401003005.8	3.719997	0.022
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	2036194.168	730817.1062	1880.546056	94623662.5	2.786188	0.022
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	1185296.403	487786.0513	1065.504388	64152988.88	2.429951	0.018
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	5283847.331	3314890.938	9803.190708	266303710.6	1.593973	0.020
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	5738820.73	2740940.2	9875.98028	275539520.6	2.093742	0.021
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	3387271.696	661014.2921	873.1600892	164558876.1	5.124355	0.021
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	46647587.7	12345581.1	12799.89037	2502554861	3.778485	0.019
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	30351722.55	3312391.777	7191.588605	1215003520	9.163084	0.025
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	5556561.764	4383942.86	12806.80923	286879018.6	1.26748	0.019
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	638028.0373	155525.9481	588.1030712	40863973.4	4.10239	0.016
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	42455236.52	22722847.35	38628.16423	2218799496	1.868394	0.019
Statewide Totals	2021	Construction and	Aggregate	Aggregate	Diesel	1753653.492	827441.4738	2320.58553	64984773.85	2.119369	0.027
Statewide Totals	2021	Industrial - Aerial	Aggregate	Aggregate	Diesel	2701477.091	2600220.165	8704.133568	163504937.2	1.038942	0.017
Statewide Totals	2021	Industrial - Forklift	Aggregate	Aggregate	Diesel	11374308.6	12169010.2	16328.40025	1088947474	0.934695	0.010
Statewide Totals	2021	Industrial - Misc -	Aggregate	Aggregate	Diesel	2886.546782	0	1338.118421	0		
Statewide Totals	2021	Industrial - Misc -	Aggregate	Aggregate	Diesel	2223.365059	0	272.7585543	0		
Statewide Totals	2021	Industrial - Misc -	Aggregate	Aggregate	Diesel	593.3340579	0	111.1786328	0		
Statewide Totals	2021	Industrial - Other	Aggregate	Aggregate	Diesel	5493464.702	3432742.474	4156.826117	302539473	1.600314	0.018
Statewide Totals	2021	Industrial - Other	Aggregate	Aggregate	Diesel	3220831.895	938269.1465	1250.37108	157053247.8	3.432738	0.021
Statewide Totals	2021	Light Commercial	Aggregate	Aggregate	Diesel	980128.5288	882037.1	1261.480303	32635372.7	1.11121	0.030
Statewide Totals	2021	Light Commercial	Aggregate	Aggregate	Diesel	4553896.895	1775568.05	15488.60748	58593745.65	2.564755	0.078
Statewide Totals	2021	Light Commercial	Aggregate	Aggregate	Diesel	23093.12895	17779.15	462.02289	675607.7	1.298888	0.034
Statewide Totals	2021	Light Commercial	Aggregate	Aggregate	Diesel	2518399.238	926775.15	8064.872078	34290680.55	2.717379	0.073
Statewide Totals	2021	Light Commercial	Aggregate	Aggregate	Diesel	5073556.96	3478154.35	9187.002357	159995100.1	1.458692	0.032
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	2998520.998	522994.6634	1458.224111	115711958.7	5.733368	0.026
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	7097952.169	2060913.642	4386.941994	476523177.7	3.44408	0.015
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	17529460.82	3722640.741	8080.685077	790475312.7	4.708878	0.022
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	31555925.12	10081792.36	15705.83478	1589242777	3.129992	0.020
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	11861193.8	2978250.185	5077.41879	560512657.1	3.982605	0.021
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	701.4904271	0	114.5964415	0		
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	1031.36585	0	795.8800129	0		
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	39940.41457	28678.05	73.13628018	946375.65	1.392717	0.042
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	82.870358	0	33.49570284	0		
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	592.7408271	0	52.68999766	0		
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	2200.411844	0	505.4706957	0		
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	156.124234	0	20.78999908	0		
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	265.0993639	0	51.66258502	0		
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	741.1439121	0	460.6999852	0		
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	4545.215307	0	1392.934789	0		
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	101.5789206	0	12.79114239	0		
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	28921.88206	10303.95	4046.906718	381246.15	2.806873	0.076

Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	30911.11882	0	5462.46949	0		
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	2832.059319	0	386.6449742	0		
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	3809.320674	0	602.4602214	0		
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	6680466.318	2363517.699	3575.384891	293138882.3	2.826493	0.023
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	40098014.47	5030463.446	3742.108412	2029482743	7.971038	0.020
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	8950534.894	2403345.44	5411.014916	414679925.4	3.724198	0.022
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	2104919.203	755158.5361	1920.459821	97756441.44	2.787387	0.022
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	1225057.385	504027.7897	1088.119251	66346545.27	2.430535	0.018
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	5459441.617	3425336.237	10011.25913	275227914.1	1.593841	0.020
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	5929568.253	2832253.987	10085.59363	284768891.5	2.093586	0.021
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	3501553.85	683081.9289	891.6925289	169967493.6	5.126111	0.021
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	48230071.81	12756714.52	13071.56243	2587245644	3.78076	0.019
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	31384031.07	3422897.855	7344.226917	1255937666	9.168848	0.025
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	5745895.03	4530086.183	13078.62814	296640608.4	1.268385	0.019
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	658634.7007	160711.328	600.5853007	42161652.68	4.098247	0.016
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	43898794.5	23479748.9	39448.03006	2292744512	1.869645	0.019
Statewide Totals	2022	Construction and	Aggregate	Aggregate	Diesel	1812536.475	854964.3426	2369.83894	67148544.41	2.120014	0.027
Statewide Totals	2022	Industrial - Aerial	Aggregate	Aggregate	Diesel	2791437.018	2686808.209	8888.874982	168949663.1	1.038942	0.017
Statewide Totals	2022	Industrial - Forklift	Aggregate	Aggregate	Diesel	11753076.19	12574241.58	16674.96338	1125298979	0.934695	0.010
Statewide Totals	2022	Industrial - Misc -	Aggregate	Aggregate	Diesel	2888.945793	0	1342.336227	0		
Statewide Totals	2022	Industrial - Misc -	Aggregate	Aggregate	Diesel	2221.434842	0	272.5645357	0		
Statewide Totals	2022	Industrial - Misc -	Aggregate	Aggregate	Diesel	600.1270975	0	112.472258	0		
Statewide Totals	2022	Industrial - Other	Aggregate	Aggregate	Diesel	5676398.581	3547053.738	4245.052927	312692311.5	1.600314	0.018
Statewide Totals	2022	Industrial - Other	Aggregate	Aggregate	Diesel	3328086.478	969513.766	1276.909658	162304505.2	3.432738	0.021
Statewide Totals	2022	Light Commercial	Aggregate	Aggregate	Diesel	983300.4623	885475.4	1266.430224	32762589.8	1.110477	0.030
Statewide Totals	2022	Light Commercial	Aggregate	Aggregate	Diesel	4569837.95	1782378.95	15548.12315	58818505.35	2.563898	0.078
Statewide Totals	2022	Light Commercial	Aggregate	Aggregate	Diesel	23096.01809	17837.55	463.5925528	677826.9	1.294798	0.034
Statewide Totals	2022	Light Commercial	Aggregate	Aggregate	Diesel	2527272.353	930385	8096.029751	34424245	2.716373	0.073
Statewide Totals	2022	Light Commercial	Aggregate	Aggregate	Diesel	5090162.176	3491553.5	9222.410889	160611461	1.45785	0.032
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	3096924.689	539855.605	1488.08425	119410754.8	5.73658	0.026
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	7326914.03	2127271.207	4476.773655	491840811.2	3.444278	0.015
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	18096869.97	3842548.839	8246.153726	815703594.9	4.709601	0.022
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	32577100.39	10406481.6	16027.44406	1639640973	3.130462	0.020
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	12234917.72	3074397.755	5181.389384	577994913.3	3.979614	0.021
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	710.1353777	0	116.0454708	0		
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	1044.506032	0	806.7900098	0		
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	40482.02237	29057.65	74.07070539	958902.45	1.393162	0.042
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	84.145139	0	34.01096161	0		
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	601.7405416	0	53.49000151	0		
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	2233.428804	0	513.0530979	0		
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	158.5946628	0	21.1200006	0		
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	268.9409747	0	52.41123832	0		
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	751.1019949	0	466.8899945	0		
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	4605.970233	0	1411.677888	0		
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	105.7483349	0	13.31616864	0		
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	29295.57275	10439	4102.151089	386243	2.806358	0.076
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	31180.20097	0	5519.593166	0		
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	2873.965212	0	392.3661476	0		
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	3875.332551	0	612.28237	0		
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	6897134.915	2439650.351	3648.598251	302595215.7	2.8271	0.023
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	41407817.12	5192514.952	3818.73578	2094734609	7.974521	0.020
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	9240871.447	2480856.851	5521.816577	427894247.3	3.724871	0.022
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	2172816.278	779508.9262	1959.785186	100888067.4	2.787417	0.022
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	1264206.403	520243.5523	1110.400731	68463489.1	2.430028	0.018
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	5635480.218	3535588.089	10216.26025	284082851.3	1.59393	0.020
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	6121301.848	2922903.948	10292.1169	293871171.2	2.094254	0.021
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	3614872.155	705077.0856	909.9517676	175350229.1	5.126918	0.021
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	49793597.49	13167838.8	13339.22956	2669873400	3.781456	0.019
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	32394576.41	3533025.015	7494.61507	1295390265	9.169076	0.025
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	5933720.907	4675784.554	13346.43995	306322983.3	1.269032	0.019
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	680902.1104	165862.8486	612.8835202	43590144.89	4.105212	0.016
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	45354747.76	24236328.8	40255.80962	2367658790	1.871354	0.019
Statewide Totals	2023	Construction and	Aggregate	Aggregate	Diesel	1872140.451	882543.8533	2418.366267	69370762.06	2.1213	0.027
Statewide Totals	2023	Industrial - Aerial	Aggregate	Aggregate	Diesel	2881396.945	2773396.252	9070.892982	174395633	1.038942	0.017
Statewide Totals	2023	Industrial - Forklift	Aggregate	Aggregate	Diesel	12131843.78	12979472.95	17016.41756	1161604673	0.934695	0.010
Statewide Totals	2023	Industrial - Misc -	Aggregate	Aggregate	Diesel	2886.759255	0	1343.637272	0		
Statewide Totals	2023	Industrial - Misc -	Aggregate	Aggregate	Diesel	2216.552843	0	271.8783771	0		
Statewide Totals	2023	Industrial - Misc -	Aggregate	Aggregate	Diesel	598.8285127	0	111.9251132	0		
Statewide Totals	2023	Industrial - Other	Aggregate	Aggregate	Diesel	5859332.46	3661365.002	4331.979118	322862515.1	1.600314	0.018
Statewide Totals	2023	Industrial - Other	Aggregate	Aggregate	Diesel	3435341.062	1000758.385	1303.05701	167542678.1	3.432738	0.021
Statewide Totals	2023	Light Commercial	Aggregate	Aggregate	Diesel	986662.6716	888796.9	1271.660119	32885485.3	1.11011	0.030
Statewide Totals	2023	Light Commercial	Aggregate	Aggregate	Diesel	4585946.981	1789153.35	15606.76842	59042060.55	2.563194	0.078
Statewide Totals	2023	Light Commercial	Aggregate	Aggregate	Diesel	23130.09838	17961.65	465.2225958	682542.7	1.287749	0.034
Statewide Totals	2023	Light Commercial	Aggregate	Aggregate	Diesel	2536034.704	933896.3	8126.787041	34554163.1	2.715542	0.073
Statewide Totals	2023	Light Commercial	Aggregate	Aggregate	Diesel	5106803.275	3504824.9	9256.999337	161221945.4	1.457078	0.032
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	3196442.004	556666.2811	1517.516805	123112454.3	5.742115	0.026
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	7554289.383	2193715.352	4565.318971	507083129.5	3.443605	0.015
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	18654090.78	3962573.304	8409.252945	840636374.5	4.70757	0.022
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	33598708.81	10731509.53	16344.44805	1690563559	3.130846	0.020
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	12611155.72	3170331.991	5283.87117	596038352.3	3.977866	0.021
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	720.6398598	0	117.7849646	0		
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	1058.207213	0	817.7899423	0		
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	41009.39843	29470.1	75.18214922	972513.3	1.39156	0.042
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	85.23637208	0	34.45203145	0		
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	609.16524	0	54.14999843	0		
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	2266.151369	0	520.5676242	0		
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	160.5470508	0	21.37999938	0		
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	272.610133	0	53.12628414	0		
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	761.3174384	0	473.2399914	0		
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	4670.003129	0	1431.274546	0		
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	109.2086183	0	13.75189831	0		
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	29713.31042	10581.35	4157.591304	391509.95	2.808083	0.076
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	31479.47959	0	5578.399073	0		
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	2913.559757	0	397.7717618	0		
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	3926.414557	0	620.2168981	0		
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	7113817.217	2515807.727	3720.763232	312158422.1	2.827647	0.023
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	42709917.76	5354651.573	3894.265881	2162516781	7.976227	0.020
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	9533365.1	2558302.66	5631.031613	441148288.4	3.726441	0.022
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	2241977.04	803842.3667	1998.547431	104053471.5	2.789075	0.022
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	1303362.668	536487.8244	1132.363151	70583455.69	2.429436	0.018
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	5812106.225	3645943.163	10418.32586	292947291.4	1.59413	0.020
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	6311222.141	3014208.395	10495.68287	302923997.9	2.093824	0.021
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	3727136.81	727097.2291	927.9495431	180826406.2	5.12605	0.021
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	51346963.01	13579056.51	13603.06383	2752115402	3.781335	0.019
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	33394215.22	3643469.51	7642.849739	1335533221	9.165499	0.025
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	6121726.661	4821826.306	13610.41683	315852432.9	1.269587	0.019
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	702725.5695	171053.0218	625.0056352	44977468.12	4.108232	0.016
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	46803054.75	24992747.11	41052.02218	2442776145	1.872665	0.019
Statewide Totals	2024	Construction and	Aggregate	Aggregate	Diesel	1929315.556	910101.6057	2466.198706	71498102.19	2.11989	0.027
Statewide Totals	2024	Industrial - Aerial	Aggregate	Aggregate	Diesel	2971356.871	2859984.296	9250.304574	179841977.4	1.038942	0.017

Statewide Totals	2024	Industrial - Forklift	Aggregate	Aggregate	Diesel	12510611.37	13384704.32	17352.98228	1197963792	0.934695	0.010
Statewide Totals	2024	Industrial - Misc -	Aggregate	Aggregate	Diesel	2884.223304	0	1343.835635	0		
Statewide Totals	2024	Industrial - Misc -	Aggregate	Aggregate	Diesel	2207.288202	0	271.1433235	0		
Statewide Totals	2024	Industrial - Misc -	Aggregate	Aggregate	Diesel	594.2664143	0	111.2091011	0		
Statewide Totals	2024	Industrial - Other	Aggregate	Aggregate	Diesel	6042266.339	3775676.266	4417.660568	332986537	1.600314	0.018
Statewide Totals	2024	Industrial - Other	Aggregate	Aggregate	Diesel	3542595.646	1032003.005	1328.829944	172775144	3.432738	0.021
Statewide Totals	2024	Light Commercial	Aggregate	Aggregate	Diesel	989787.8202	892081.9	1276.169981	33007030.3	1.109526	0.030
Statewide Totals	2024	Light Commercial	Aggregate	Aggregate	Diesel	4602102.364	1795792.7	15665.20447	59261159.1	2.562714	0.078
Statewide Totals	2024	Light Commercial	Aggregate	Aggregate	Diesel	23211.06584	18041.95	467.1324449	685594.1	1.286505	0.034
Statewide Totals	2024	Light Commercial	Aggregate	Aggregate	Diesel	2544764.377	937455.05	8157.104779	34685836.85	2.714545	0.073
Statewide Totals	2024	Light Commercial	Aggregate	Aggregate	Diesel	5123993.339	3518008.7	9292.497751	161828400.2	1.456504	0.032
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	3238464.151	563267.3083	1528.843695	124872265	5.749427	0.026
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	7642444.923	2219491.44	4599.394947	512933730.8	3.443332	0.015
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	18871524.48	4009079.229	8472.02041	850312919.4	4.707197	0.022
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	34007896.64	10857766.05	16466.44456	1711353023	3.132126	0.020
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	12757536.22	3207652.87	5323.310488	602675197.5	3.977218	0.021
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	732.1001183	0	119.6590449	0		
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	1072.028679	0	828.7700933	0		
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	41529.3606	29857	76.16977355	985281	1.390942	0.042
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	86.43387176	0	34.93605369	0		
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	617.3774998	0	54.88000389	0		
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	2298.912933	0	528.0911812	0		
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	162.2741862	0	21.61000153	0		
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	275.7972833	0	53.74739559	0		
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	771.5007598	0	479.5700048	0		
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	4733.672464	0	1450.683127	0		
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	112.2858709	0	14.13939588	0		
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	30094.28267	10712.75	4212.859112	396371.75	2.809202	0.076
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	31812.34595	0	5639.784075	0		
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	2954.284992	0	403.3317494	0		
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	3977.567107	0	628.5279865	0		
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	7194749.158	2545332.345	3748.535363	315596550.8	2.826644	0.023
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	43243390.98	5417694.452	3923.333052	2191867458	7.981881	0.020
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	9645582.069	2588340.919	5673.062169	446224673.3	3.72655	0.022
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	2267345.601	813282.4033	2013.46478	105258157.9	2.787895	0.022
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	1318770.194	542821.7648	1140.815217	71434111.71	2.429472	0.018
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	5880071.605	3689086.255	10496.08924	296390266.7	1.59391	0.020
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	6385088.883	3049596.741	10574.02364	306386278.5	2.093749	0.021
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	3769575.664	735622.3168	934.8758469	182884530.7	5.124336	0.021
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	51982942.82	13738589.54	13704.59839	2784311885	3.783718	0.019
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	33788350.83	3686149.763	7699.896698	1351523267	9.166299	0.025
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	6191518.686	4878847.336	13712.00628	319318024.4	1.269054	0.019
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	710144.115	173041.8073	629.6707368	45468673.17	4.103888	0.016
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	47393708.04	25286575.2	41358.43838	2474117440	1.874264	0.019
Statewide Totals	2025	Construction and	Aggregate	Aggregate	Diesel	1952816.247	920877.032	2484.606649	72353545.65	2.120605	0.027
Statewide Totals	2025	Industrial - Aerial l	Aggregate	Aggregate	Diesel	3006318.039	2893635.047	9319.349729	181959222	1.038942	0.017
Statewide Totals	2025	Industrial - Forklift	Aggregate	Aggregate	Diesel	12657812	13542189.57	17482.50659	1211981553	0.934695	0.010
Statewide Totals	2025	Industrial - Misc -	Aggregate	Aggregate	Diesel	2871.796874	0	1338.651959	0		
Statewide Totals	2025	Industrial - Misc -	Aggregate	Aggregate	Diesel	2220.218764	0	272.6152873	0		
Statewide Totals	2025	Industrial - Misc -	Aggregate	Aggregate	Diesel	595.5442415	0	111.4980134	0		
Statewide Totals	2025	Industrial - Other	Aggregate	Aggregate	Diesel	6113360.016	3820101.105	4450.634407	336916085.1	1.600314	0.018
Statewide Totals	2025	Industrial - Other	Aggregate	Aggregate	Diesel	3584278.045	1044145.616	1338.748458	174815485.6	3.432738	0.021
Statewide Totals	2025	Light Commercial	Aggregate	Aggregate	Diesel	993249.2587	895596.85	1281.279958	33137083.45	1.109036	0.030
Statewide Totals	2025	Light Commercial	Aggregate	Aggregate	Diesel	4619238.616	1802924.8	15726.80979	59496518.4	2.562081	0.078
Statewide Totals	2025	Light Commercial	Aggregate	Aggregate	Diesel	23312.5976	18100.35	469.1421394	687813.3	1.287964	0.034
Statewide Totals	2025	Light Commercial	Aggregate	Aggregate	Diesel	2554227.523	941108.7	8189.411973	34821021.9	2.714062	0.073
Statewide Totals	2025	Light Commercial	Aggregate	Aggregate	Diesel	5142473.42	3531813	9329.055886	162463398	1.456044	0.032
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	3278476.515	569800.9471	1540.109714	126256104.7	5.753722	0.026
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	7731243.23	2245319.225	4633.287795	518939352.3	3.443271	0.015
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	19093426.62	4055724.113	8534.450558	860256755	4.707773	0.022
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	34412805.39	10984117.59	16587.78546	1731610337	3.13296	0.020
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	12914808.15	3244857.783	5362.537855	610268778.4	3.980084	0.021
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	745.545965	0	121.8351588	0		
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	1085.925862	0	839.6200177	0		
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	42081.88182	30284.05	77.14654716	999373.65	1.389572	0.042
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	87.68151429	0	35.44034315	0		
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	626.0396352	0	55.64999973	0		
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	2330.887579	0	535.435933	0		
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	165.1276761	0	21.98999989	0		
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	279.2073837	0	54.41195671	0		
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	781.5875032	0	485.8399907	0		
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	4796.281459	0	1469.732523	0		
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	114.6327639	0	14.43492398	0		
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	30490.41261	10884.3	4268.410907	402719.1	2.80132	0.076
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	32130.73611	0	5696.880107	0		
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	2994.865555	0	408.8719765	0		
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	4036.736501	0	636.9607282	0		
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	7278689.474	2575033.987	3776.158245	319161444.8	2.826638	0.023
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	43765676.22	5480663.371	3952.244014	2217951387	7.985471	0.020
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	9751350.114	2618468.6	5714.86685	451025340.3	3.724066	0.022
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	2294147.93	822738.4293	2028.301961	106530820.3	2.788429	0.022
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	1334530.905	549119.8028	1149.221862	72272335.86	2.430309	0.018
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	5949893.431	3731848.717	10573.43471	299944408.6	1.594355	0.020
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	6459299.181	3085065.535	10651.94341	309874731.2	2.093732	0.021
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	3808176.993	744182.3915	941.7649281	184627348	5.117263	0.021
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	52589879.03	13898394.11	13805.5873	2816193177	3.783882	0.019
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	34181608.74	3729040.755	7756.637081	1367532993	9.166327	0.025
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	6261234.372	4935476.368	13813.04978	322829093.4	1.268618	0.019
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	720048.1836	175076.5403	634.3107677	46089172.46	4.112762	0.016
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	47977644.6	25580929.92	41663.20788	2504432034	1.875524	0.019
Statewide Totals	2026	Construction and	Aggregate	Aggregate	Diesel	1975989.283	931590.1178	2502.915665	73264912.41	2.121093	0.027
Statewide Totals	2026	Industrial - Aerial l	Aggregate	Aggregate	Diesel	3041279.207	2927285.798	9388.023828	184084735.7	1.038942	0.017
Statewide Totals	2026	Industrial - Forklift	Aggregate	Aggregate	Diesel	12805012.62	13699674.83	17611.33483	1226093164	0.934695	0.010
Statewide Totals	2026	Industrial - Misc -	Aggregate	Aggregate	Diesel	2878.932704	0	1342.18078	0		
Statewide Totals	2026	Industrial - Misc -	Aggregate	Aggregate	Diesel	2238.493472	0	274.9471062	0		
Statewide Totals	2026	Industrial - Misc -	Aggregate	Aggregate	Diesel	599.8164494	0	112.2195048	0		
Statewide Totals	2026	Industrial - Other	Aggregate	Aggregate	Diesel	6184453.693	3864525.945	4483.431042	340804255.4	1.600314	0.018
Statewide Totals	2026	Industrial - Other	Aggregate	Aggregate	Diesel	3625960.443	1056288.227	1348.613668	176935009.4	3.432738	0.020
Statewide Totals	2026	Light Commercial	Aggregate	Aggregate	Diesel	997303.2789	899531.55	1286.389974	33282667.35	1.108692	0.030
Statewide Totals	2026	Light Commercial	Aggregate	Aggregate	Diesel	4637926.461	1810593.45	15793.45572	59749583.85	2.56155	0.078
Statewide Totals	2026	Light Commercial	Aggregate	Aggregate	Diesel	23346.7419	18166.05	471.2920599	690309.9	1.285185	0.034
Statewide Totals	2026	Light Commercial	Aggregate	Aggregate	Diesel	2564557.749	945061.65	8223.989557	34967281.05	2.713641	0.073
Statewide Totals	2026	Light Commercial	Aggregate	Aggregate	Diesel	5162769.65	3546916.7	9368.414343	163158168.2	1.455566	0.032
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	3307130.32	576359.5802	1551.315831	127388842.9	5.737964	0.026
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	7820247.57	2271221.769	4667.000438	524891458.6	3.44319	0.015
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	19320335.92	4102456.263	8596.548768	870457060.5	4.709456	0.022
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	34814646.62	11110459.73	16708.4812	1751896502	3.133502	0.020
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	13059315.07	3282208.571	5401.556653	616749531.4	3.978819	0.021
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	758.587349	0	123.961823	0		
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	1100.14937	0	850.6099216	0		

Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	42649.04832	30678.25	78.05279301	1012382.25	1.390205	0.042
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	88.92442892	0	35.94272223	0		
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	634.0268403	0	56.35999945	0		
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	2364.207935	0	543.0883619	0		
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	167.4555323	0	22.29999979	0		
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	283.3169202	0	55.21282337	0		
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	791.7547645	0	492.1600238	0		
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	4859.717018	0	1489.108441	0		
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	116.3656244	0	14.65313171	0		
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	30878.87223	11052.2	4323.773974	408931.4	2.793912	0.076
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	32460.25217	0	5755.753654	0		
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	3035.161674	0	414.3733792	0		
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	4086.590141	0	644.496782	0		
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	7361077.343	2604573.881	3803.634257	322657338.5	2.826212	0.023
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	44263137.06	5543673.984	3981.001259	2244705589	7.984441	0.020
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	9863433.234	2648512.333	5756.449258	455969153.6	3.724141	0.022
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	2321214.687	832214.6987	2043.060254	107739998.1	2.789202	0.022
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	1350009.872	555456.1702	1157.583808	73083178.81	2.430453	0.018
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	6018428.024	3774678.173	10650.36894	303343693.5	1.594421	0.020
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	6534190.637	3120582.588	10729.44888	313540146.6	2.093901	0.021
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	3852616.082	752748.0035	948.6173805	186785873.2	5.118069	0.021
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	53197376.63	14058412.06	13906.03925	2847793548	3.784025	0.019
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	34589114.38	3771967.635	7813.075779	1384090348	9.170045	0.025
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	6332806.952	4992189.324	13913.55603	326502880.6	1.268543	0.019
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	728365.7535	177106.5618	638.9261279	46649641.53	4.112585	0.016
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	48537209.51	25874422.53	41966.35693	2533352509	1.875876	0.019
Statewide Totals	2027	Construction and	Aggregate	Aggregate	Diesel	1999877.347	942248.7588	2521.127333	74126913.89	2.122452	0.027
Statewide Totals	2027	Industrial - Aerial l	Aggregate	Aggregate	Diesel	3076240.374	2960936.549	9456.332792	186202203.2	1.038942	0.017
Statewide Totals	2027	Industrial - Forklift	Aggregate	Aggregate	Diesel	12952213.24	13857160.08	17739.47809	1240248828	0.934695	0.010
Statewide Totals	2027	Industrial - Misc -	Aggregate	Aggregate	Diesel	2896.376466	0	1350.448332	0		
Statewide Totals	2027	Industrial - Misc -	Aggregate	Aggregate	Diesel	2262.102368	0	277.9955195	0		
Statewide Totals	2027	Industrial - Misc -	Aggregate	Aggregate	Diesel	600.8813206	0	112.4278122	0		
Statewide Totals	2027	Industrial - Other (	Aggregate	Aggregate	Diesel	6255547.371	3908950.784	4516.0533	344721589.7	1.600314	0.018
Statewide Totals	2027	Industrial - Other l	Aggregate	Aggregate	Diesel	3667642.841	1068430.837	1358.426426	178948665.3	3.432738	0.020
Statewide Totals	2027	Light Commercial	Aggregate	Aggregate	Diesel	1001549.887	903637.8	1292.449793	33434598.6	1.108353	0.030
Statewide Totals	2027	Light Commercial	Aggregate	Aggregate	Diesel	4658608.93	1818911.8	15866.94961	60024089.4	2.561207	0.078
Statewide Totals	2027	Light Commercial	Aggregate	Aggregate	Diesel	23496.02784	18239.05	473.361978	693083.9	1.288227	0.034
Statewide Totals	2027	Light Commercial	Aggregate	Aggregate	Diesel	2575828.662	949423.4	8261.736128	35128665.8	2.713045	0.073
Statewide Totals	2027	Light Commercial	Aggregate	Aggregate	Diesel	5185175.85	3563290.6	9412.182226	163911367.6	1.455165	0.032
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	3343238	582918.4057	1562.462994	128889312.8	5.735345	0.026
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	7910789.027	2296851.309	4700.535718	530832280.6	3.444189	0.015
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	19541143.38	4148973.461	8658.320279	880350826.2	4.709874	0.022
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	35198101.18	11236635.36	16828.54195	1771151838	3.132441	0.020
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	13214606.42	3319454.851	5440.370174	624129701	3.980957	0.021
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	772.1890053	0	126.180007	0		
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	1114.075474	0	861.4500147	0		
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	43165.14576	31068.8	79.11550909	1025270.4	1.389341	0.042
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	89.97606102	0	36.36778534	0		
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	641.5640814	0	57.0300012	0		
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	2397.022307	0	550.6245013	0		
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	169.2577505	0	22.54000047	0		
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	286.5108571	0	55.83525797	0		
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	802.0024026	0	498.5300308	0		
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	4924.479899	0	1508.624078	0		
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	116.9169979	0	14.7225621	0		
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	31300.11594	11176.3	4379.044134	413523.1	2.800579	0.076
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	32792.79571	0	5815.040882	0		
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	3075.587136	0	419.8924391	0		
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	4132.24004	0	651.3680249	0		
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	7448166.032	2634170.835	3830.965718	326327690.1	2.827518	0.023
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	44768333.11	5606617.501	4009.607211	2271853368	7.984909	0.020
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	9975678.72	2678735.137	5797.8129	461021501.6	3.724026	0.022
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	2347177.449	841672.7365	2057.740903	108942907.6	2.788706	0.022
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	1365399.315	561742.8056	1165.901763	73929550.44	2.430649	0.018
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	6086726.652	3817527.137	10726.89841	306708003.6	1.594416	0.020
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	6608685.141	3156669.821	10806.5466	317177532.8	2.093562	0.021
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	3895693.855	761253.6287	955.4337822	188781543.6	5.117472	0.021
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	53782000.45	14217999.98	14005.96273	2879015690	3.78267	0.019
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	34992812.95	3814922.202	7869.217554	1400499065	9.172615	0.025
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	6404801.099	5048872.625	14013.53353	330242642.7	1.268561	0.019
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	735895.7055	179099.9796	643.5172067	47158614.71	4.108854	0.016
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	49107648.73	26169178.09	42267.91113	2563347597	1.876545	0.019
Statewide Totals	2028	Construction and	Aggregate	Aggregate	Diesel	2022732.507	952908.2947	2539.24319	74959826.24	2.122694	0.027
Statewide Totals	2028	Industrial - Aerial l	Aggregate	Aggregate	Diesel	3111201.542	2994587.3	9524.282383	188319222.2	1.038942	0.017
Statewide Totals	2028	Industrial - Forklift	Aggregate	Aggregate	Diesel	13099413.87	14014645.34	17866.9472	1254452938	0.934695	0.010
Statewide Totals	2028	Industrial - Misc -	Aggregate	Aggregate	Diesel	2918.676424	0	1360.940268	0		
Statewide Totals	2028	Industrial - Misc -	Aggregate	Aggregate	Diesel	2284.59333	0	280.7752163	0		
Statewide Totals	2028	Industrial - Misc -	Aggregate	Aggregate	Diesel	605.9954558	0	113.4021926	0		
Statewide Totals	2028	Industrial - Other (	Aggregate	Aggregate	Diesel	6326641.048	3953375.623	4548.503932	348654309.2	1.600314	0.018
Statewide Totals	2028	Industrial - Other l	Aggregate	Aggregate	Diesel	3709325.239	1080573.448	1368.187558	181009884.1	3.432738	0.020
Statewide Totals	2028	Light Commercial	Aggregate	Aggregate	Diesel	1005974.088	907879.1	1298.359582	33591526.7	1.108049	0.030
Statewide Totals	2028	Light Commercial	Aggregate	Aggregate	Diesel	4679834.964	1827569.6	15941.45433	60309796.8	2.560688	0.078
Statewide Totals	2028	Light Commercial	Aggregate	Aggregate	Diesel	23631.11685	18396	475.5416068	699048	1.284579	0.034
Statewide Totals	2028	Light Commercial	Aggregate	Aggregate	Diesel	2587549.246	953978.6	8300.873326	35297208.2	2.712377	0.073
Statewide Totals	2028	Light Commercial	Aggregate	Aggregate	Diesel	5208376.954	3580062.35	9456.660182	164682868.1	1.454829	0.032
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	3382726.254	589448.0068	1573.552121	130332106.7	5.738803	0.026
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	7999152.747	2322767.955	4733.896406	536817924.3	3.443802	0.015
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	19755252.3	4195602.057	8719.770196	889986264.7	4.708562	0.022
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	35593489.29	11362909.38	16947.97765	1790897466	3.132427	0.020
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	13371472.06	3356785.333	5478.981623	631454326	3.983416	0.021
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	782.9551658	0	127.9049348	0		
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	1128.159079	0	872.3099393	0		
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	43724.64613	31455.7	79.94518105	1038038.1	1.390039	0.042
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	91.12349776	0	36.83157244	0		
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	650.2262252	0	57.79999666	0		
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	2429.940138	0	558.1848277	0		
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	171.5855932	0	22.84999868	0		
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	289.8590343	0	56.48775197	0		
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	812.0086805	0	504.7499905	0		
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	4986.125717	0	1527.337001	0		
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	117.7426388	0	14.82652957	0		
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	31695.85759	11362.45	4434.401002	420410.65	2.789527	0.075
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	33138.34786	0	5876.504363	0		
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	3115.975573	0	425.4064435	0		
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	4172.66965	0	657.6475452	0		
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	7532936.655	2663729.565	3858.154886	330242745.5	2.827966	0.023
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	45281300.82	5669652.256	4038.064235	2297057125	7.98661	0.020
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	10090789.09	2708780.187	5838.961195	466489469.5	3.725215	0.022
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	2372654.916	851121.3441	2072.345122	110178496.3	2.787681	0.022
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	1380829.789	568089.1112	1174.176412	74739337.19	2.430657	0.018

Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	6154843.362	3860439.001	10803.02946	310114102.1	1.594338	0.020
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	6683232.87	3191297.886	10883.24293	320686124.7	2.094205	0.021
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	3936100.46	769844.8965	962.2146963	190853130.5	5.112849	0.021
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	54370163.85	14377793.46	14105.36599	2911559425	3.781537	0.019
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	35386937.5	3857581.974	7925.067042	1416427713	9.173347	0.025
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	6480488.322	5105535.109	14112.99051	333964867.2	1.269306	0.019
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	743830.6555	181089.3983	648.0843834	47666893.56	4.107533	0.016
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	49669402.43	26462977.66	42567.89536	2592935509	1.876939	0.019
Statewide Totals	2029	Construction and	Aggregate	Aggregate	Diesel	2044105.616	963577.0578	2557.264732	75760883.93	2.121372	0.027
Statewide Totals	2029	Industrial - Aerial	Aggregate	Aggregate	Diesel	3146162.71	3028238.051	9591.878214	190429997.5	1.038942	0.017
Statewide Totals	2029	Industrial - Forklift	Aggregate	Aggregate	Diesel	13246614.49	14172130.59	17993.75267	1268463472	0.934695	0.010
Statewide Totals	2029	Industrial - Misc -	Aggregate	Aggregate	Diesel	2944.008798	0	1372.803537	0		
Statewide Totals	2029	Industrial - Misc -	Aggregate	Aggregate	Diesel	2311.787373	0	283.8880525	0		
Statewide Totals	2029	Industrial - Misc -	Aggregate	Aggregate	Diesel	609.2555618	0	114.0612358	0		
Statewide Totals	2029	Industrial - Other	Aggregate	Aggregate	Diesel	6397734.725	3997800.462	4580.785619	352580041.5	1.600314	0.018
Statewide Totals	2029	Industrial - Other	Aggregate	Aggregate	Diesel	3751007.638	1092716.059	1377.897873	183026218.7	3.432738	0.020
Statewide Totals	2029	Light Commercial	Aggregate	Aggregate	Diesel	1010692.731	912346.7	1305.019677	33756827.9	1.107795	0.030
Statewide Totals	2029	Light Commercial	Aggregate	Aggregate	Diesel	4702048.986	1836493.85	16019.18886	60604297.05	2.56034	0.078
Statewide Totals	2029	Light Commercial	Aggregate	Aggregate	Diesel	23715.29755	18472.65	477.5416428	701960.7	1.283806	0.034
Statewide Totals	2029	Light Commercial	Aggregate	Aggregate	Diesel	2599705.13	958621.4	8341.530152	35468991.8	2.711921	0.073
Statewide Totals	2029	Light Commercial	Aggregate	Aggregate	Diesel	5232572.622	3597520.3	9502.588016	165485933.8	1.454494	0.032
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	3420316.192	595998.1419	1584.584112	131780398.8	5.738803	0.026
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	8088041.894	2348579.296	4767.085202	542783217	3.443802	0.015
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	19974778.99	4242224.931	8780.903487	899876077.2	4.708562	0.022
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	35989015.55	11489177.67	17066.79794	1810798492	3.132427	0.020
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	13520060.14	3394087.007	5517.394124	638471248.7	3.983416	0.021
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	791.8007351	0	129.3253088	0		
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	1142.405398	0	883.3500073	0		
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	44251.88733	31875.45	80.94842078	1051889.85	1.388275	0.042
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	92.28579871	0	37.30136776	0		
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	657.5384777	0	58.44999908	0		
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	2463.138705	0	565.8068913	0		
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	174.1387338	0	23.18999963	0		
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	293.480886	0	57.19357797	0		
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	822.0954045	0	511.0199694	0		
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	5046.781274	0	1545.800142	0		
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	118.4116864	0	14.91077814	0		
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	32095.08238	11504.8	4489.749799	425677.6	2.789712	0.075
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	33480.14293	0	5937.177268	0		
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	3156.577237	0	430.9495554	0		
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	4208.921191	0	663.1713969	0		
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	7616645.06	2693329.781	3885.20396	333912508.7	2.827966	0.023
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	45784481.14	5732655.248	4066.374632	2322582760	7.98661	0.020
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	10202921.17	2738881.02	5879.897471	471673249.9	3.725215	0.022
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	2399020.617	860579.2771	2086.874092	111402835	2.787681	0.022
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	1396174.012	574401.8993	1182.408426	75569864.64	2.430657	0.018
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	6223237.952	3903337.436	10878.76824	313560189.4	1.594338	0.020
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	6757499.094	3226760.61	10959.54407	324249691.6	2.094205	0.021
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	3979839.669	778399.6596	968.9606713	192973951.6	5.112849	0.021
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	54974342.53	14537564.1	14204.25707	2943913605	3.781537	0.019
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	35780168.49	3900448.661	7980.628763	1432167512	9.173347	0.025
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	6552501.584	5162269.45	14211.93504	337675991.8	1.269306	0.019
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	752096.3399	183101.7217	652.6280274	48196583.35	4.107533	0.016
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	50221344.74	26757042.74	42866.33391	2621749039	1.876939	0.019
Statewide Totals	2030	Construction and	Aggregate	Aggregate	Diesel	2066820.373	974284.6347	2575.193416	76602763.14	2.121372	0.027
Statewide Totals	2030	Industrial - Aerial	Aggregate	Aggregate	Diesel	3181123.878	3061888.802	9659.125754	192546116.6	1.038942	0.017
Statewide Totals	2030	Industrial - Forklift	Aggregate	Aggregate	Diesel	13393815.11	14329615.84	18119.90477	1282559045	0.934695	0.010
Statewide Totals	2030	Industrial - Misc -	Aggregate	Aggregate	Diesel	2970.129104	0	1384.997413	0		
Statewide Totals	2030	Industrial - Misc -	Aggregate	Aggregate	Diesel	2333.308595	0	286.4299386	0		
Statewide Totals	2030	Industrial - Misc -	Aggregate	Aggregate	Diesel	612.4171377	0	114.6332109	0		
Statewide Totals	2030	Industrial - Other	Aggregate	Aggregate	Diesel	6468828.403	4042225.301	4612.900972	356498023.9	1.600314	0.018
Statewide Totals	2030	Industrial - Other	Aggregate	Aggregate	Diesel	3792690.036	1104858.67	1387.558154	185060064.7	3.432738	0.020
Statewide Totals	2030	Light Commercial	Aggregate	Aggregate	Diesel	1015599.13	916931.1	1311.489405	33926450.7	1.107607	0.030
Statewide Totals	2030	Light Commercial	Aggregate	Aggregate	Diesel	4725348.491	1845775.8	16100.07286	60910601.4	2.560088	0.078
Statewide Totals	2030	Light Commercial	Aggregate	Aggregate	Diesel	23914.59433	18585.8	480.211166	706260.4	1.286713	0.034
Statewide Totals	2030	Light Commercial	Aggregate	Aggregate	Diesel	2612616.092	963516.05	8383.586917	35650093.85	2.711544	0.073
Statewide Totals	2030	Light Commercial	Aggregate	Aggregate	Diesel	5257990.842	3615686.35	9550.626103	166321572.1	1.454217	0.032
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	3457906.129	602548.2769	1595.559839	133228691	5.738803	0.026
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	8176931.042	2374390.638	4800.104735	548748509.7	3.443802	0.015
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	20194305.68	4288847.804	8841.724999	909765889.6	4.708562	0.022
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	36384541.8	11615445.96	17185.01225	1830699519	3.132427	0.020
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	13668648.22	3431388.681	5555.610721	645488171.4	3.983416	0.021
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	798.84842	0	130.4569851	0		
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	1156.482718	0	894.2399812	0		
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	44767.99162	32309.8	82.05256932	1066223.4	1.385586	0.042
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	93.49802122	0	37.79134038	0		
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	666.988148	0	59.29000089	0		
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	2495.465873	0	573.2335371	0		
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	176.1662295	0	23.46000035	0		
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	297.0300556	0	57.88524107	0		
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	832.262644	0	517.3400012	0		
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	5106.580244	0	1564.014771	0		
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	119.3884571	0	15.03377613	0		
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	32491.12331	11643.5	4545.120774	430809.5	2.790495	0.075
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	33818.26469	0	5997.137806	0		
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	3197.346571	0	436.5155688	0		
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	4240.409672	0	668.337712	0		
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	7700353.465	2722929.997	3912.115083	337582271.8	2.827966	0.023
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	46287661.46	5795658.24	4094.540647	2348108394	7.98661	0.020
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	10315053.25	2768981.853	5920.624972	476857030.3	3.725215	0.022
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	2425386.319	870037.21	2101.328965	112627173.7	2.787681	0.022
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	1411518.235	580714.6875	1190.598457	76400392.09	2.430657	0.018
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	6291632.543	3946235.87	10954.12075	317006276.6	1.594338	0.020
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	6831765.318	3262223.334	11035.45609	327813258.6	2.094205	0.021
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	4023578.878	786954.4226	975.6722418	195094772.8	5.112849	0.021
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	55578521.2	14697334.75	14302.6438	2976267786	3.781537	0.019
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	36173399.47	3943315.347	8035.907118	1447907310	9.173347	0.025
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	6624514.846	5219003.792	14310.37496	341387116.3	1.269306	0.019
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	760362.0244	185114.0451	657.1484988	48726273.14	4.107533	0.016
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	50773287.05	27051107.83	43163.25042	2650562569	1.876939	0.019
Statewide Totals	2031	Construction and	Aggregate	Aggregate	Diesel	2089535.129	984992.2116	2593.030665	77444642.35	2.121372	0.027
Statewide Totals	2031	Industrial - Aerial	Aggregate	Aggregate	Diesel	3216085.045	3095539.553	9726.03033	194662235.8	1.038942	0.017
Statewide Totals	2031	Industrial - Forklift	Aggregate	Aggregate	Diesel	13541015.73	14487101.1	18245.4135	1296654617	0.934695	0.010
Statewide Totals	2031	Industrial - Misc -	Aggregate	Aggregate	Diesel	2994.161606	0	1396.203355	0		
Statewide Totals	2031	Industrial - Misc -	Aggregate	Aggregate	Diesel	2352.166348	0	288.6851504	0		
Statewide Totals	2031	Industrial - Misc -	Aggregate	Aggregate	Diesel	615.2121108	0	115.1077725	0		
Statewide Totals	2031	Industrial - Other	Aggregate	Aggregate	Diesel	6539922.08	4086650.141	4644.852538	360416006.2	1.600314	0.018
Statewide Totals	2031	Industrial - Other	Aggregate	Aggregate	Diesel	3834372.434	1117001.281	1397.169168	187093910.7	3.432738	0.020
Statewide Totals	2031	Light Commercial	Aggregate	Aggregate	Diesel	1020740.046	921741.8	1318.159338	34104446.6	1.107403	0.030
Statewide Totals	2031	Light Commercial	Aggregate	Aggregate	Diesel	4749890.542	1855411.8	16185.07677	61228589.4	2.56002	0.078

Statewide Totals	2031	Light Commercial	Aggregate	Aggregate	Diesel	24022.95235	18695.3	482.7610991	710421.4	1.284973	0.034
Statewide Totals	2031	Light Commercial	Aggregate	Aggregate	Diesel	2626132.683	968531.15	8427.893429	35835652.55	2.711459	0.073
Statewide Totals	2031	Light Commercial	Aggregate	Aggregate	Diesel	5285084.479	3634768.55	9600.323764	167199353.3	1.454036	0.032
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	3495496.067	609098.412	1606.480155	134676983.1	5.738803	0.026
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	8265820.189	2400201.979	4832.957568	554713802.4	3.443802	0.015
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	20413832.37	4335470.678	8902.239453	919655702	4.708562	0.022
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	36780068.05	11741714.24	17302.62976	1850600545	3.132427	0.020
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	13817236.3	3468690.354	5593.634381	652505094.2	3.983416	0.021
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	805.9184327	0	131.5885519	0		
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	1170.563984	0	905.1299823	0		
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	45360.58886	32674.8	82.90387103	1078268.4	1.388244	0.042
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	94.65030462	0	38.25708651	0		
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	675.3128397	0	60.02999985	0		
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	2528.019081	0	580.7097372	0		
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	178.7944508	0	23.80999994	0		
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	300.5273055	0	58.56678493	0		
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	842.4298276	0	523.6599953	0		
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	5165.516182	0	1581.928462	0		
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	120.6499595	0	15.19262839	0		
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	32901.31604	11811.4	4600.505721	437021.8	2.785556	0.075
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	34155.82168	0	6056.998267	0		
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	3236.667964	0	441.8838887	0		
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	4272.868776	0	673.5320299	0		
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	7784061.87	2752530.213	3938.890346	341252035	2.827966	0.023
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	46790841.78	5858661.231	4122.564465	2373634029	7.98661	0.020
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	10427185.33	2799082.686	5961.14686	482040810.7	3.725215	0.022
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	2451752.02	879495.143	2115.710861	113851512.5	2.787681	0.022
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	1426862.458	587027.4756	1198.74714	77230919.55	2.430657	0.018
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	6360027.134	3989134.305	11029.09285	320452363.8	1.594338	0.020
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	6906031.542	3297686.058	11110.98485	331376825.5	2.094205	0.021
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	4067318.087	795509.1857	982.3499289	197215593.9	5.112849	0.021
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	56182699.88	14857105.39	14400.53382	3008621967	3.781537	0.019
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	36566630.45	3986182.033	8090.906401	1463647109	9.173347	0.025
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	6696528.108	5275738.133	14408.3179	345098240.9	1.269306	0.019
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	768627.7089	187126.3685	661.6461486	49255962.93	4.107533	0.016
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	51325229.35	27345172.91	43458.66795	2679376099	1.876939	0.019
Statewide Totals	2032	Construction and	Aggregate	Aggregate	Diesel	2112249.885	995699.7885	2610.777862	78286521.55	2.121372	0.027
Statewide Totals	2032	Industrial - Aerial l	Aggregate	Aggregate	Diesel	3251046.213	3129190.305	9792.597139	196778354.9	1.038942	0.017
Statewide Totals	2032	Industrial - Forklift	Aggregate	Aggregate	Diesel	13688216.36	14644586.35	18370.28859	1310750190	0.934695	0.010
Statewide Totals	2032	Industrial - Misc -	Aggregate	Aggregate	Diesel	3017.575588	0	1407.121072	0		
Statewide Totals	2032	Industrial - Misc -	Aggregate	Aggregate	Diesel	2369.804652	0	290.7897072	0		
Statewide Totals	2032	Industrial - Misc -	Aggregate	Aggregate	Diesel	620.2055733	0	116.0548633	0		
Statewide Totals	2032	Industrial - Other	Aggregate	Aggregate	Diesel	6611015.758	4131074.98	4676.642795	364333988.6	1.600314	0.018
Statewide Totals	2032	Industrial - Other	Aggregate	Aggregate	Diesel	3876054.832	1129143.892	1406.73166	189127756.6	3.432738	0.020
Statewide Totals	2032	Light Commercial	Aggregate	Aggregate	Diesel	1026321.963	926972.25	1325.589322	34297973.25	1.107177	0.030
Statewide Totals	2032	Light Commercial	Aggregate	Aggregate	Diesel	4776103.739	1865836.2	16274.68997	61572594.6	2.559766	0.078
Statewide Totals	2032	Light Commercial	Aggregate	Aggregate	Diesel	24117.79503	18830.35	485.4608786	715553.3	1.280794	0.034
Statewide Totals	2032	Light Commercial	Aggregate	Aggregate	Diesel	2640569.062	973998.85	8474.439687	36037957.45	2.71106	0.073
Statewide Totals	2032	Light Commercial	Aggregate	Aggregate	Diesel	5314081.642	3654996.85	9654.501371	168129855.1	1.453922	0.032
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	3533086.004	615648.547	1617.345891	136125275.2	5.738803	0.026
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	8354709.336	2426013.321	4865.646201	560679095.1	3.443802	0.015
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	20633359.06	4382093.552	8962.451453	929545514.4	4.708562	0.022
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	37175594.31	11867982.53	17419.6594	1870501571	3.132427	0.020
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	13965824.38	3505992.028	5631.467998	659522016.9	3.983416	0.021
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	812.9750766	0	132.7578952	0		
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	1184.695378	0	915.98995	0		
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	45858.45467	33058.05	83.93042853	1090915.65	1.38721	0.042
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	95.70537301	0	38.68353887	0		
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	683.3000519	0	60.74000087	0		
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	2560.082761	0	588.0755953	0		
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	181.347588	0	24.15000035	0		
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	303.9317451	0	59.23024236	0		
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	852.5327349	0	529.9400264	0		
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	5223.731452	0	1599.805744	0		
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	122.1826813	0	15.38563393	0		
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	33282.67339	11957.4	4655.917571	442423.8	2.783437	0.075
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	34500.73575	0	6118.163351	0		
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	3277.709449	0	447.4870512	0		
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	4304.391854	0	679.0512508	0		
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	7867770.274	2782130.429	3965.531785	344921798.2	2.827966	0.023
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	47294022.1	5921664.223	4150.448218	2399159663	7.98661	0.020
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	10539317.41	2829183.519	6001.466217	487224591.1	3.725215	0.022
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	2478117.721	888953.076	2130.020877	115075851.2	2.787681	0.022
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	1442206.681	593340.2638	1206.855096	78061447	2.430657	0.018
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	6428421.725	4032032.74	11103.69023	323898451.1	1.594338	0.020
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	6980297.766	3333148.783	11186.13613	334940392.4	2.094205	0.021
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	4111057.296	804063.9487	988.9942407	199336415	5.112849	0.021
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	56786878.55	15016876.04	14497.93459	3040976148	3.781537	0.019
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	36959861.44	4029048.72	8145.630795	1479386907	9.173347	0.025
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	6768541.37	5332472.474	14505.77131	348809365.5	1.269306	0.019
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	776893.3934	189138.6919	666.121319	49785652.71	4.107533	0.016
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	51877171.66	27639237.99	43752.60897	2708189629	1.876939	0.019
Statewide Totals	2033	Construction and	Aggregate	Aggregate	Diesel	2134964.641	1006407.365	2628.436358	79128400.76	2.121372	0.027
Statewide Totals	2033	Industrial - Aerial l	Aggregate	Aggregate	Diesel	3286007.381	3162841.056	9858.831244	198894474	1.038942	0.017
Statewide Totals	2033	Industrial - Forklift	Aggregate	Aggregate	Diesel	13835416.98	14802071.61	18494.53955	1324845762	0.934695	0.010
Statewide Totals	2033	Industrial - Misc -	Aggregate	Aggregate	Diesel	3038.689939	0	1416.966992	0		
Statewide Totals	2033	Industrial - Misc -	Aggregate	Aggregate	Diesel	2390.536917	0	293.2440121	0		
Statewide Totals	2033	Industrial - Misc -	Aggregate	Aggregate	Diesel	628.7189227	0	117.696521	0		
Statewide Totals	2033	Industrial - Other	Aggregate	Aggregate	Diesel	6682109.435	4175499.819	4708.274164	368251970.9	1.600314	0.018
Statewide Totals	2033	Industrial - Other	Aggregate	Aggregate	Diesel	3917737.231	1141286.502	1416.246359	191161602.6	3.432738	0.020
Statewide Totals	2033	Light Commercial	Aggregate	Aggregate	Diesel	1032539.794	932447.25	1333.679206	34500548.25	1.107344	0.030
Statewide Totals	2033	Light Commercial	Aggregate	Aggregate	Diesel	4804474.646	1877016.15	16372.19319	61941532.95	2.559634	0.078
Statewide Totals	2033	Light Commercial	Aggregate	Aggregate	Diesel	24311.98071	18910.65	488.3606073	718604.7	1.285624	0.034
Statewide Totals	2033	Light Commercial	Aggregate	Aggregate	Diesel	2656279.044	979809.65	8525.405799	36252957.05	2.711015	0.073
Statewide Totals	2033	Light Commercial	Aggregate	Aggregate	Diesel	5345437.357	3676915.1	9711.768516	169138094.6	1.453783	0.032
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	3570675.942	622198.6821	1628.157857	137573567.3	5.738803	0.026
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	8443598.484	2451824.662	4898.173073	566644387.8	3.443802	0.015
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	20852885.75	4428716.426	9022.36549	939435326.9	4.708562	0.022
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	37571120.56	11994250.82	17536.10992	1890402597	3.132427	0.020
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	14114412.46	3543293.702	5669.114392	666538939.6	3.983416	0.021
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	820.8607868	0	134.0518467	0		
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	1199.036696	0	927.0399718	0		
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	46414.84893	33466.85	84.9538501	1104406.05	1.38689	0.042
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	96.83591191	0	39.14049583	0		
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	690.4997679	0	61.37999789	0		
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	2593.460439	0	595.7408019	0		
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	183.1497916	0	24.38999916	0		
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	307.5446227	0	59.93431972	0		
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	862.8929675	0	536.3800094	0		
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	5282.120095	0	1617.7853	0		

Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	123.7801719	0	15.58679501	0		
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	33725.64867	12088.8	4711.259127	447285.6	2.789826	0.075
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	34845.58004	0	6179.31609	0		
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	3318.270364	0	453.0246069	0		
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	4342.065594	0	685.4335705	0		
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	7951478.679	2811730.645	3992.041386	348591561.3	2.827966	0.023
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	47797202.41	5984667.215	4178.193987	2424685298	7.98661	0.020
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	10651449.49	2859284.352	6041.586052	492408371.4	3.725215	0.022
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	2504483.423	898411.009	2144.260078	116300189.9	2.787681	0.022
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	1457550.903	599653.0519	1214.922928	78891974.45	2.430657	0.018
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	6496816.315	4074931.174	11177.91846	327344538.3	1.594338	0.020
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	7054563.991	3368611.507	11260.91551	338503959.3	2.094205	0.021
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	4154796.505	812618.7118	995.6056726	201457236.1	5.112849	0.021
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	57391057.23	15176646.69	14594.85336	3073330329	3.781537	0.019
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	37353092.42	4071915.406	8200.084381	1495126705	9.173347	0.025
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	6840554.632	5389206.816	14602.74247	352520490	1.269306	0.019
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	785159.0779	191151.0153	670.5743436	50315342.5	4.107533	0.016
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	52429113.97	27933303.08	44045.0954	2737003159	1.876939	0.019
Statewide Totals	2034	Construction and	Aggregate	Aggregate	Diesel	2157679.398	1017114.942	2646.007469	79970279.97	2.121372	0.027
Statewide Totals	2034	Industrial - Aerial l	Aggregate	Aggregate	Diesel	3320968.548	3196491.807	9924.737584	201010593.1	1.038942	0.017
Statewide Totals	2034	Industrial - Forklift	Aggregate	Aggregate	Diesel	13982617.6	14959556.86	18618.17565	1338941334	0.934695	0.010
Statewide Totals	2034	Industrial - Misc -	Aggregate	Aggregate	Diesel	3055.264661	0	1424.698012	0		
Statewide Totals	2034	Industrial - Misc -	Aggregate	Aggregate	Diesel	2410.365988	0	295.6728208	0		
Statewide Totals	2034	Industrial - Misc -	Aggregate	Aggregate	Diesel	651.2499196	0	122.0488805	0		
Statewide Totals	2034	Industrial - Other	Aggregate	Aggregate	Diesel	6753203.112	4219924.658	4739.749002	372169953.3	1.600314	0.018
Statewide Totals	2034	Industrial - Other	Aggregate	Aggregate	Diesel	3959419.629	1153429.113	1425.713974	193195448.6	3.432738	0.020
Statewide Totals	2034	Light Commercial	Aggregate	Aggregate	Diesel	1038649.146	938071.9	1341.919016	34708660.3	1.107217	0.030
Statewide Totals	2034	Light Commercial	Aggregate	Aggregate	Diesel	4833801.365	1888535.55	16472.96591	62321673.15	2.55955	0.078
Statewide Totals	2034	Light Commercial	Aggregate	Aggregate	Diesel	24467.99237	19031.1	491.3003579	723181.8	1.285685	0.034
Statewide Totals	2034	Light Commercial	Aggregate	Aggregate	Diesel	2672495.295	985843.1	8577.68135	36476194.7	2.710873	0.073
Statewide Totals	2034	Light Commercial	Aggregate	Aggregate	Diesel	5378132.249	3699424.65	9771.355997	170173533.9	1.453775	0.032
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	3608265.88	628748.8171	1638.916844	139021859.4	5.738803	0.026
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	8532487.631	2477636.003	4930.54056	572609680.5	3.443802	0.015
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	21072412.45	4475339.3	9081.985944	949325139.3	4.708562	0.022
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	37966646.81	12120519.11	17651.98982	1910303624	3.132427	0.020
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	14263000.54	3580595.376	5706.576316	673555862.3	3.983416	0.021
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	829.3511385	0	135.4575918	0		
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	1212.731475	0	937.7199558	0		
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	46964.20282	33857.4	86.05156978	1117294.2	1.387118	0.042
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	98.00590301	0	39.6133995	0		
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	698.4869719	0	62.08999818	0		
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	2626.443608	0	603.3144556	0		
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	185.2523731	0	24.66999928	0		
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	310.9452589	0	60.59703609	0		
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	872.9153134	0	542.6099718	0		
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	5339.258929	0	1635.509687	0		
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	125.7585734	0	15.83592137	0		
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	34070.41962	12260.35	4766.65087	453632.95	2.778911	0.075
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	35193.78742	0	6241.065206	0		
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	3357.606904	0	458.3949963	0		
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	4383.810785	0	692.239993	0		
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	8035187.084	2841330.861	4018.421089	352261324.5	2.827966	0.023
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	48300382.73	6047670.207	4205.8038	2450210932	7.98661	0.020
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	10763581.57	2889385.185	6081.509296	497592151.8	3.725215	0.022
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	2530849.124	907868.9419	2158.429506	117524528.7	2.787681	0.022
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	1472895.126	605965.8401	1222.951228	79722501.91	2.430657	0.018
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	6565210.906	4117829.609	11251.78296	330790625.5	1.594338	0.020
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	7128830.215	3404074.231	11335.32846	342067526.3	2.094205	0.021
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	4198535.714	821173.4749	1002.184708	203578057.2	5.112849	0.021
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	57995235.9	15336417.33	14691.29722	3105684510	3.781537	0.019
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	37746323.41	4114782.093	8254.271141	1510866504	9.173347	0.025
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	6912567.894	5445941.157	14699.23847	356231614.6	1.269306	0.019
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	793424.7623	193163.3387	675.0055481	50845032.29	4.107533	0.016
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	52981056.28	28227368.16	44336.14862	2765816688	1.876939	0.019
Statewide Totals	2035	Construction and	Aggregate	Aggregate	Diesel	2180394.154	1027822.519	2663.49248	80812159.18	2.121372	0.027
Statewide Totals	2035	Industrial - Aerial l	Aggregate	Aggregate	Diesel	3355929.716	3230142.558	9990.320979	203126712.3	1.038942	0.017
Statewide Totals	2035	Industrial - Forklift	Aggregate	Aggregate	Diesel	14129818.23	15117042.12	18741.20592	1353036907	0.934695	0.010
Statewide Totals	2035	Industrial - Misc -	Aggregate	Aggregate	Diesel	3075.435594	0	1434.105008	0		
Statewide Totals	2035	Industrial - Misc -	Aggregate	Aggregate	Diesel	2429.762084	0	298.0402175	0		
Statewide Totals	2035	Industrial - Misc -	Aggregate	Aggregate	Diesel	666.1799464	0	124.8505554	0		
Statewide Totals	2035	Industrial - Other	Aggregate	Aggregate	Diesel	6824296.79	4264349.497	4771.069612	376087935.6	1.600314	0.018
Statewide Totals	2035	Industrial - Other	Aggregate	Aggregate	Diesel	4001102.027	1165571.724	1435.135196	195229294.5	3.432738	0.020
Statewide Totals	2035	Light Commercial	Aggregate	Aggregate	Diesel	1045250.989	943955.7	1350.51887	34926360.9	1.107309	0.030
Statewide Totals	2035	Light Commercial	Aggregate	Aggregate	Diesel	4863933.721	1900409	16575.86769	62713497	2.559414	0.078
Statewide Totals	2035	Light Commercial	Aggregate	Aggregate	Diesel	24650.20386	19115.05	494.3001462	726371.9	1.28957	0.034
Statewide Totals	2035	Light Commercial	Aggregate	Aggregate	Diesel	2689130.418	991934.95	8631.277297	36701593.15	2.710995	0.073
Statewide Totals	2035	Light Commercial	Aggregate	Aggregate	Diesel	5411645.003	3722656.9	9832.622868	171242217.4	1.453705	0.032
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	3645855.817	635298.9522	1649.623622	140470151.5	5.738803	0.026
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	8621376.778	2503447.345	4962.750983	578574973.3	3.443802	0.015
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	21291939.14	4521962.174	9141.317088	959214951.7	4.708562	0.022
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	38362173.06	12246787.4	17767.30741	1930204650	3.132427	0.020
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	14411588.62	3617897.049	5743.856456	680572785	3.983416	0.021
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	837.0238327	0	136.722669	0		
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	1226.856244	0	948.6100276	0		
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	47531.62899	34266.2	87.07212368	1130784.6	1.387129	0.042
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	98.99263655	0	40.0122312	0		
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	707.7116462	0	62.90999973	0		
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	2658.948063	0	610.7811417	0		
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	187.6553263	0	24.98999989	0		
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	314.1873857	0	61.22886284	0		
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	883.0825402	0	548.9299807	0		
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	5397.123078	0	1653.419969	0		
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	128.6990374	0	16.20619392	0		
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	34495.11673	12395.4	4821.89274	458629.8	2.782897	0.075
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	35546.46395	0	6303.606774	0		
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	3398.752875	0	464.0124247	0		
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	4427.792808	0	699.2637437	0		
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	8118895.489	2870931.077	4044.672783	355931087.6	2.827966	0.023
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	48803563.05	6110673.199	4233.279635	2475736567	7.98661	0.020
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	10875713.65	2919486.018	6121.238812	502775932.2	3.725215	0.022
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	2557214.825	917326.8749	2172.530176	118748867.4	2.787681	0.022
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	1488239.349	612278.6283	1230.940571	80553029.36	2.430657	0.018
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	6633605.497	4160728.043	11325.28904	334236712.7	1.594338	0.020
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	7203096.439	3439536.955	11409.38033	345631093.2	2.094205	0.021
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	4242274.923	829728.2379	1008.731818	205698878.3	5.112849	0.021
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	58599414.58	15496187.98	14787.27309	3138038691	3.781537	0.019
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	38139554.39	4157648.779	8308.194958	1526606302	9.173347	0.025
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	6984581.155	5502675.498	14795.26621	359942739.2	1.269306	0.019
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	801690.4468	195175.6621	679.4152501	51374722.08	4.107533	0.016
Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	53532998.59	28521433.24	44625.7895	2794630218	1.876939	0.019

Statewide Totals	2036	Construction and	Aggregate	Aggregate	Diesel	2203108.91	1038530.096	2680.892646	81654038.38	2.121372	0.027
Statewide Totals	2036	Industrial - Aerial	Aggregate	Aggregate	Diesel	3390890.884	3263793.309	10055.58613	205242831.4	1.038942	0.017
Statewide Totals	2036	Industrial - Forklift	Aggregate	Aggregate	Diesel	14277018.85	15274527.37	18863.63919	1367132479	0.934695	0.010
Statewide Totals	2036	Industrial - Misc -	Aggregate	Aggregate	Diesel	3117.964053	0	1453.936262	0		
Statewide Totals	2036	Industrial - Misc -	Aggregate	Aggregate	Diesel	2467.570233	0	302.6492878	0		
Statewide Totals	2036	Industrial - Misc -	Aggregate	Aggregate	Diesel	678.0458997	0	126.8943886	0		
Statewide Totals	2036	Industrial - Other	Aggregate	Aggregate	Diesel	6895390.467	4308774.336	4802.238237	380005917.9	1.600314	0.018
Statewide Totals	2036	Industrial - Other	Aggregate	Aggregate	Diesel	4042784.426	1177714.335	1444.510702	197263140.5	3.432738	0.020
Statewide Totals	2036	Light Commercial	Aggregate	Aggregate	Diesel	1051731.189	949949	1359.108814	35148113	1.107145	0.030
Statewide Totals	2036	Light Commercial	Aggregate	Aggregate	Diesel	4894670.067	1912413.85	16680.1606	63109657.05	2.55942	0.078
Statewide Totals	2036	Light Commercial	Aggregate	Aggregate	Diesel	24835.33303	19220.9	497.400014	730394.2	1.2921	0.034
Statewide Totals	2036	Light Commercial	Aggregate	Aggregate	Diesel	2706036.359	998202	8685.072807	36933474	2.710911	0.073
Statewide Totals	2036	Light Commercial	Aggregate	Aggregate	Diesel	5445816.372	3746181.15	9895.050567	172324332.9	1.453698	0.032
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	3683445.755	641849.0872	1660.278945	141918443.6	5.738803	0.026
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	8710265.926	2529258.686	4994.806607	584540266	3.443802	0.015
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	21511465.83	4568585.047	9200.363094	969104764.1	4.708562	0.022
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	38757699.32	12373055.69	17882.0708	1950105676	3.132427	0.020
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	14560176.7	3655198.723	5780.957431	687589707.7	3.983416	0.021
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	845.160921	0	138.0670206	0		
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	1241.269962	0	959.6500394	0		
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	48043.83113	34675	88.00353641	1144275	1.385547	0.042
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	100.2188769	0	40.50787065	0		
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	716.5988694	0	63.70000265	0		
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	2691.592474	0	618.278697	0		
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	189.6828235	0	25.26000105	0		
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	317.9534853	0	61.96280116	0		
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	892.8798102	0	555.0200285	0		
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	5457.429845	0	1671.976033	0		
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	131.566367	0	16.56725767	0		
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	34894.60869	12559.65	4877.334436	464707.05	2.778311	0.075
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	35902.42809	0	6366.731424	0		
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	3440.028596	0	469.6475607	0		
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	4474.062904	0	706.5831412	0		
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	8202603.894	2900531.293	4070.798315	359600850.8	2.827966	0.023
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	49306743.37	6173676.19	4260.623425	2501262201	7.98661	0.020
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	10987845.73	2949586.851	6160.777392	507959712.6	3.725215	0.022
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	2583580.527	926784.8079	2186.563081	119973206.2	2.787681	0.022
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	1503583.572	618591.4164	1238.891517	81383556.81	2.430657	0.018
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	6702000.088	4203626.478	11398.44186	337682800	1.594338	0.020
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	7277362.663	3474999.68	11483.07631	349194660.1	2.094205	0.021
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	4286014.132	838283.001	1015.247464	207819699.4	5.112849	0.021
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	59203593.25	15655958.62	14882.78771	3170392871	3.781537	0.019
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	38532785.37	4200515.466	8361.859624	1542346101	9.173347	0.025
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	7056594.417	5559409.84	14890.83246	363653863.7	1.269306	0.019
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	809956.1313	197187.9855	683.8037596	51904411.87	4.107533	0.016
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	54084940.9	28815498.33	44914.03841	2823443748	1.876939	0.019
Statewide Totals	2037	Construction and	Aggregate	Aggregate	Diesel	2225823.667	1049237.673	2698.209188	82495917.59	2.121372	0.027
Statewide Totals	2037	Industrial - Aerial	Aggregate	Aggregate	Diesel	3425852.052	3297444.06	10120.53762	207358950.5	1.038942	0.017
Statewide Totals	2037	Industrial - Forklift	Aggregate	Aggregate	Diesel	14424219.47	15432012.62	18985.48405	1381228051	0.934695	0.010
Statewide Totals	2037	Industrial - Misc -	Aggregate	Aggregate	Diesel	3102.636548	0	1446.791447	0		
Statewide Totals	2037	Industrial - Misc -	Aggregate	Aggregate	Diesel	2464.11276	0	302.2190315	0		
Statewide Totals	2037	Industrial - Misc -	Aggregate	Aggregate	Diesel	673.6093836	0	126.0039701	0		
Statewide Totals	2037	Industrial - Other	Aggregate	Aggregate	Diesel	6966484.144	4353199.176	4833.25707	383923900.3	1.600314	0.018
Statewide Totals	2037	Industrial - Other	Aggregate	Aggregate	Diesel	4084466.824	1189856.946	1453.841151	199296986.5	3.432738	0.020
Statewide Totals	2037	Light Commercial	Aggregate	Aggregate	Diesel	1058551.46	956029.9	1367.888614	35373106.3	1.107237	0.030
Statewide Totals	2037	Light Commercial	Aggregate	Aggregate	Diesel	4925860.816	1924641.35	16787.26264	63513164.55	2.559366	0.078
Statewide Totals	2037	Light Commercial	Aggregate	Aggregate	Diesel	24983.42586	19341.35	500.5096345	734971.3	1.291711	0.034
Statewide Totals	2037	Light Commercial	Aggregate	Aggregate	Diesel	2723197.214	1004618.7	8740.328602	37170891.9	2.710677	0.073
Statewide Totals	2037	Light Commercial	Aggregate	Aggregate	Diesel	5480411.423	3770165.3	9958.307517	173427603.8	1.453626	0.032
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	3721035.692	648399.2222	1670.883548	143366735.8	5.738803	0.026
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	8799155.073	2555070.028	5026.709643	590505558.7	3.443802	0.015
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	21730992.52	4615207.921	9259.128033	978994576.5	4.708562	0.022
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	39153225.57	12499323.98	17996.28791	1970006702	3.132427	0.020
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	14708764.78	3692500.397	5817.881801	694606630.5	3.983416	0.021
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	853.5684251	0	139.4537413	0		
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	1255.235126	0	970.4999404	0		
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	48600.30572	35050.95	88.99375912	1156681.35	1.386562	0.042
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	101.3263817	0	40.95551709	0		
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	724.1360365	0	64.36999887	0		
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	2725.390011	0	626.0375249	0		
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	191.9355779	0	25.55999955	0		
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	322.1180362	0	62.77438837	0		
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	903.1756576	0	561.419997	0		
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	5518.151203	0	1690.601035	0		
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	134.4540146	0	16.93087945	0		
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	35301.45467	12698.35	4932.784984	469838.95	2.780003	0.075
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	36258.63981	0	6429.900059	0		
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	3479.323544	0	475.0122733	0		
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	4522.144431	0	714.079408	0		
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	8286312.298	2930131.509	4096.799486	363270614	2.827966	0.023
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	49809923.68	6236679.182	4287.837055	2526787836	7.98661	0.020
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	11099977.81	2979687.684	6200.127764	513143493	3.725215	0.022
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	2609946.228	936242.7409	2200.529187	121197544.9	2.787681	0.022
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	1518927.795	624904.2046	1246.804617	82214084.26	2.430657	0.018
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	6770394.678	4246524.913	11471.24645	341128887.2	1.594338	0.020
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	7351628.887	3510462.404	11556.42149	352758227.1	2.094205	0.021
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	4329753.341	846837.764	1021.732095	209940520.5	5.112849	0.021
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	59807771.93	15815729.27	14977.84767	3202747052	3.781537	0.019
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	38926016.36	4243382.152	8415.268839	1558085899	9.173347	0.025
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	7128607.679	5616144.181	14985.9438	367364988.3	1.269306	0.019
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	818221.8158	199200.3089	688.1713792	52434101.66	4.107533	0.016
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	54636883.2	29109563.41	45200.91521	2852257278	1.876939	0.019
Statewide Totals	2038	Construction and	Aggregate	Aggregate	Diesel	2248538.423	1059945.25	2715.443301	83337796.8	2.121372	0.027
Statewide Totals	2038	Industrial - Aerial	Aggregate	Aggregate	Diesel	3460813.219	3331094.811	10185.17994	209475069.6	1.038942	0.017
Statewide Totals	2038	Industrial - Forklift	Aggregate	Aggregate	Diesel	14571420.09	15589497.88	19106.74892	1395323624	0.934695	0.010
Statewide Totals	2038	Industrial - Misc -	Aggregate	Aggregate	Diesel	3146.408206	0	1467.200703	0		
Statewide Totals	2038	Industrial - Misc -	Aggregate	Aggregate	Diesel	2501.66634	0	306.7671987	0		
Statewide Totals	2038	Industrial - Misc -	Aggregate	Aggregate	Diesel	683.1600041	0	127.8019249	0		
Statewide Totals	2038	Industrial - Other	Aggregate	Aggregate	Diesel	7037577.822	4397624.015	4864.128249	387841882.6	1.600314	0.018
Statewide Totals	2038	Industrial - Other	Aggregate	Aggregate	Diesel	4126149.222	1201999.557	1463.127185	201330832.4	3.432738	0.020
Statewide Totals	2038	Light Commercial	Aggregate	Aggregate	Diesel	1065053.496	962048.75	1376.44859	35595803.75	1.107068	0.030
Statewide Totals	2038	Light Commercial	Aggregate	Aggregate	Diesel	4956682.221	1936730.15	16892.23518	63912094.95	2.559305	0.078
Statewide Totals	2038	Light Commercial	Aggregate	Aggregate	Diesel	25112.78168	19443.55	503.8593723	738854.9	1.291574	0.034
Statewide Totals	2038	Light Commercial	Aggregate	Aggregate	Diesel	2740393.811	1010863.85	8795.724075	37401962.45	2.710943	0.073
Statewide Totals	2038	Light Commercial	Aggregate	Aggregate	Diesel	5514658.324	3793901.25	10020.59462	174519457.5	1.453559	0.032
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	3758625.63	654949.3573	1681.438147	144815027.9	5.738803	0.026
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	8888044.22	2580881.369	5058.462248	596470851.4	3.443802	0.015
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	21950519.21	4661830.795	9317.615882	988884389	4.708562	0.022
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	39548751.82	12625592.26	18109.96645	1989907729	3.132427	0.020
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	14857352.86	3729802.071	5854.632065	701623553.2	3.983416	0.021

Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	863.4938034	0	141.0860388	0		
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	1269.287449	0	981.3999748	0		
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	49145.91562	35496.25	90.03182068	1171376.25	1.384538	0.042
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	102.5878664	0	41.4654019	0		
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	732.3482668	0	65.10000075	0		
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	2757.589145	0	633.4351724	0		
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	194.1132558	0	25.85000031	0		
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	325.7371402	0	63.47967929	0		
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	913.439413	0	567.8000148	0		
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	5579.604796	0	1709.457891	0		
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	136.9437246	0	17.24439167	0		
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	35693.7004	12844.35	4988.235315	475240.95	2.778942	0.075
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	36612.35726	0	6492.626281	0		
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	3519.991407	0	480.5644287	0		
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	4572.781586	0	721.9444696	0		
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	8370020.703	2959731.725	4122.678056	366940377.1	2.827966	0.023
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	50313104	6299682.174	4314.922367	2552313470	7.98661	0.020
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	11212109.89	3009788.517	6239.29259	518327273.4	3.725215	0.022
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	2636311.929	945700.6739	2214.429439	122421883.6	2.787681	0.022
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	1534272.018	631216.9927	1254.680404	83044611.72	2.430657	0.018
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	6838789.269	4289423.347	11543.70776	344574974.4	1.594338	0.020
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	7425895.112	3545925.128	11629.42083	356321794	2.094205	0.021
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	4373492.55	855392.5271	1028.186149	212061341.7	5.112849	0.021
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	60411950.6	15975499.91	15072.45939	3235101233	3.781537	0.019
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	39319247.34	4286248.838	8468.426218	1573825697	9.173347	0.025
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	7200620.941	5672878.522	15080.60667	371076112.9	1.269306	0.019
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	826487.5003	201212.6323	692.5184045	52963791.44	4.107533	0.016
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	55188825.51	29403628.49	45486.43932	2881070808	1.876939	0.019
Statewide Totals	2039	Construction and	Aggregate	Aggregate	Diesel	2271253.179	1070652.827	2732.596152	84179676.01	2.121372	0.027
Statewide Totals	2039	Industrial - Aerial I	Aggregate	Aggregate	Diesel	3495774.387	3364745.562	10249.51745	211591188.8	1.038942	0.017
Statewide Totals	2039	Industrial - Forklift	Aggregate	Aggregate	Diesel	14718620.72	15746983.13	19227.442	1409419196	0.934695	0.010
Statewide Totals	2039	Industrial - Misc -	Aggregate	Aggregate	Diesel	3161.621889	0	1474.294309	0		
Statewide Totals	2039	Industrial - Misc -	Aggregate	Aggregate	Diesel	2519.154209	0	308.7657938	0		
Statewide Totals	2039	Industrial - Misc -	Aggregate	Aggregate	Diesel	687.3432231	0	128.5939515	0		
Statewide Totals	2039	Industrial - Other	Aggregate	Aggregate	Diesel	7108671.499	4442048.854	4894.853864	391759865	1.600314	0.018
Statewide Totals	2039	Industrial - Other	Aggregate	Aggregate	Diesel	4167831.62	1214142.167	1472.369433	203364678.4	3.432738	0.020
Statewide Totals	2039	Light Commercial	Aggregate	Aggregate	Diesel	1071569.527	967943.5	1384.538354	35813909.5	1.107058	0.030
Statewide Totals	2039	Light Commercial	Aggregate	Aggregate	Diesel	4986648.695	1948472.2	16994.33776	64299582.6	2.559261	0.078
Statewide Totals	2039	Light Commercial	Aggregate	Aggregate	Diesel	25265.18164	19582.25	507.2892344	744125.5	1.290208	0.034
Statewide Totals	2039	Light Commercial	Aggregate	Aggregate	Diesel	2756943.034	1017010.45	8848.939952	37629386.65	2.710831	0.073
Statewide Totals	2039	Light Commercial	Aggregate	Aggregate	Diesel	5548161.125	3816797.7	10081.12205	175572694.2	1.453617	0.032
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	3796215.567	661499.4923	1691.943443	146263320	5.738803	0.026
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	8976933.368	2606692.711	5090.06653	602436144.1	3.443802	0.015
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	22170045.9	4708453.669	9375.830524	998774201.4	4.708562	0.022
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	39944278.08	12751860.55	18223.11398	2009808755	3.132427	0.020
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	15005940.94	3767103.744	5891.210661	708640475.9	3.983416	0.021
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	874.3097947	0	142.8647829	0		
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	1283.153398	0	992.1299678	0		
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	49669.29808	35875.85	91.09140436	1183903.05	1.384477	0.042
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	103.6975526	0	41.91393047	0		
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	739.885464	0	65.76999889	0		
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	2790.033098	0	640.8888921	0		
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	196.140739	0	26.11999956	0		
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	329.4133637	0	64.19610223	0		
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	923.5422218	0	574.079991	0		
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	5640.569098	0	1728.124535	0		
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	139.1553042	0	17.52288061	0		
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	36118.39876	13004.95	5043.477613	481183.15	2.777281	0.075
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	36962.73848	0	6554.760846	0		
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	3561.331895	0	486.2084099	0		
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	4623.865947	0	729.8216085	0		
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	8453729.108	2989331.941	4148.435742	370610140.3	2.827966	0.023
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	50816284.32	6362685.166	4341.881158	2577839105	7.98661	0.020
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	11324241.97	3039889.35	6278.27447	523511053.8	3.725215	0.022
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	2662677.631	955158.6068	2228.264762	123646222.4	2.787681	0.022
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	1549616.241	637529.7809	1262.519401	83875139.17	2.430657	0.018
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	6907183.86	4332321.782	11615.83059	348021061.7	1.594338	0.020
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	7500161.336	3581387.852	11702.07918	359885360.9	2.094205	0.021
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	4417231.759	863947.2902	1034.610055	214182162.8	5.112849	0.021
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	61016129.28	16135270.56	15166.62917	3267455414	3.781537	0.019
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	39712478.32	4329115.525	8521.335289	1589565496	9.173347	0.025
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	7272634.203	5729612.864	15174.82735	374787237.4	1.269306	0.019
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	834753.1848	203224.9557	696.8451241	53493481.23	4.107533	0.016
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	55740767.82	29697693.58	45770.6297	2909884338	1.876939	0.019
Statewide Totals	2040	Construction and	Aggregate	Aggregate	Diesel	2293967.936	1081360.404	2749.668878	85021555.21	2.121372	0.027
Statewide Totals	2040	Industrial - Aerial I	Aggregate	Aggregate	Diesel	3530735.555	3398396.314	10313.55443	213707307.9	1.038942	0.017
Statewide Totals	2040	Industrial - Forklift	Aggregate	Aggregate	Diesel	14865821.34	15904468.39	19347.5713	1423514769	0.934695	0.010
Statewide Totals	2040	Industrial - Misc -	Aggregate	Aggregate	Diesel	3173.587959	0	1479.873734	0		
Statewide Totals	2040	Industrial - Misc -	Aggregate	Aggregate	Diesel	2534.942951	0	310.6320338	0		
Statewide Totals	2040	Industrial - Misc -	Aggregate	Aggregate	Diesel	692.8683816	0	129.6162453	0		
Statewide Totals	2040	Industrial - Other	Aggregate	Aggregate	Diesel	7179765.177	4486473.693	4925.435954	395677847.3	1.600314	0.018
Statewide Totals	2040	Industrial - Other	Aggregate	Aggregate	Diesel	4209514.019	1226284.778	1481.56851	205398524.3	3.432738	0.020
Statewide Totals	2040	Light Commercial	Aggregate	Aggregate	Diesel	1077766.247	973392.95	1392.638203	36015539.15	1.107226	0.030
Statewide Totals	2040	Light Commercial	Aggregate	Aggregate	Diesel	5015106.97	1959582.8	17091.10025	64666232.4	2.559273	0.078
Statewide Totals	2040	Light Commercial	Aggregate	Aggregate	Diesel	25376.21313	19658.9	509.9087148	747038.2	1.290826	0.034
Statewide Totals	2040	Light Commercial	Aggregate	Aggregate	Diesel	2772722.957	1022817.6	8899.20604	37844251.2	2.710867	0.073
Statewide Totals	2040	Light Commercial	Aggregate	Aggregate	Diesel	5579765.641	3838686.75	10138.73941	176579590.5	1.453561	0.032
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	3833805.505	668049.6274	1702.400122	147711612.1	5.738803	0.026
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	9065822.515	2632504.052	5121.52455	608401436.8	3.443802	0.015
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	22389572.59	4755076.543	9433.775752	1008664014	4.708562	0.022
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	40339804.33	12878128.84	18335.73787	2029709781	3.132427	0.020
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	15154529.02	3804405.418	5927.619973	715657398.6	3.983416	0.021
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	874.8487399	0	142.9365411	0		
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	1283.098955	0	992.0599611	0		
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	49667.22131	35875.85	90.65707167	1183903.05	1.384419	0.042
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	103.5787814	0	41.86592353	0		
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	739.9979582	0	65.77999819	0		
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	2790.00946	0	640.8804933	0		
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	196.5161974	0	26.16999928	0		
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	328.4894114	0	64.01604228	0		
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	923.5100397	0	574.0599807	0		
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	5618.798538	0	1720.933407	0		
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	138.3095521	0	17.41638101	0		
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	36118.49248	13004.95	5043.510115	481183.15	2.777288	0.075
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	36831.14941	0	6531.425607	0		
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	3560.294645	0	486.0668018	0		
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	4429.595179	0	693.656631	0		
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	8537437.513	3018932.157	4174.074224	374279903.4	2.827966	0.023
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	51319464.64	6425688.157	4368.715185	2603364739	7.98661	0.020
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	11436374.05	3069990.183	6317.075944	528694834.2	3.725215	0.022

Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	2689043.332	964616.5398	2242.036055	124870561.1	2.787681	0.022
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	1564960.464	643842.569	1270.322121	84705666.62	2.430657	0.018
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	6975578.451	4375220.217	11687.61964	351467148.9	1.594338	0.020
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	7574427.56	3616850.577	11774.40127	363448927.9	2.094205	0.021
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	4460970.968	872502.0532	1041.004231	216302983.9	5.112849	0.021
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	61620307.95	16295041.21	15260.36314	3299809595	3.781537	0.019
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	40105709.31	4371982.211	8573.9995	1605305294	9.173347	0.025
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	7344647.465	5786347.205	15268.61198	378498362	1.269306	0.019
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	843018.8692	205237.2791	701.1518198	54023171.02	4.107533	0.016
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	56292710.13	29991758.66	46053.50486	2938697868	1.876939	0.019
Statewide Totals	2041	Construction and	Aggregate	Aggregate	Diesel	2316682.692	1092067.98	2766.662593	85863434.42	2.121372	0.027
Statewide Totals	2041	Industrial - Aerial	Aggregate	Aggregate	Diesel	3565696.722	3432047.065	10377.29505	215823427	1.038942	0.017
Statewide Totals	2041	Industrial - Forklifi	Aggregate	Aggregate	Diesel	15013021.96	16061953.64	19467.14464	1437610341	0.934695	0.010
Statewide Totals	2041	Industrial - Misc -	Aggregate	Aggregate	Diesel	3155.673738	0	1471.519933	0		
Statewide Totals	2041	Industrial - Misc -	Aggregate	Aggregate	Diesel	2520.422357	0	308.8477213	0		
Statewide Totals	2041	Industrial - Misc -	Aggregate	Aggregate	Diesel	681.6237777	0	127.4279964	0		
Statewide Totals	2041	Industrial - Other	Aggregate	Aggregate	Diesel	7250858.854	4530898.532	4955.876511	399595829.7	1.600314	0.018
Statewide Totals	2041	Industrial - Other	Aggregate	Aggregate	Diesel	4251196.417	1238427.389	1490.725013	207432370.3	3.432738	0.020
Statewide Totals	2041	Light Commercial	Aggregate	Aggregate	Diesel	1077803.199	973392.95	1392.738148	36015539.15	1.107264	0.030
Statewide Totals	2041	Light Commercial	Aggregate	Aggregate	Diesel	5015103.649	1959582.8	17091.15086	64666232.4	2.559271	0.078
Statewide Totals	2041	Light Commercial	Aggregate	Aggregate	Diesel	25376.10316	19658.9	509.9189744	747038.2	1.29082	0.034
Statewide Totals	2041	Light Commercial	Aggregate	Aggregate	Diesel	2772736.123	1022817.6	8899.336274	37844251.2	2.71088	0.073
Statewide Totals	2041	Light Commercial	Aggregate	Aggregate	Diesel	5579771.711	3838686.75	10138.65941	176579590.5	1.453563	0.032
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	3871395.443	674599.7624	1712.808852	149159904.2	5.738803	0.026
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	9154711.662	2658315.394	5152.83832	614366729.5	3.443802	0.015
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	22609099.28	4801699.417	9491.455272	1018553826	4.708562	0.022
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	40735330.58	13004397.13	18447.84532	2049610807	3.132427	0.020
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	15303117.1	3841707.092	5963.862331	722674321.3	3.983416	0.021
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	875.1545893	0	142.9533013	0		
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	1283.042867	0	992.0599859	0		
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	49665.1951	35875.85	90.23331159	1183903.05	1.384363	0.042
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	103.8004164	0	41.95550691	0		
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	740.110485	0	65.79000098	0		
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	2789.422444	0	640.7463078	0		
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	196.5162061	0	26.17000039	0		
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	327.129431	0	63.7510096	0		
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	923.6548629	0	574.1500058	0		
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	5596.866935	0	1713.755721	0		
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	136.9064335	0	17.23969602	0		
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	36118.27601	13004.95	5043.434768	481183.15	2.777271	0.075
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	36709.56214	0	6509.863963	0		
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	3557.908369	0	485.7410177	0		
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	4236.195698	0	658.8579673	0		
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	8621145.918	3048532.374	4199.595139	377949666.6	2.827966	0.023
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	51822644.96	6488691.149	4395.426165	2628890374	7.98661	0.020
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	11548506.13	3100091.016	6355.699494	533878614.6	3.725215	0.022
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	2715409.033	974074.4728	2255.744199	126094899.9	2.787681	0.022
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	1580304.686	650155.3572	1278.089061	85536194.08	2.430657	0.018
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	7043973.041	4418118.651	11759.0795	354913236.1	1.594338	0.020
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	7648693.784	3652313.301	11846.39172	367012494.8	2.094205	0.021
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	4504710.177	881056.8163	1047.369087	218423805	5.112849	0.021
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	62224486.63	16454811.85	15353.66729	3332163776	3.781537	0.019
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	40498940.29	4414848.898	8626.422218	1621045093	9.173347	0.025
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	7416660.726	5843081.547	15361.96657	382209486.6	1.269306	0.019
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	851284.5537	207249.6025	705.4387672	54552860.81	4.107533	0.016
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	56844652.44	30285823.74	46335.08289	2967511398	1.876939	0.019
Statewide Totals	2042	Construction and	Aggregate	Aggregate	Diesel	2339397.448	1102775.557	2783.578383	86705313.63	2.121372	0.027
Statewide Totals	2042	Industrial - Aerial	Aggregate	Aggregate	Diesel	3600657.89	3465697.816	10440.74339	217939546.1	1.038942	0.017
Statewide Totals	2042	Industrial - Forklifi	Aggregate	Aggregate	Diesel	15160222.59	16219438.9	19586.16968	1451705913	0.934695	0.010
Statewide Totals	2042	Industrial - Misc -	Aggregate	Aggregate	Diesel	3144.966597	0	1466.526805	0		
Statewide Totals	2042	Industrial - Misc -	Aggregate	Aggregate	Diesel	2509.158192	0	307.4786001	0		
Statewide Totals	2042	Industrial - Misc -	Aggregate	Aggregate	Diesel	670.6391387	0	125.3068543	0		
Statewide Totals	2042	Industrial - Other	Aggregate	Aggregate	Diesel	7321952.531	4575323.371	4986.177483	403513812	1.600314	0.018
Statewide Totals	2042	Industrial - Other	Aggregate	Aggregate	Diesel	4292878.815	1250570	1499.839529	209466216.3	3.432738	0.020
Statewide Totals	2042	Light Commercial	Aggregate	Aggregate	Diesel	1077745.104	973392.95	1392.578189	36015539.15	1.107205	0.030
Statewide Totals	2042	Light Commercial	Aggregate	Aggregate	Diesel	5015071.695	1959582.8	17090.93046	64666232.4	2.559255	0.078
Statewide Totals	2042	Light Commercial	Aggregate	Aggregate	Diesel	25370.93625	19658.9	509.7888365	747038.2	1.290557	0.034
Statewide Totals	2042	Light Commercial	Aggregate	Aggregate	Diesel	2772781.315	1022817.6	8899.446059	37844251.2	2.710925	0.073
Statewide Totals	2042	Light Commercial	Aggregate	Aggregate	Diesel	5579891.657	3838686.75	10139.14926	176579590.5	1.453594	0.032
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	3908985.38	681149.8975	1723.170286	150608196.3	5.738803	0.026
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	9243600.81	2684126.735	5184.009805	620332022.2	3.443802	0.015
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	22828625.97	4848322.291	9548.872706	1028443639	4.708562	0.022
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	41130856.84	13130665.42	18559.44337	2069511834	3.132427	0.020
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	15451705.18	3879008.766	5999.94001	729691244	3.983416	0.021
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	875.4599875	0	142.976496	0		
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	1283.51482	0	992.2699454	0		
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	49663.30582	35875.85	89.83819109	1183903.05	1.38431	0.042
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	103.803049	0	41.95657143	0		
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	740.3354728	0	65.81000002	0		
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	2788.85772	0	640.6157951	0		
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	196.5912951	0	26.18000001	0		
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	325.591307	0	63.45125914	0		
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	923.6066087	0	574.1200123	0		
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	5576.518082	0	1707.000835	0		
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	135.1794787	0	17.02223251	0		
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	36118.39322	13004.95	5043.47572	481183.15	2.77728	0.075
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	36598.38345	0	6490.148191	0		
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	3556.739676	0	485.581462	0		
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	4121.031614	0	644.8382139	0		
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	8704854.322	3078132.59	4225.000093	381619429.8	2.827966	0.023
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	52325825.27	6551694.141	4422.015775	2654416008	7.98661	0.020
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	11660638.21	3130191.849	6394.147545	539062395	3.725215	0.022
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	2741774.735	983532.4058	2269.390056	127319238.6	2.787681	0.022
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	1595648.909	656468.1453	1285.820709	86366721.53	2.430657	0.018
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	7112367.632	4461017.086	11830.21466	358359323.3	1.594338	0.020
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	7722960.008	3687776.025	11918.05506	370576061.7	2.094205	0.021
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	4548449.386	889611.5794	1053.705023	220544626.1	5.112849	0.021
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	62828665.3	16614582.5	15446.54748	3364517957	3.781537	0.019
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	40892171.27	4457715.584	8678.606738	1636784891	9.173347	0.025
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	7488673.988	5899815.888	15454.89696	385920611.1	1.269306	0.019
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	859550.2382	209261.9259	709.7062355	55082550.6	4.107533	0.016
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	57396594.75	30579888.83	46615.38149	2996324927	1.876939	0.019
Statewide Totals	2043	Construction and	Aggregate	Aggregate	Diesel	2362112.205	1113483.134	2800.41731	87547192.84	2.121372	0.027
Statewide Totals	2043	Industrial - Aerial	Aggregate	Aggregate	Diesel	3635619.058	3499348.567	10503.90343	220055665.3	1.038942	0.017
Statewide Totals	2043	Industrial - Forklifi	Aggregate	Aggregate	Diesel	15307423.21	16376924.15	19704.6539	1465801486	0.934695	0.010
Statewide Totals	2043	Industrial - Misc -	Aggregate	Aggregate	Diesel	3138.067207	0	1463.309291	0		
Statewide Totals	2043	Industrial - Misc -	Aggregate	Aggregate	Diesel	2503.465222	0	306.9769866	0		
Statewide Totals	2043	Industrial - Misc -	Aggregate	Aggregate	Diesel	663.8193644	0	124.1332699	0		
Statewide Totals	2043	Industrial - Other	Aggregate	Aggregate	Diesel	7393046.209	4619748.211	5016.340773	407431794.4	1.600314	0.018
Statewide Totals	2043	Industrial - Other	Aggregate	Aggregate	Diesel	4334561.213	1262712.611	1508.912631	211500062.2	3.432738	0.020

Statewide Totals	2043	Light Commercial	Aggregate	Aggregate	Diesel	1077766.197	973392.95	1392.608199	36015539.15	1.107226	0.030
Statewide Totals	2043	Light Commercial	Aggregate	Aggregate	Diesel	5015123.975	1959582.8	17091.13059	64666232.4	2.559281	0.078
Statewide Totals	2043	Light Commercial	Aggregate	Aggregate	Diesel	25370.73779	19658.9	509.7688685	747038.2	1.290547	0.034
Statewide Totals	2043	Light Commercial	Aggregate	Aggregate	Diesel	2772742.354	1022817.6	8899.366368	37844251.2	2.710886	0.073
Statewide Totals	2043	Light Commercial	Aggregate	Aggregate	Diesel	5579814.939	3838686.75	10138.81918	176579590.5	1.453574	0.032
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	3946575.318	687700.0325	1733.485064	152056488.4	5.738803	0.026
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	9332489.957	2709938.077	5215.040927	626297314.9	3.443802	0.015
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	23048152.66	4894945.164	9606.031594	1038333451	4.708562	0.022
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	41526383.09	13256933.71	18670.53891	2089412860	3.132427	0.020
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	15600293.26	3916310.439	6035.855234	736708166.8	3.983416	0.021
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	875.4315474	0	142.9911723	0		
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	1283.475656	0	992.3200484	0		
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	49661.33702	35875.85	89.42643761	1183903.05	1.384255	0.042
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	103.6857051	0	41.90914158	0		
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	740.560518	0	65.83000516	0		
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	2788.469019	0	640.524945	0		
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	196.9667716	0	26.23000206	0		
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	324.6743222	0	63.27255755	0		
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	923.5262032	0	574.070027	0		
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	5561.226389	0	1702.79124	0		
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	133.6205191	0	16.82592291	0		
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	36118.50631	13004.95	5043.515003	481183.15	2.777289	0.075
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	36506.89667	0	6473.924477	0		
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	3555.804514	0	485.4537886	0		
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	4101.070936	0	643.5077053	0		
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	8788562.727	3107732.806	4250.29065	385289192.9	2.827966	0.023
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	52829005.59	6614697.133	4448.485654	2679941643	7.98661	0.020
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	11772770.29	3160292.682	6432.422468	544246175.4	3.725215	0.022
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	2768140.436	992990.3387	2282.974468	128543577.3	2.787681	0.022
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	1610993.132	662780.9335	1293.517542	87197248.98	2.430657	0.018
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	7180762.223	4503915.52	11901.0295	361805410.6	1.594338	0.020
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	7797226.233	3723238.749	11989.39571	374139628.6	2.094205	0.021
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	4592188.595	898166.3424	1060.012428	222665447.2	5.112849	0.021
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	63432843.97	16774353.14	15539.00944	3396872137	3.781537	0.019
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	41285402.26	4500582.271	8730.556275	1652524689	9.173347	0.025
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	7560687.25	5956550.229	15547.4089	389631735.7	1.269306	0.019
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	867815.9227	211274.2493	713.9544877	55612240.39	4.107533	0.016
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	57948537.05	30873953.91	46894.41792	3025138457	1.876939	0.019
Statewide Totals	2044	Construction and	Aggregate	Aggregate	Diesel	2384826.961	1124190.711	2817.180414	88389072.04	2.121372	0.027
Statewide Totals	2044	Industrial - Aerial	Aggregate	Aggregate	Diesel	3670580.225	3532999.318	10566.77907	222171784.4	1.038942	0.017
Statewide Totals	2044	Industrial - Forklift	Aggregate	Aggregate	Diesel	15454623.83	16534409.4	19822.60459	1479897058	0.934695	0.010
Statewide Totals	2044	Industrial - Misc -	Aggregate	Aggregate	Diesel	3133.47187	0	1461.165783	0		
Statewide Totals	2044	Industrial - Misc -	Aggregate	Aggregate	Diesel	2503.833902	0	307.1115083	0		
Statewide Totals	2044	Industrial - Misc -	Aggregate	Aggregate	Diesel	662.1644278	0	123.8750152	0		
Statewide Totals	2044	Industrial - Other	Aggregate	Aggregate	Diesel	7464139.886	4664173.05	5046.368241	411349776.7	1.600314	0.018
Statewide Totals	2044	Industrial - Other	Aggregate	Aggregate	Diesel	4376243.612	1274855.222	1517.944877	213533908.2	3.432738	0.020
Statewide Totals	2044	Light Commercial	Aggregate	Aggregate	Diesel	1077742.448	973392.95	1392.568164	36015539.15	1.107202	0.030
Statewide Totals	2044	Light Commercial	Aggregate	Aggregate	Diesel	5015168.822	1959582.8	17091.34032	64666232.4	2.559304	0.078
Statewide Totals	2044	Light Commercial	Aggregate	Aggregate	Diesel	25372.48348	19658.9	509.7687335	747038.2	1.290636	0.034
Statewide Totals	2044	Light Commercial	Aggregate	Aggregate	Diesel	2772842.788	1022817.6	8899.806179	37844251.2	2.710985	0.073
Statewide Totals	2044	Light Commercial	Aggregate	Aggregate	Diesel	5579784.588	3838686.75	10138.73935	176579590.5	1.453566	0.032
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	3984165.255	694250.1675	1743.753809	153504780.6	5.738803	0.026
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	9421379.104	2735749.418	5245.933567	632262607.7	3.443802	0.015
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	23267679.35	4941568.038	9662.935399	1048223264	4.708562	0.022
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	41921909.34	13383201.99	18781.13866	2109313886	3.132427	0.020
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	15748881.34	3953612.113	6071.610178	743725089.5	3.983416	0.021
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	874.8824232	0	142.8765459	0		
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	1283.501363	0	992.3299656	0		
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	49658.9115	35875.85	88.91916946	1183903.05	1.384188	0.042
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	103.8568225	0	41.97830593	0		
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	740.110505	0	65.79000203	0		
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	2788.067602	0	640.433451	0		
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	197.0418547	0	26.24000081	0		
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	323.1083195	0	62.96737504	0		
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	923.493996	0	574.0500147	0		
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	5551.232142	0	1700.415757	0		
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	131.8298576	0	16.6004371	0		
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	36118.40205	13004.95	5043.478734	481183.15	2.777281	0.075
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	36523.2934	0	6476.832202	0		
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	3554.097962	0	485.2208119	0		
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	4118.903646	0	645.9853997	0		
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	8872271.132	3137333.022	4275.468342	388958956.1	2.827966	0.023
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	53332185.91	6677700.125	4474.837406	2705467277	7.98661	0.020
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	11884902.37	3190393.515	6470.526581	549429955.8	3.725215	0.022
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	2794506.138	1002448.272	2296.498256	129767916.1	2.787681	0.022
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	1626337.355	669093.7216	1301.180027	88027776.43	2.430657	0.018
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	7249156.814	4546813.955	11971.52832	365251497.8	1.594338	0.020
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	7871492.457	3758701.474	12060.41799	377703195.6	2.094205	0.021
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	4635927.804	906721.1055	1066.291685	224786268.3	5.112849	0.021
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	64037022.65	16934123.79	15631.05877	3429226318	3.781537	0.019
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	41678633.24	4543448.957	8782.273976	1668264488	9.173347	0.025
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	7632700.512	6013284.571	15639.50799	393342860.3	1.269306	0.019
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	876081.6072	213286.5727	718.1837812	56141930.17	4.107533	0.016
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	58500479.36	31168018.99	47172.2091	3053951987	1.876939	0.019
Statewide Totals	2045	Construction and	Aggregate	Aggregate	Diesel	2407541.717	1134898.288	2833.868708	89230951.25	2.121372	0.027
Statewide Totals	2045	Industrial - Aerial	Aggregate	Aggregate	Diesel	3705541.393	3566650.069	10629.37411	224287903.5	1.038942	0.017
Statewide Totals	2045	Industrial - Forklift	Aggregate	Aggregate	Diesel	15601824.46	16691894.66	19940.02889	1493992630	0.934695	0.010
Statewide Totals	2045	Industrial - Misc -	Aggregate	Aggregate	Diesel	3135.168446	0	1461.956399	0		
Statewide Totals	2045	Industrial - Misc -	Aggregate	Aggregate	Diesel	2506.499951	0	307.4693035	0		
Statewide Totals	2045	Industrial - Misc -	Aggregate	Aggregate	Diesel	662.9429541	0	124.0420879	0		
Statewide Totals	2045	Industrial - Other	Aggregate	Aggregate	Diesel	7535233.563	4708597.889	5076.261704	415267759.1	1.600314	0.018
Statewide Totals	2045	Industrial - Other	Aggregate	Aggregate	Diesel	4417926.01	1286997.832	1526.936815	215567754.2	3.432738	0.020
Statewide Totals	2045	Light Commercial	Aggregate	Aggregate	Diesel	1077763.498	973392.95	1392.608044	36015539.15	1.107223	0.030
Statewide Totals	2045	Light Commercial	Aggregate	Aggregate	Diesel	5015205.331	1959582.8	17091.53983	64666232.4	2.559323	0.078
Statewide Totals	2045	Light Commercial	Aggregate	Aggregate	Diesel	25364.72188	19658.9	509.648715	747038.2	1.290241	0.034
Statewide Totals	2045	Light Commercial	Aggregate	Aggregate	Diesel	2772867.299	1022817.6	8899.745867	37844251.2	2.711009	0.073
Statewide Totals	2045	Light Commercial	Aggregate	Aggregate	Diesel	5579746.701	3838686.75	10138.60935	176579590.5	1.453556	0.032
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	4021755.193	700800.3026	1753.977134	154953072.7	5.738803	0.026
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	9510268.252	2761560.76	5276.689561	638227900.4	3.443802	0.015
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	23487206.04	4988190.912	9719.587505	1058113076	4.708562	0.022
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	42317435.6	13509470.28	18891.2492	2129214912	3.132427	0.020
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	15897469.42	3990913.787	6107.20697	750742012.2	3.983416	0.021
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	873.6313645	0	142.6709095	0		
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	1283.787623	0	992.4299987	0		
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	49656.88774	35875.85	88.49592167	1183903.05	1.384131	0.042
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	103.7857569	0	41.94958149	0		
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	740.1104733	0	65.7900006	0		
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	2787.908098	0	640.3991432	0		
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	196.7414806	0	26.20000024	0		
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	322.0844561	0	62.76784431	0		

Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	923.4457495	0	574.0200248	0		
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	5549.734368	0	1700.307355	0		
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	131.0129753	0	16.49757268	0		
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	36118.50377	13004.95	5043.514143	481183.15	2.777289	0.075
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	36553.50927	0	6482.190505	0		
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	3552.933027	0	485.0617656	0		
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	4129.988018	0	648.3484239	0		
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	8955979.537	3166933.238	4300.534668	392628719.2	2.827966	0.023
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	53835366.23	6740703.116	4501.072597	2730992912	7.98661	0.020
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	11997034.46	3220494.348	6508.46215	554613736.2	3.725215	0.022
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	2820871.839	1011906.205	2309.962225	130992254.8	2.787681	0.022
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	1641681.578	675406.5098	1308.808619	88858303.89	2.430657	0.018
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	7317551.404	4589712.39	12041.7153	368697585	1.594338	0.020
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	7945758.681	3794164.198	12131.12612	381266762.5	2.094205	0.021
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	4679667.013	915275.8685	1072.543167	226907089.5	5.112849	0.021
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	64641201.32	17093894.44	15722.70094	3461580499	3.781537	0.019
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	42071864.22	4586315.643	8833.762917	1684004286	9.173347	0.025
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	7704713.774	6070018.912	15731.1997	397053984.9	1.269306	0.019
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	884347.2916	215298.8961	722.3943675	56671619.96	4.107533	0.016
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	59052421.67	31462084.08	47448.77154	3082765517	1.876939	0.019
Statewide Totals	2046	Construction and	Aggregate	Aggregate	Diesel	2430256.473	1145605.865	2850.483187	90072830.46	2.121372	0.027
Statewide Totals	2046	Industrial - Aerial l	Aggregate	Aggregate	Diesel	3740502.561	3600300.82	10691.69228	226404022.6	1.038942	0.017
Statewide Totals	2046	Industrial - Forklift	Aggregate	Aggregate	Diesel	15749025.08	16849379.91	20056.93381	1508088203	0.934695	0.010
Statewide Totals	2046	Industrial - Misc -	Aggregate	Aggregate	Diesel	3138.426486	0	1463.475675	0		
Statewide Totals	2046	Industrial - Misc -	Aggregate	Aggregate	Diesel	2508.83113	0	307.7816604	0		
Statewide Totals	2046	Industrial - Misc -	Aggregate	Aggregate	Diesel	666.5306672	0	124.7628238	0		
Statewide Totals	2046	Industrial - Other	Aggregate	Aggregate	Diesel	7606327.241	4753022.728	5106.022942	419185741.4	1.600314	0.018
Statewide Totals	2046	Industrial - Other	Aggregate	Aggregate	Diesel	4459608.408	1299140.443	1535.888979	217601600.1	3.432738	0.020
Statewide Totals	2046	Light Commercial	Aggregate	Aggregate	Diesel	1077739.858	973392.95	1392.588181	36015539.15	1.107199	0.030
Statewide Totals	2046	Light Commercial	Aggregate	Aggregate	Diesel	5015122.63	1959582.8	17091.23027	64666232.4	2.559281	0.078
Statewide Totals	2046	Light Commercial	Aggregate	Aggregate	Diesel	25368.78867	19658.9	509.7488924	747038.2	1.290448	0.034
Statewide Totals	2046	Light Commercial	Aggregate	Aggregate	Diesel	2772855.142	1022817.6	8899.7362	37844251.2	2.710997	0.073
Statewide Totals	2046	Light Commercial	Aggregate	Aggregate	Diesel	5579813.618	3838686.75	10138.77921	176579590.5	1.453574	0.032
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	4059345.131	707350.4376	1764.155635	156401364.8	5.738803	0.026
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	9599157.399	2787372.101	5307.310707	644193193.1	3.443802	0.015
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	23706732.74	5034813.786	9775.991223	1068002888	4.708562	0.022
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	42712961.85	13635738.57	19000.87697	2149115939	3.132427	0.020
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	16046057.5	4028215.461	6142.64769	757758934.9	3.983416	0.021
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	872.7979674	0	142.5604719	0		
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	1283.644415	0	992.3799216	0		
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	49657.90094	35875.85	88.70782248	1183903.05	1.38416	0.042
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	103.78812	0	41.95053705	0		
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	740.6729286	0	65.83999746	0		
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	2787.331832	0	640.2694029	0		
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	196.6663791	0	26.18999899	0		
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	321.044882	0	62.56525164	0		
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	923.5261168	0	574.0699768	0		
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	5553.804771	0	1701.51564	0		
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	131.085486	0	16.50670326	0		
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	36118.54661	13004.95	5043.528881	481183.15	2.777292	0.075
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	36591.89584	0	6488.99774	0		
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	3552.68489	0	485.0278842	0		
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	4140.734675	0	650.6053578	0		
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	9039687.942	3196533.454	4325.491091	396298482.4	2.827966	0.023
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	54338546.54	6803706.108	4527.192762	2756518546	7.98661	0.020
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	12109166.54	3250595.181	6546.231393	559797516.6	3.725215	0.022
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	2847237.54	1021364.138	2323.367161	132216593.6	2.787681	0.022
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	1657025.801	681719.298	1316.403763	89688831.34	2.430657	0.018
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	7385945.995	4632610.824	12111.59455	372143672.3	1.594338	0.020
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	8020024.905	3829626.922	12201.52423	384830329.4	2.094205	0.021
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	4723406.222	923830.6316	1078.76724	229027910.6	5.112849	0.021
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	65245380	17253665.08	15813.94131	3493934680	3.781537	0.019
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	42465095.21	4629182.33	8885.026108	1699744085	9.173347	0.025
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	7776727.036	6126753.253	15822.48939	400765109.4	1.269306	0.019
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	892612.9761	217311.2194	726.5864927	57201309.75	4.107533	0.016
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	59604363.98	31756149.16	47724.1214	3111579047	1.876939	0.019
Statewide Totals	2047	Construction and	Aggregate	Aggregate	Diesel	2452971.23	1156313.442	2867.02482	90914709.67	2.121372	0.027
Statewide Totals	2047	Industrial - Aerial l	Aggregate	Aggregate	Diesel	3775463.729	3633951.571	10753.73721	228520141.8	1.038942	0.017
Statewide Totals	2047	Industrial - Forklift	Aggregate	Aggregate	Diesel	15896225.7	17006865.17	20173.32616	1522183775	0.934695	0.010
Statewide Totals	2047	Industrial - Misc -	Aggregate	Aggregate	Diesel	3140.86439	0	1464.613401	0		
Statewide Totals	2047	Industrial - Misc -	Aggregate	Aggregate	Diesel	2512.427479	0	308.175973	0		
Statewide Totals	2047	Industrial - Misc -	Aggregate	Aggregate	Diesel	673.4029406	0	126.0948946	0		
Statewide Totals	2047	Industrial - Other	Aggregate	Aggregate	Diesel	7677420.918	4797447.567	5135.653692	423103723.8	1.600314	0.018
Statewide Totals	2047	Industrial - Other	Aggregate	Aggregate	Diesel	4501290.806	1311283.054	1544.801893	219635446.1	3.432738	0.020
Statewide Totals	2047	Light Commercial	Aggregate	Aggregate	Diesel	1077861.222	973392.95	1392.83816	36015539.15	1.107324	0.030
Statewide Totals	2047	Light Commercial	Aggregate	Aggregate	Diesel	5015143.756	1959582.8	17091.33021	64666232.4	2.559292	0.078
Statewide Totals	2047	Light Commercial	Aggregate	Aggregate	Diesel	25372.30709	19658.9	509.8089677	747038.2	1.290627	0.034
Statewide Totals	2047	Light Commercial	Aggregate	Aggregate	Diesel	2772799.483	1022817.6	8899.516317	37844251.2	2.710942	0.073
Statewide Totals	2047	Light Commercial	Aggregate	Aggregate	Diesel	5579770.723	3838686.75	10138.58904	176579590.5	1.453562	0.032
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	4096935.068	713900.5727	1774.289897	157849656.9	5.738803	0.026
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	9688046.546	2813183.442	5337.798763	650158485.8	3.443802	0.015
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	23926259.43	5081436.66	9832.149791	1077892701	4.708562	0.022
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	43108488.1	13762006.86	19110.02826	2169016965	3.132427	0.020
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	16194645.58	4065517.134	6177.934373	764775857.6	3.983416	0.021
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	872.3005042	0	142.4770789	0		
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	1283.596762	0	992.2799542	0		
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	49658.7609	35875.85	88.88767104	1183903.05	1.384184	0.042
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	103.9344771	0	42.00969338	0		
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	739.9979467	0	65.77999729	0		
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	2787.721755	0	640.3596543	0		
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	196.7414705	0	26.19999892	0		
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	320.0251443	0	62.36652517	0		
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	923.5421509	0	574.0799539	0		
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	5556.837863	0	1702.512991	0		
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	130.9203426	0	16.48590799	0		
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	36118.49593	13004.95	5043.511295	481183.15	2.777288	0.075
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	36631.32878	0	6495.990506	0		
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	3550.449153	0	484.7226506	0		
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	4152.089116	0	652.8017144	0		
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	9123396.346	3226133.67	4350.339046	399968245.6	2.827966	0.023
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	54841726.86	6866709.1	4553.1994	2782044181	7.98661	0.020
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	12221298.62	3280696.014	6583.836478	564981297	3.725215	0.022
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	2873603.242	1030822.071	2336.713836	133440932.3	2.787681	0.022
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	1672370.024	688032.0861	1323.965897	90519358.79	2.430657	0.018
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	7454340.586	4675509.259	12181.17009	375589759.5	1.594338	0.020
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	8094291.129	3865089.646	12271.61637	388393896.4	2.094205	0.021
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	4767145.431	932385.3947	1084.964261	231148731.7	5.112849	0.021
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	65849558.67	17413435.73	15904.78512	3526288861	3.781537	0.019
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	42858326.19	4672049.016	8936.066492	1715483883	9.173347	0.025
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	7848740.298	6183487.595	15913.3823	404476234	1.269306	0.019

Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	900878.6606	219323.5428	730.7603976	57730999.54	4.107533	0.016
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	60156306.29	32050214.25	47998.27451	3140392577	1.876939	0.019
Statewide Totals	2048	Construction and	Aggregate	Aggregate	Diesel	2475685.986	1167021.019	2883.494557	91756588.87	2.121372	0.027
Statewide Totals	2048	Industrial - Aerial	Aggregate	Aggregate	Diesel	3810424.896	3667602.323	10815.51248	230636260.9	1.038942	0.017
Statewide Totals	2048	Industrial - Forklift	Aggregate	Aggregate	Diesel	16043426.32	17164350.42	20289.21263	1536279348	0.934695	0.010
Statewide Totals	2048	Industrial - Misc -	Aggregate	Aggregate	Diesel	3143.733396	0	1465.95225	0		
Statewide Totals	2048	Industrial - Misc -	Aggregate	Aggregate	Diesel	2514.237948	0	308.3517948	0		
Statewide Totals	2048	Industrial - Misc -	Aggregate	Aggregate	Diesel	678.0252427	0	126.9569486	0		
Statewide Totals	2048	Industrial - Other	Aggregate	Aggregate	Diesel	7748514.596	4841872.407	5165.155658	427021706.1	1.600314	0.018
Statewide Totals	2048	Industrial - Other	Aggregate	Aggregate	Diesel	4542973.205	1323425.665	1553.676069	221669292	3.432738	0.020
Statewide Totals	2048	Light Commercial	Aggregate	Aggregate	Diesel	1077774.158	973392.95	1392.638252	36015539.15	1.107234	0.030
Statewide Totals	2048	Light Commercial	Aggregate	Aggregate	Diesel	5015197.047	1959582.8	17091.5299	64666232.4	2.559319	0.078
Statewide Totals	2048	Light Commercial	Aggregate	Aggregate	Diesel	25380.9417	19658.9	510.0388262	747038.2	1.291066	0.034
Statewide Totals	2048	Light Commercial	Aggregate	Aggregate	Diesel	2772817.973	1022817.6	8899.686235	37844251.2	2.71096	0.073
Statewide Totals	2048	Light Commercial	Aggregate	Aggregate	Diesel	5579802.734	3838686.75	10138.75921	176579590.5	1.453571	0.032
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	4134525.006	720450.7077	1784.380491	159297949	5.738803	0.026
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	9776935.694	2838994.784	5368.15545	656123778.5	3.443802	0.015
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	24145786.12	5128059.534	9888.066379	1087782513	4.708562	0.022
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	43504014.36	13888275.15	19218.70923	2188917991	3.132427	0.020
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	16343233.66	4102818.808	6213.069009	771792780.3	3.983416	0.021
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	872.3019883	0	142.487263	0		
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	1283.502924	0	992.2598649	0		
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	49659.60152	35875.85	89.06347742	1183903.05	1.384207	0.042
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	103.9074108	0	41.99875316	0		
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	740.3354084	0	65.80999514	0		
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	2787.590552	0	640.3287917	0		
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	196.2909115	0	26.13999807	0		
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	319.171463	0	62.20015989	0		
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	923.5100175	0	574.0599777	0		
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	5559.849121	0	1703.552425	0		
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	131.2992048	0	16.53361567	0		
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	36118.56202	13004.95	5043.534244	481183.15	2.777293	0.075
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	36671.51062	0	6503.11616	0		
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	3552.024809	0	484.9377669	0		
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	4167.579706	0	655.2667251	0		
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	9207104.751	3255733.886	4375.079934	403638008.7	2.827966	0.023
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	55344907.18	6929712.092	4579.093979	2807569815	7.98661	0.020
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	12333430.7	3310796.847	6621.279528	570165077.4	3.725215	0.022
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	2899968.943	1040280.004	2350.003001	134665271	2.787681	0.022
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	1687714.247	694344.8743	1331.495446	91349886.25	2.430657	0.018
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	7522735.177	4718407.694	12250.44583	379035846.7	1.594338	0.020
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	8168557.354	3900552.37	12341.40649	391957463.3	2.094205	0.021
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	4810884.64	940940.1577	1091.13458	233269552.8	5.112849	0.021
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	66453737.35	17573206.37	15995.2375	3558643042	3.781537	0.019
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	43251557.17	4714915.703	8986.886949	1731223682	9.173347	0.025
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	7920753.559	6240221.936	16003.88357	408187358.6	1.269306	0.019
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	909144.3451	221335.8662	734.9163175	58260689.33	4.107533	0.016
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	60708248.59	32344279.33	48271.24632	3169206107	1.876939	0.019
Statewide Totals	2049	Construction and	Aggregate	Aggregate	Diesel	2498400.742	1177728.596	2899.893328	92598468.08	2.121372	0.027
Statewide Totals	2049	Industrial - Aerial	Aggregate	Aggregate	Diesel	3845386.064	3701253.074	10877.02157	232752380	1.038942	0.017
Statewide Totals	2049	Industrial - Forklift	Aggregate	Aggregate	Diesel	16190626.95	17321835.68	20404.59976	1550374920	0.934695	0.010
Statewide Totals	2049	Industrial - Misc -	Aggregate	Aggregate	Diesel	3146.266872	0	1467.134405	0		
Statewide Totals	2049	Industrial - Misc -	Aggregate	Aggregate	Diesel	2514.110873	0	308.3223726	0		
Statewide Totals	2049	Industrial - Misc -	Aggregate	Aggregate	Diesel	679.9879812	0	127.2685986	0		
Statewide Totals	2049	Industrial - Other	Aggregate	Aggregate	Diesel	7819608.273	4886297.246	5194.530503	430939688.5	1.600314	0.018
Statewide Totals	2049	Industrial - Other	Aggregate	Aggregate	Diesel	4584655.603	1335568.276	1562.512007	223703138	3.432738	0.020
Statewide Totals	2049	Light Commercial	Aggregate	Aggregate	Diesel	1077774.061	973392.95	1392.588214	36015539.15	1.107234	0.030
Statewide Totals	2049	Light Commercial	Aggregate	Aggregate	Diesel	5015179.119	1959582.8	17091.50064	64666232.4	2.55931	0.078
Statewide Totals	2049	Light Commercial	Aggregate	Aggregate	Diesel	25380.3056	19658.9	510.0188538	747038.2	1.291034	0.034
Statewide Totals	2049	Light Commercial	Aggregate	Aggregate	Diesel	2772852.141	1022817.6	8899.746232	37844251.2	2.710994	0.073
Statewide Totals	2049	Light Commercial	Aggregate	Aggregate	Diesel	5579747.231	3838686.75	10138.53927	176579590.5	1.453556	0.032
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	4172114.943	727000.8428	1794.427978	160746241.1	5.738803	0.026
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	9865824.841	2864806.125	5398.382451	662089071.2	3.443802	0.015
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	24365312.81	5174682.407	9943.744087	1097672326	4.708562	0.022
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	43899540.61	14014543.44	19326.92591	2208819017	3.132427	0.020
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	16491821.74	4140120.482	6248.053548	778809703.1	3.983416	0.021
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	872.9009039	0	142.5926879	0		
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	1283.437395	0	992.239972	0		
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	49660.32582	35875.85	89.21495828	1183903.05	1.384227	0.042
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	103.8021843	0	41.9562218	0		
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	740.222936	0	65.7999976	0		
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	2787.77822	0	640.3716679	0		
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	196.5912869	0	26.17999905	0		
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	317.8218063	0	61.93713838	0		
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	923.4296083	0	574.0099866	0		
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	5564.124636	0	1704.961045	0		
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	131.5801705	0	16.56899568	0		
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	36118.4496	13004.95	5043.495234	481183.15	2.777285	0.075
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	36708.43051	0	6509.663381	0		
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	3552.613515	0	485.0181352	0		
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	4182.28522	0	657.8178479	0		
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	9290813.156	3285334.102	4399.715127	407307771.9	2.827966	0.023
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	55848087.5	6992715.084	4604.877934	2833095450	7.98661	0.020
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	12445562.78	3340897.68	6658.562618	575348857.8	3.725215	0.022
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	2926334.644	1049737.937	2363.235394	135889609.8	2.787681	0.022
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	1703058.469	700657.6624	1338.992828	92180413.7	2.430657	0.018
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	7591129.767	4761306.128	12319.42562	382481933.9	1.594338	0.020
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	8242823.578	3936015.095	12410.89846	395521030.2	2.094205	0.021
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	4854623.849	949494.9208	1097.278539	235390373.9	5.112849	0.021
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	67057916.02	17732977.02	16085.30346	3590997223	3.781537	0.019
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	43644788.16	4757782.389	9037.490297	1746963480	9.173347	0.025
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	7992766.821	6296956.277	16093.99822	411898483.1	1.269306	0.019
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	917410.0296	223348.1896	739.0544832	58790379.12	4.107533	0.016
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	61260190.9	32638344.41	48543.05197	3198019636	1.876939	0.019
Statewide Totals	2050	Construction and	Aggregate	Aggregate	Diesel	2521115.499	1188436.172	2916.222043	93440347.29	2.121372	0.027
Statewide Totals	2050	Industrial - Aerial	Aggregate	Aggregate	Diesel	3880347.232	3734903.825	10938.26788	234868499.1	1.038942	0.017
Statewide Totals	2050	Industrial - Forklift	Aggregate	Aggregate	Diesel	16337827.57	17479320.93	20519.49394	1564470492	0.934695	0.010
Statewide Totals	2050	Industrial - Misc -	Aggregate	Aggregate	Diesel	3147.704747	0	1467.805361	0		
Statewide Totals	2050	Industrial - Misc -	Aggregate	Aggregate	Diesel	2514.338953	0	308.3601002	0		
Statewide Totals	2050	Industrial - Misc -	Aggregate	Aggregate	Diesel	680.7273065	0	127.3758396	0		
Statewide Totals	2050	Industrial - Other	Aggregate	Aggregate	Diesel	7890701.95	4930722.085	5223.779858	434857670.8	1.600314	0.018
Statewide Totals	2050	Industrial - Other	Aggregate	Aggregate	Diesel	4626338.001	1347710.887	1571.310197	225736984	3.432738	0.020
Statewide Totals	2050	Light Commercial	Aggregate	Aggregate	Diesel	1077779.267	973392.95	1392.558199	36015539.15	1.10724	0.030
Statewide Totals	2050	Light Commercial	Aggregate	Aggregate	Diesel	5015184.375	1959582.8	17091.4405	64666232.4	2.559312	0.078
Statewide Totals	2050	Light Commercial	Aggregate	Aggregate	Diesel	25373.63089	19658.9	509.8688494	747038.2	1.290694	0.034
Statewide Totals	2050	Light Commercial	Aggregate	Aggregate	Diesel	2772821.921	1022817.6	8899.586239	37844251.2	2.710964	0.073
Statewide Totals	2050	Light Commercial	Aggregate	Aggregate	Diesel	5579783.904	3838686.75	10138.7193	176579590.5	1.453566	0.032

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Statewide
Region: California
Calendar Year: 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Y	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Con	NOx_RUNE	NOx_IDLEX	NOx_STREX	NOx_TOTE	PM2.5_RUI	PM2.5_IDL	PM2.5_STR	PM2.5_TO	PM2.5_PM	PM2.5_PM	PM2.5_TO	PM10_RUN	PM10_IDLE	PM10_STR	PM10_TOT	PM10_PMT	PM10_PME	PM10_TOT	CO2_RUNE	CO2_IDLEX	CO2_STREX
Statewide Totals	2000	HHDT	Aggregate	Aggregate	Gasoline	7275.921	471942.6917	471942.7	0	145576.6	0	9.859154	0	0.073892	9.933046	0.005943	0	0.001672	0.007615	0.002601	0.02077	0.030986	0.006325	0	0.001757	0.008082	0.010405	0.059341	0.077828	1395.884	0	22.87911
Statewide Totals	2000	HHDT	Aggregate	Aggregate	Diesel	178113	34780709.82	34780710	0	2615210	0	816.6459	38.56693	0	855.2129	26.62526	0.938802	0	27.56407	0.340096	1.393424	29.29759	27.82914	0.981251	0	28.81039	1.360383	3.981213	34.15199	67652.52	2546.349	0
Statewide Totals	2000	HHDT	Aggregate	Aggregate	Natural Ga	22.94925	2260.787679	2260.788	0	105.5666	0	0.081074	0.000255	0	0.081329	9.35E-05	1.06E-08	0	9.35E-05	2.24E-05	0.000183	0.000299	0.000102	1.15E-08	0	0.000102	8.97E-05	0.000523	0.000715	6.729056	0.175377	0
Statewide Totals	2000	LDA	Aggregate	Aggregate	Gasoline	12975810	471611911.4	4.72E+08	0	60588685	0	400.1413	0	74.56572	474.707	5.654088	0	0.94745	6.601538	1.039727	1.408631	9.049897	6.131405	0	1.024785	7.156189	4.158908	4.024661	15.33976	192033	0	8056.159
Statewide Totals	2000	LDA	Aggregate	Aggregate	Diesel	105932.6	2646169.423	2646169	0	444172.4	0	4.861548	0	0	4.861548	0.823609	0	0	0.823609	0.005834	0.008233	0.837676	0.860849	0	0	0.860849	0.023335	0.023522	0.907706	1061.047	0	0
Statewide Totals	2000	LDA	Aggregate	Aggregate	Electricity	1057.529	28851.5002	0	28851.5	5012.231	11139.06	0	0	0	0	0	0	0	0	6.36E-05	4.87E-05	0.000112	0	0	0	0	0.000254	0.000139	0.000394	0	0	0
Statewide Totals	2000	LDT1	Aggregate	Aggregate	Gasoline	2319619	78517211.39	78517211	0	10534754	0	112.8446	0	16.14865	128.9933	1.189806	0	0.197168	1.386974	0.173101	0.277603	1.837678	1.283636	0	0.212101	1.495736	0.692404	0.793151	2.981291	36564.4	0	1689.394
Statewide Totals	2000	LDT1	Aggregate	Aggregate	Diesel	7655.172	204196.6135	204196.6	0	32394.38	0	0.360503	0	0	0.360503	0.057192	0	0	0.057192	0.00045	0.000793	0.058434	0.059777	0	0	0.059777	0.001801	0.002265	0.063843	97.21956	0	0
Statewide Totals	2000	LDT1	Aggregate	Aggregate	Electricity	481.9065	13223.03199	0	13223.03	2288.093	5105.182	0	0	0	0	0	0	0	0	2.92E-05	2.23E-05	5.15E-05	0	0	0	0	0.000117	6.38E-05	0.00018	0	0	0
Statewide Totals	2000	LDT2	Aggregate	Aggregate	Gasoline	3662790	139664976.6	1.4E+08	0	17446453	0	196.0028	0	38.57349	234.5763	1.468043	0	0.220776	1.688819	0.307909	0.479863	2.476591	1.590228	0	0.238772	1.829	1.231635	1.371038	4.431673	77785.89	0	2963.851
Statewide Totals	2000	LDT2	Aggregate	Aggregate	Diesel	536.8302	14153.84058	14153.84	0	2256.528	0	0.025962	0	0	0.025962	0.004236	0	0	0.004236	3.12E-05	5.63E-05	0.004324	0.004428	0	0	0.004428	0.000125	0.000161	0.004713	7.862356	0	0
Statewide Totals	2000	LHDT1	Aggregate	Aggregate	Gasoline	455853.5	18224522.24	18224522	0	6791538	0	33.37482	0.019849	2.672297	36.06697	0.157139	0	0.016619	0.173758	0.040178	0.548432	0.762369	0.170371	0	0.017923	0.188293	0.160713	1.56695	1.915956	20033.84	63.7458	215.0483
Statewide Totals	2000	LHDT1	Aggregate	Aggregate	Diesel	156454.2	6667507.011	6667507	0	1967997	0	57.69718	0.447726	0	58.14491	1.538792	0.010164	0	1.548956	0.022049	0.200646	0.771651	0.563154	0.010624	0	0.573778	0.088196	0.573274	1.235248	4255.438	24.75287	0
Statewide Totals	2000	LHDT2	Aggregate	Aggregate	Gasoline	64264.62	2461595.474	2461595	0	957447.1	0	4.646945	0.002796	0.375582	5.025323	0.02245	0	0.002589	0.025038	0.005427	0.086423	0.116888	0.024292	0	0.002783	0.027075	0.021708	0.246923	0.295706	3077.603	10.36628	34.91631
Statewide Totals	2000	LHDT2	Aggregate	Aggregate	Diesel	45991.92	1895768.951	1895769	0	578520.5	0	16.73296	0.131615	0	16.86458	0.151209	0.002737	0	0.153947	0.006269	0.066558	0.226774	0.158046	0.002861	0	0.160908	0.025077	0.190165	0.376149	1320.819	10.65682	0
Statewide Totals	2000	MCY	Aggregate	Aggregate	Gasoline	312832.7	1787569.248	1787569	0	625665.4	0	2.540545	0	0.220489	2.761034	0.020349	0	0.011909	0.032258	0.00197	0.008276	0.042505	0.021355	0	0.01249	0.033844	0.007882	0.023645	0.065372	445.2549	0	57.68817
Statewide Totals	2000	MDV	Aggregate	Aggregate	Gasoline	1845956	71542759.12	71542759	0	8879033	0	103.7947	0	16.41468	120.2094	0.691513	0	0.129746	0.821259	0.157725	0.241207	1.220191	0.748147	0	0.140307	0.888453	0.6309	0.689162	2.208515	41682.89	0	1579.362
Statewide Totals	2000	MDV	Aggregate	Aggregate	Diesel	10715.36	266653.4476	266653.4	0	44876.72	0	0.492851	0	0	0.492851	0.083125	0	0	0.083125	0.000588	0.001054	0.084767	0.086883	0	0	0.086883	0.002351	0.003012	0.092246	165.0222	0	0
Statewide Totals	2000	MH	Aggregate	Aggregate	Gasoline	249175.9	2102255.942	2102256	0	24927.56	0	7.585046	0	0.010593	7.595639	0.025119	0	0.000118	0.025237	0.006952	0.035869	0.068058	0.026897	0	0.000125	0.027022	0.027808	0.102483	0.157313	4574.041	0	1.692686
Statewide Totals	2000	MH	Aggregate	Aggregate	Diesel	11010.34	129992.5407	129992.5	0	1101.034	0	1.647796	0	0	1.647796	0.037952	0	0	0.037952	0.000573	0.00221	0.040736	0.039668	0	0	0.039668	0.002293	0.006315	0.048276	152.0889	0	0
Statewide Totals	2000	MHDT	Aggregate	Aggregate	Gasoline	85582.36	3476501.835	3476502	0	1712332	0	15.23531	0.007604	0.992724	16.23564	0.043866	0	0.013464	0.05733	0.011497	0.059344	0.128171	0.047013	0	0.014218	0.061231	0.045986	0.169555	0.276773	7535.28	54.06584	176.6874
Statewide Totals	2000	MHDT	Aggregate	Aggregate	Diesel	168694.8	10002588.56	10002589	0	2030696	0	141.9593	6.415234	0	148.3746	5.360118	0.217347	0	5.577465	0.033078	0.171056	5.781598	5.602479	0.227174	0	5.829653	0.132312	0.48873	6.450695	13222.29	410.678	0
Statewide Totals	2000	OBUS	Aggregate	Aggregate	Gasoline	8661.918	445070.8638	445070.9	0	173307.7	0	2.035105	0.000575	0.105128	2.140808	0.003295	0	0.000741	0.004036	0.001472	0.007612	0.01312	0.003551	0	0.000785	0.004335	0.005887	0.021749	0.031971	931.3112	3.804412	11.08419
Statewide Totals	2000	OBUS	Aggregate	Aggregate	Diesel	7325.669	652076.7269	652076.7	0	101407.5	0	11.74947	0.524799	0	12.27427	0.523672	0.014974	0	0.538647	0.002156	0.017029	0.557832	0.54735	0.015651	0	0.563002	0.008625	0.048653	0.62028	1026.215	35.12908	0
Statewide Totals	2000	SBUS	Aggregate	Aggregate	Gasoline	4474.215	224020.1594	224020.2	0	17896.86	0	0.773454	0.004081	0.009411	0.786947	0.004944	0	0.000209	0.005154	0.000494	0.003936	0.009583	0.005239	0	0.000221	0.00546	0.001976	0.011245	0.018681	242.6689	13.57408	1.832157
Statewide Totals	2000	SBUS	Aggregate	Aggregate	Diesel	16459.3	464026.3018	464026.3	0	238330.6	0	6.847146	0.567929	0	7.415076	0.314608	0.022302	0	0.33691	0.001535	0.008163	0.346608	0.328833	0.023311	0	0.352144	0.006138	0.023323	0.381605	646.3028	36.87474	0
Statewide Totals	2000	UBUS	Aggregate	Aggregate	Gasoline	562.0349	39387.95871	39387.96	0	2248.14	0	0.106139	0	0.002292	0.108432	0.000152	0	3.69E-06	0.000156	0.000114	0.001566	0.001836	0.000166	0	4.02E-06	0.00017	0.000457	0.004473	0.0051	73.52023	0	0.291123
Statewide Totals	2000	UBUS	Aggregate	Aggregate	Diesel	7610.327	874779.8905	874779.9	0	30441.31	0	19.31178	0	0	19.31178	0.126453	0	0	0.126453	0.007627	0.036913	0.170993	0.132171	0	0	0.132171	0.030507	0.105466	0.268145	1814.512	0	0
Statewide Totals	2000	UBUS	Aggregate	Aggregate	Natural Ga	1861.631	199171.5111	199171.5	0	7414.524	0	3.000618	0	0	3.000618	0.004221	0	0	0.004221	0.001801	0.008442	0.014464	0.004412	0	0	0.004412	0.007203	0.024121	0.035736	369.5404	0	0
Statewide Totals	2001	HHDT	Aggregate	Aggregate	Gasoline	6623.876	407826.2019	407826.2	0	132530.5	0	7.996926	0	0.057571	8.054497	0.004852	0	0.001524	0.006376	0.002248	0.017942	0.026566	0.005162	0	0.001601	0.006763	0.008991	0.051262	0.067016	1200.415	0	20.79911
Statewide Totals	2001	HHDT	Aggregate	Aggregate	Diesel	180027.9	34720083.44	34720083	0	2597929	0	825.4117	37.64796	0	863.0596	23.75908	0.843311	0	24.60239	0.339499	1.390899	26.33278	24.83336	0.881442	0	25.7148	1.357994	3.973996	31.04679	67234.1	2448.833	0
Statewide Totals	2001	HHDT	Aggregate	Aggregate	Natural Ga	44.68943	4316.772844	4316.773	0	205.5714	0	0.158572	0.000497	0	0.159069	0.00019	2.06E-08	0	0.00019	4.28E-05	0.00035	0.000582	0.000206	2.24E-08	0	0.000206	0.000171	0.000999	0.001377	13.95892	0.362637	0
Statewide Totals	2001	LDA	Aggregate	Aggregate	Gasoline	13308544	470242123.6	4.7E+08	0	62270350	0	361.7806	0	73.10608	434.8867	4.951452	0	0.870093	5.821544	1.036707	1.402176	8.260427	5.369953	0	0.941116	6.311069	4.146829	4.006216	14.46411	189574.3	0	8066.643
Statewide Totals	2001	LDA	Aggregate	Aggregate	Diesel	98459	2309416.956	2309417	0	409225.5	0	4.229092	0	0	4.229092	0.693368	0	0	0.693368	0.005091	0.007186	0.705645	0.72472	0	0	0.72472	0.020366	0.02053	0.765615	918.4808	0	0
Statewide Totals	2001	LDA	Aggregate	Aggregate	Electricity	1206.082	32532.3617	0	32532.36	5766.173	12560.18	0	0	0	0	0	0	0	0	7.17E-05	5.49E-05	0.000127	0	0	0	0	0.000287	0.000157	0.000444	0	0	0
Statewide Totals	2001	LDT1	Aggregate	Aggregate	Gasoline	2278708	74688562.89	74688563	0	10357793	0	97.5069	0	15.03846	112.5454	1.020137	0	0.177506	1.197643	0.16466	0.26363	1.625934	1.10073	0	0.190992	1.291722	0.658641	0.75323	2.703593	34645.14	0	1621.184
Statewide Totals	2001	LDT1	Aggregate	Aggregate	Diesel	6959.048	174638.8634	174638.9	0	29126.52	0	0.308829	0	0	0.308829	0.048262	0	0	0.048262	0.000385	0.000681	0.049328	0.050444	0	0	0.050444	0.00154	0.001947	0.053931	83.61976	0	0
Statewide Totals	2001	LDT1	Aggregate	Aggregate	Electricity	517.901	13678.34947	0	13678.35	2458.132	5280.972	0	0	0	0	0	0	0	0	3.02E-05	2.31E-05	5.33E-05	0	0	0	0	0.000121	6.61E-05	0.000187	0	0	0
Statewide Totals	2001	LDT2	Aggregate	Aggregate	Gasoline	3920021	144945820.5	1.45E+08	0	18709138	0	183.3265	0	39.43015	222.7566	1.328607	0	0.21092	1.539527	0.319551	0.496985	2.356063	1.439561	0	0.2282	1.667761	1.278204	1.419957	4.365922	80162.21	0	3101.688
Statewide Totals	2001	LDT2	Aggregate	Aggregate	Diesel	512.1679	13351.03581	13351.04	0	2157.592	0	0.024446	0	0	0.024446	0.003625	0	0	0.003625	2.94E-05	5.24E-05	0.003707	0.003789	0	0	0.003789	0.000118	0.00015	0.004057	7.254412	0	0
Statewide Totals	2001	LHDT1	Aggregate	Aggregate	Gasoline	492415.3	19024878.56	19024879	0	7336255	0	31.34914	0.021599	3.000658	34.3714	0.148448	0	0.016464	0.164912	0.041943	0.572518	0.779372	0.160997	0	0.017768	0.178765	0.167771	1.635764	1.9823	20852.43	68.90289	227.0778
Statewide Totals	2001	LHDT1	Aggregate	Aggregate	Diesel	178121.2	7496566.727	7496567	0	2240540	0	66.54267	0.50973	0	67.0524	0.541379	0.010452	0	0.551831	0.024791	0.225595	0.802216	0.565857	0.010925	0	0.576782	0.099163	0.644557	1.320502	4785.25	28.18043	0
Statewide Totals	2001	LHDT2	Aggregate	Aggregate	Gasoline	66390.19	2445772.607	2445773	0	989114.9	0	4.171891	0.002909	0.407301	4.582101	0.020371	0	0.002503	0.022874	0.005392	0.085868	0.114134	0.022042	0	0.002691	0.024733	0.021568	0.245336	0.291637	3049.261	10.71528	35.4393
Statewide Totals	2001	LHDT2	Aggregate	Aggregate	Diesel	49581.18	1981615.854	1981616	0	623668.9	0	17.85119	0.141887	0	17.99307	0.145196	0.002717	0	0.147913	0.006553	0.069572	0.224038	0.151761	0.00284	0	0.154601	0.026212	0.198777	0.37959	1382.844	11.64514	0
Statewide Totals	2001	MCY	Aggregate	Aggregate	Gasoline	382978.1	2460009.887	2460010	0	765956.3	0	3.485428	0	0.266751	3.75218	0.021292	0	0.012334	0.033625	0.002712	0.011389	0.047726	0.022366	0	0.012942	0.035308	0.010847	0.03254	0.078695	609.2118	0	70.32948
Statewide Totals	2001	MDV	Aggregate	Aggregate	Gasoline	2175319	82297944	82297944	0	10505898	0	101.458	0	19.43136	120.8894	0.677095	0	0.132875	0.80997	0.181436	0.275727	1.267133	0.732847	0	0.143753	0.8766	0.725744	0.787791	2.390135	48085.42	0	1822.969
Statewide Totals	2001	MDV	Aggregate	Aggregate	Diesel	9878.163	229909.0394	229909	0	40893.13	0	0.423727	0	0	0.423727	0.070614	0	0	0.070614	0.000507	0.000914	0.072035	0.073807	0	0	0.073807	0.002027	0.00261	0.078445	141.9564	0	0
Statewide Totals	2001	MH	Aggregate	Aggregate	Gasoline	241621	1967862.72	1967863	0	24171.77	0	6.583919	0	0.010304	6.594223	0.022016	0	0.000109	0.022125	0.006508	0.033578	0.062211	0.023578	0	0.000115	0.023693	0.02603	0.095938	0.145662	4269.969	0	1.59578
Statewide Totals	2001	MH	Aggregate	Aggregate	Diesel	12779.6	147756.8105	147756.8	0	1277.96	0	1.86144	0	0	1.86144	0.039974	0	0	0.039974	0.000651	0.002512	0.043138	0.041782	0	0	0.041782	0.002606	0.007177	0.051565	172.3908	0	0
Statewide Totals	2001	MHDT	Aggregate	Aggregate	Gasoline	81793.5	3226149.955	3226150	0	1636524	0	13.5007	0.007304	0.959661	14.46767	0.036849	0	0.012255	0.049105	0.010669	0.055049	0.114822	0.039511	0	0.012944	0.052454	0.042675	0.157284	0.252412	6961.643	51.69578	165.5635
Statewide Totals	2001	MHDT	Aggregate	Aggregate	Diesel	183194.1	9985419.064	9985419	0	2209555	0	141.2828	7.162695	0	148.4455	5.025018	0.218039	0	5.243057	0.033021	0.170763	5.446841	5.252227	0.227897	0	5.480125	0.132084	0.487893	6.100102	13154.28	452.1182	0
Statewide Totals	2001	OBUS	Aggregate	Aggregate	Gasoline	9376.588	485546.7757	485546.8	0	187606.8	0	1.970934	0.000631	0.108137	2.079701	0.00296	0	0.000694	0.003654	0.001606	0.008304	0.013564	0.003193	0	0.000735	0.003927	0.006423	0.023726	0.034076	1014.14	4.120626	11.3466
Statewide Totals	2001	OBUS	Aggregate	Aggregate	Diesel	8139.148	650961.4923	650961.5	0	114338.5	0	11.7338	0.610437	0	12.34424	0.497033	0.01664	0	0.513673	0.002153	0.016999	0.532825	0.519507	0.017392	0	0.536899	0.008611	0.048569	0.594079	1022.221	40.56154	0
Statewide Totals	2001	SBUS	Aggregate	Aggregate	Gasoline	4257.865	205602.6824	205602.7	0	17031.46	0	0.736078	0.003891	0.009312	0.749281	0.004325	0	0.000188	0.004513	0.000453	0.003612	0.008579	0.004587	0	0.000199	0.004786	0.001813	0.01032	0.016919	223.1693	12.92129	1.749473
Statewide Totals	2001	SBUS	Aggregate	Aggregate	Diesel	16459.22	463206.035	463206	0	238329.4	0	6.808995	0.584513	0	7.393508	0.299967	0.020979	0	0.320946	0.001532	0.008149	0.330626	0.31353	0.021928	0	0.335457	0.006127	0.023282	0.364866	642.9871	37.40796	0
Statewide Totals	2001	UBUS	Aggregate	Aggregate	Gasoline	493.3062	38065.7571	38065.76	0	1973.225	0	0.090135	0	0.002057	0.092191	0.000143	0	3.19E-06	0.000147	0.00011	0.001507	0.001763	0.000156	0	3.47E-06	0.000159	0.000438	0.004306	0.004904	70.4948	0	0.246092
Statewide Totals	2001	UBUS	Aggregate	Aggregate	Diesel	7829.577	834169.8664	834169.9	0	31318.31	0	18.32162	0	0	18.32162	0.11717	0	0	0.11717	0.007236	0.035202	0.159608	0.122468	0	0	0.122468	0.028944	0.100577	0.251989	1713.117	0	0
Statewide Totals	2001	UBUS	Aggregate	Aggregate	Electricity	34.31405	986.8338354	0	986.8338	137.2562	2007.697	0	0	0	0	0	0	0	0	1.25E-06	7.99E-06	9.24E-06	0	0	0	0	4.98E-06	2.28E-05	2.78E-05	0	0	0
Statewide Totals	2001	UBUS	Aggregate	Aggregate	Natural Ga	2425.005	264093.7951	264093.8	0	9700.02	0	4.042873	0	0	4.042873	0.005598	0	0	0.005598	0.002404	0.011196	0.019198	0.005851	0	0	0.005851	0.009615	0.031989	0.047455	526.6049	0	0
Statewide Totals	2002	HHDT	Aggregate	Aggregate	Gasoline	5817.393	382891.1421	382891.1	0	116394.4	0	6.691537	0	0.044552	6.736089	0.004099	0	0.001321	0.00542	0.00211	0.016884	0.024415	0.004359	0	0.001388	0.005747	0.008441	0.048241	0.06243	1122.301	0	18.18651
Statewide Totals	2002	HHDT	Aggregate	Aggregate	Diesel	174735.4	35500867.13	35500867	0	2547079	0	842.3105	39.54908	0	881.8595	23.20254	0.796912	0	23.99945	0.347132	1.421658	25.76824	24.25165	0.832945	0	25.0846	1.388529	4.061881	30.53501	68507.22	2529.258	0
Statewide Totals	2002	HHDT	Aggregate	Aggregate	Natural Ga	184.8037	17254.8382	17254.84	0	850.0972	0	0.646651	0.002056	0	0.648708	0.000801	8.5E-08	0	0.000801	0.000171	0.001398	0.00237	0.000871	9.25E-08	0	0.000871	0.000685	0.003994	0.00555	57.18027	1.50519	0
Statewide Totals	2002	LDA	Aggregate	Aggregate	Gasoline	13337654	489768886.2	4.9E+08	0	62474621	0	344.4293	0	70.57658	415.0058	4.575568	0	0.786575	5.362142	1.079756	1.458797	7.900695	4.962699	0	0.85078	5.813479	4.319025	4.16799	14.3005	196187.4	0	7921.649
Statewide Totals	2002	LDA	Aggregate	Aggregate	Diesel	91859.46	2213249.294	2213249	0	380198.5	0	4.050015	0	0	4.050015	0.621911	0	0	0.621911	0.004879	0.006859	0.633649	0.650031	0	0	0.650031	0.019518	0.019596	0.689145	866.8714	0	0
Statewide Totals	2002	LDA	Aggregate	Aggregate	Electricity	4877.048	159630.9694	0	159631	24685.49	61630.73	0	0	0	0	0	0	0	0	0.000352	0.000268	0.00062	0	0	0	0	0.001408	0.000766	0.002174	0	0	0
Statewide Totals	2002	LDT1	Aggregate	Aggregate	Gasoline	2148790	73247238.67	73247239	0	9780555	0	86.10996	0	13.43521	99.54516	0.898942	0	0.153084	1.052026	0.161483	0.258148	1.471656	0.97001	0	0.164732	1.134742	0.645931	0.737564	2.518237	33902.39	0	1494.849

Statewide Totals	2002	LDT1	Aggregate	Aggregate	Diesel	6305.647	163327.9703	163328	0	26274.88	0	0.290334	0	0	0.290334	0.042684	0	0	0.042684	0.00036	0.000634	0.043678	0.044614	0	0	0.044614	0.00144	0.001812	0.047866	79.57054	0	0
Statewide Totals	2002	LDT1	Aggregate	Aggregate	Electricity	1147.096	34539.9203	0	34539.92	5644.104	13335.26	0	0	0	0	0	0	0	0	7.61E-05	5.83E-05	0.000134	0	0	0	0	0.000305	0.000166	0.000471	0	0	0
Statewide Totals	2002	LDT2	Aggregate	Aggregate	Gasoline	3918886	149373101.5	1.49E+08	0	18684596	0	175.601	0	38.11815	213.7191	1.231894	0	0.192798	1.424692	0.329312	0.513219	2.267222	1.335023	0	0.208655	1.543678	1.317246	1.466339	4.327263	82350.29	0	3051.144
Statewide Totals	2002	LDT2	Aggregate	Aggregate	Diesel	451.8937	11878.69356	11878.69	0	1885.584	0	0.021761	0	0	0.021761	0.003124	0	0	0.003124	2.62E-05	4.68E-05	0.003197	0.003265	0	0	0.003265	0.000105	0.000134	0.003504	6.412166	0	0
Statewide Totals	2002	LHDT1	Aggregate	Aggregate	Gasoline	522118.7	21004483.39	21004483	0	7778791	0	30.50753	0.02308	3.305576	33.83619	0.147196	0	0.01592	0.163115	0.046307	0.63209	0.841512	0.15968	0	0.017192	0.176872	0.185228	1.805971	2.168071	23007.4	73.21497	235.6265
Statewide Totals	2002	LHDT1	Aggregate	Aggregate	Diesel	200223.6	8870250.046	8870250	0	2518560	0	76.80202	0.57298	0	77.375	0.597638	0.010655	0	0.608293	0.029333	0.266933	0.904559	0.624661	0.011136	0	0.635797	0.117333	0.762667	1.515797	5660.516	31.676	0
Statewide Totals	2002	LHDT2	Aggregate	Aggregate	Gasoline	65154.99	2546235.315	2546235	0	970712.3	0	3.593662	0.002887	0.423389	4.019939	0.017745	0	0.002054	0.019799	0.005613	0.089395	0.114807	0.019221	0	0.002211	0.021432	0.022454	0.255414	0.2993	3160.759	10.53983	33.35012
Statewide Totals	2002	LHDT2	Aggregate	Aggregate	Diesel	52321.03	2177788.844	2177789	0	658132.8	0	19.40592	0.149727	0	19.55565	0.148762	0.00261	0	0.151373	0.007202	0.076459	0.235034	0.155489	0.002728	0	0.158217	0.028807	0.218455	0.405479	1521.178	12.45874	0
Statewide Totals	2002	MCY	Aggregate	Aggregate	Gasoline	416160.3	2841545.875	2841546	0	832320.6	0	4.022184	0	0.288019	4.310203	0.021928	0	0.01228	0.034209	0.003132	0.013156	0.050496	0.023047	0	0.01289	0.035937	0.012529	0.037587	0.086053	703.3983	0	76.37036
Statewide Totals	2002	MDV	Aggregate	Aggregate	Gasoline	2503500	99070972.16	99070972	0	12135511	0	104.0692	0	22.50571	126.5749	0.701861	0	0.134047	0.835908	0.218414	0.329773	1.384095	0.759989	0	0.145086	0.905075	0.873657	0.942208	2.72094	58151.28	0	2065.801
Statewide Totals	2002	MDV	Aggregate	Aggregate	Diesel	9664.431	235730.7362	235730.7	0	39962.05	0	0.434675	0	0	0.434675	0.066684	0	0	0.066684	0.00052	0.000921	0.068126	0.0697	0	0	0.0697	0.002079	0.002633	0.074411	143.3651	0	0
Statewide Totals	2002	MH	Aggregate	Aggregate	Gasoline	227051.5	1913801.01	1913801	0	22714.24	0	5.945795	0	0.009671	5.955466	0.019916	0	9.55E-05	0.020012	0.006329	0.032653	0.058994	0.021339	0	0.000101	0.02144	0.025315	0.093294	0.140049	4145.641	0	1.44936
Statewide Totals	2002	MH	Aggregate	Aggregate	Diesel	14200.71	172641.0465	172641	0	1420.071	0	2.164174	0	0	2.164174	0.043367	0	0	0.043367	0.000761	0.002935	0.047063	0.045327	0	0	0.045327	0.003045	0.008385	0.056758	200.9391	0	0
Statewide Totals	2002	MHDT	Aggregate	Aggregate	Gasoline	76122.42	3188783.738	3188784	0	1523057	0	12.55231	0.006842	0.906563	13.46572	0.032	0	0.010671	0.042671	0.010545	0.054397	0.107614	0.034327	0	0.011272	0.045599	0.04218	0.155421	0.243201	6856.686	48.20816	149.9205
Statewide Totals	2002	MHDT	Aggregate	Aggregate	Diesel	176957.7	10213233.84	10213234	0	2108494	0	143.956	7.158377	0	151.1144	4.857484	0.198867	0	5.056351	0.033774	0.174658	5.264784	5.077118	0.207859	0	5.284977	0.135098	0.499024	5.919099	13409.24	446.4331	0
Statewide Totals	2002	OBUS	Aggregate	Aggregate	Gasoline	10751.77	613600.9181	613600.9	0	215121.4	0	2.172108	0.000733	0.11808	2.290922	0.002955	0	0.000629	0.003584	0.002029	0.010487	0.0161	0.003192	0	0.000667	0.003859	0.008117	0.029962	0.041938	1279.379	4.734768	11.76782
Statewide Totals	2002	OBUS	Aggregate	Aggregate	Diesel	9859.364	665936.5287	665936.5	0	123915.5	0	11.83558	0.564581	0	12.40016	0.437301	0.014828	0	0.452128	0.002202	0.017389	0.47172	0.457073	0.015498	0	0.472572	0.008809	0.049684	0.531065	1040.262	37.15424	0
Statewide Totals	2002	SBUS	Aggregate	Aggregate	Gasoline	4120.084	203794.9247	203794.9	0	16480.34	0	0.754312	0.003789	0.00919	0.767292	0.003893	0	0.000163	0.004056	0.000449	0.003583	0.008088	0.004135	0	0.000173	0.004308	0.001797	0.010237	0.016342	222.1093	12.52847	1.687416
Statewide Totals	2002	SBUS	Aggregate	Aggregate	Diesel	16459.23	473799.0797	473799.1	0	238329.7	0	6.941696	0.5988	0	7.540496	0.293805	0.019299	0	0.313104	0.001567	0.008335	0.323006	0.30709	0.020171	0	0.327261	0.006267	0.023814	0.357343	655.0768	37.88272	0
Statewide Totals	2002	UBUS	Aggregate	Aggregate	Gasoline	603.2843	55234.29009	55234.29	0	2413.137	0	0.102049	0	0.002576	0.104625	0.000175	0	3.71E-06	0.000179	0.000164	0.002217	0.002559	0.00019	0	4.03E-06	0.000194	0.000654	0.006334	0.007182	108.7473	0	0.292282
Statewide Totals	2002	UBUS	Aggregate	Aggregate	Diesel	7222.408	815977.5913	815977.6	0	28889.63	0	17.95269	0	0	17.95269	0.114108	0	0	0.114108	0.007089	0.034423	0.15562	0.119267	0	0	0.119267	0.028356	0.098352	0.245975	1678.352	0	0
Statewide Totals	2002	UBUS	Aggregate	Aggregate	Electricity	36.34456	1210.080964	0	1210.081	145.3782	2444.231	0	0	0	0	0	0	0	0	1.37E-06	8.79E-06	1.02E-05	0	0	0	0	5.48E-06	2.51E-05	3.06E-05	0	0	0
Statewide Totals	2002	UBUS	Aggregate	Aggregate	Natural Ga:	2980.783	368294.6983	368294.7	0	11923.13	0	5.779232	0	0	5.779232	0.007908	0	0	0.007908	0.003446	0.015617	0.026971	0.008266	0	0	0.008266	0.013784	0.044619	0.066669	752.2232	0	0
Statewide Totals	2003	HHDT	Aggregate	Aggregate	Gasoline	5777.528	363697.3589	363697.4	0	115596.8	0	5.947756	0	0.043974	5.99173	0.0037	0	0.001314	0.005014	0.002005	0.016029	0.023048	0.003933	0	0.00138	0.005313	0.008018	0.045798	0.059129	1050.65	0	17.91827
Statewide Totals	2003	HHDT	Aggregate	Aggregate	Diesel	197939.1	34527309.84	34527310	0	2825932	0	795.851	42.86918	0	838.7202	22.02822	0.81229	0	22.84051	0.33761	1.382531	24.56065	23.02424	0.849018	0	23.87326	1.350442	3.95009	29.17379	66471.27	2717.239	0
Statewide Totals	2003	HHDT	Aggregate	Aggregate	Natural Ga:	249.5935	20580.75208	20580.75	0	1148.13	0	0.718359	0.002777	0	0.721136	0.001145	1.15E-07	0	0.001145	0.000204	0.001667	0.003017	0.001245	1.25E-07	0	0.001246	0.000817	0.004764	0.006826	67.6419	2.034208	0
Statewide Totals	2003	LDA	Aggregate	Aggregate	Gasoline	13289987	475681261.1	4.76E+08	0	62230479	0	308.5092	0	67.77203	376.2812	3.995369	0	0.717325	4.712694	1.048698	1.416642	7.178034	4.333443	0	0.775782	5.109225	4.194794	4.047548	13.35157	187391.8	0	7655.406
Statewide Totals	2003	LDA	Aggregate	Aggregate	Diesel	87016.24	2046950.79	2046951	0	359391.1	0	3.748943	0	0	3.748943	0.531416	0	0	0.531416	0.004513	0.006307	0.542236	0.555444	0	0	0.555444	0.018051	0.018019	0.591515	787.5572	0	0
Statewide Totals	2003	LDA	Aggregate	Aggregate	Electricity	11625.39	372979.3147	0	372979.3	59050.27	144000.8	0	0	0	0	0	0	0	0	0.000822	0.000627	0.001449	0	0	0	0	0.003289	0.001792	0.005081	0	0	0
Statewide Totals	2003	LDT1	Aggregate	Aggregate	Gasoline	2113483	69150105.48	69150105	0	9563720	0	78.36982	0	12.81988	91.1897	0.808757	0	0.14296	0.951717	0.15245	0.245993	1.350161	0.87275	0	0.153857	1.026607	0.6098	0.702839	2.339246	31633.8	0	1431.776
Statewide Totals	2003	LDT1	Aggregate	Aggregate	Diesel	6105.64	151046.6433	151046.6	0	25181.53	0	0.268563	0	0	0.268563	0.038654	0	0	0.038654	0.000333	0.00059	0.039576	0.040401	0	0	0.040401	0.001332	0.001685	0.043418	73.98015	0	0
Statewide Totals	2003	LDT1	Aggregate	Aggregate	Electricity	1431.451	41386.72915	0	41386.73	7007.687	15978.69	0	0	0	0	0	0	0	0	9.12E-05	6.99E-05	0.000161	0	0	0	0	0.000365	0.0002	0.000565	0	0	0
Statewide Totals	2003	LDT2	Aggregate	Aggregate	Gasoline	4205849	156093679.6	1.56E+08	0	20045006	0	168.1114	0	39.63887	207.7503	1.156706	0	0.189993	1.346699	0.344128	0.536669	2.227496	1.253653	0	0.205657	1.45931	1.376512	1.533341	4.369163	84727.58	0	3180.091
Statewide Totals	2003	LDT2	Aggregate	Aggregate	Diesel	454.4636	11407.07603	11407.08	0	1876.335	0	0.020841	0	0	0.020841	0.002964	0	0	0.002964	2.51E-05	4.53E-05	0.003035	0.003098	0	0	0.003098	0.000101	0.000129	0.003329	6.136531	0	0
Statewide Totals	2003	LHDT1	Aggregate	Aggregate	Gasoline	578816.3	22781594.54	22781595	0	8623500	0	29.24376	0.025755	3.803179	33.0727	0.145099	0	0.016343	0.161441	0.050225	0.685569	0.897235	0.15743	0	0.017656	0.175085	0.200899	1.958768	2.334753	24605.53	80.29905	253.2252
Statewide Totals	2003	LHDT1	Aggregate	Aggregate	Diesel	239706	10498692	10498692	0	3015199	0	89.2198	0.685967	0	89.90577	0.664131	0.011606	0	0.675737	0.034718	0.315938	1.026394	0.69416	0.012131	0	0.706291	0.138874	0.902681	1.747845	6689.273	37.92544	0
Statewide Totals	2003	LHDT2	Aggregate	Aggregate	Gasoline	68228.9	2579277.939	2579278	0	1016509	0	3.310783	0.003041	0.465494	3.779318	0.016295	0	0.001934	0.018229	0.005686	0.090555	0.11447	0.017662	0	0.002086	0.019748	0.022745	0.258728	0.301221	3153.749	10.91816	33.72151
Statewide Totals	2003	LHDT2	Aggregate	Aggregate	Diesel	58854.67	2383111.297	2383111	0	740317.7	0	20.95253	0.168425	0	21.12095	0.156205	0.002734	0	0.158939	0.007881	0.083668	0.250488	0.163268	0.002858	0	0.166126	0.031523	0.239051	0.4367	1664.785	14.15262	0
Statewide Totals	2003	MCY	Aggregate	Aggregate	Gasoline	450619	3061168.678	3061169	0	901238	0	4.328436	0	0.310042	4.638478	0.021328	0	0.012193	0.033522	0.003374	0.014172	0.051068	0.022428	0	0.012803	0.035231	0.013497	0.040492	0.089221	748.2105	0	81.60482
Statewide Totals	2003	MDV	Aggregate	Aggregate	Gasoline	2891783	111625662.2	1.12E+08	0	14024281	0	105.5331	0	25.97159	131.5047	0.702812	0	0.138742	0.841554	0.246093	0.371769	1.459415	0.761376	0	0.15024	0.911616	0.984371	1.062198	2.958185	64871.51	0	2327.823
Statewide Totals	2003	MDV	Aggregate	Aggregate	Diesel	8920.203	205636.0276	205636	0	36433.82	0	0.378133	0	0	0.378133	0.057576	0	0	0.057576	0.000453	0.000811	0.05884	0.060179	0	0	0.060179	0.001813	0.002316	0.064308	124.801	0	0
Statewide Totals	2003	MH	Aggregate	Aggregate	Gasoline	224465.1	1856844.129	1856844	0	22455.49	0	5.270405	0	0.009623	5.280028	0.018064	0	9.06E-05	0.018154	0.00614	0.031674	0.055969	0.019352	0	9.6E-05	0.019448	0.024562	0.090498	0.134508	3965.614	0	1.387627
Statewide Totals	2003	MH	Aggregate	Aggregate	Diesel	17289.15	207174.1969	207174.2	0	1728.915	0	2.394869	0	0	2.394869	0.052006	0	0	0.052006	0.000913	0.00352	0.056439	0.054358	0	0	0.054358	0.003654	0.010056	0.068068	240.2136	0	0
Statewide Totals	2003	MHDT	Aggregate	Aggregate	Gasoline	78465.17	3199910.665	3199911	0	1569931	0	12.39708	0.007081	0.945128	13.34929	0.029631	0	0.010388	0.040018	0.010582	0.05457	0.10517	0.031807	0	0.010978	0.042784	0.042328	0.155914	0.241026	6787.839	49.15329	148.8638
Statewide Totals	2003	MHDT	Aggregate	Aggregate	Diesel	206041.2	9934236.5	9934237	0	2448737	0	135.8654	8.571561	0	144.4369	4.57667	0.216031	0	4.792701	0.032852	0.169888	4.995441	4.783607	0.225799	0	5.009406	0.131407	0.485395	5.626208	13009.84	527.9367	0
Statewide Totals	2003	OBUS	Aggregate	Aggregate	Gasoline	11072.58	620553.3367	620553.3	0	221540.2	0	2.099535	0.00076	0.11934	2.219635	0.002662	0	0.000592	0.003253	0.002052	0.010602	0.015908	0.002876	0	0.000628	0.003504	0.008209	0.030292	0.042004	1277.971	4.822847	11.60147
Statewide Totals	2003	OBUS	Aggregate	Aggregate	Diesel	9140.015	647743.8675	647743.9	0	113185.8	0	11.45333	0.506349	0	11.95968	0.441995	0.012903	0	0.454898	0.002142	0.016914	0.473954	0.46198	0.013486	0	0.475466	0.008568	0.048326	0.53236	1011.782	33.09027	0
Statewide Totals	2003	SBUS	Aggregate	Aggregate	Gasoline	4338.855	207877.8517	207877.9	0	17355.42	0	0.764328	0.004015	0.00988	0.778223	0.003724	0	0.000161	0.003884	0.000458	0.003655	0.007997	0.003958	0	0.00017	0.004128	0.001833	0.010442	0.016403	223.81	13.05236	1.754813
Statewide Totals	2003	SBUS	Aggregate	Aggregate	Diesel	16458.96	460818.5661	460818.6	0	238325.8	0	6.531383	0.618087	0	7.14947	0.275148	0.017986	0	0.293133	0.001524	0.008107	0.302764	0.287589	0.018799	0	0.306387	0.006096	0.023162	0.335645	635.1633	38.49724	0
Statewide Totals	2003	UBUS	Aggregate	Aggregate	Gasoline	598.2116	52382.42903	52382.43	0	2392.846	0	0.080052	0	0.002712	0.082764	0.000154	0	3.63E-06	0.000158	0.000154	0.002098	0.00241	0.000168	0	3.95E-06	0.000172	0.000618	0.005993	0.006783	100.8591	0	0.28734
Statewide Totals	2003	UBUS	Aggregate	Aggregate	Diesel	7371.129	802302.4538	802302.5	0	29484.52	0	17.40906	0	0	17.40906	0.10855	0	0	0.10855	0.006886	0.033827	0.149263	0.113458	0	0	0.113458	0.027546	0.096648	0.237652	1628.575	0	0
Statewide Totals	2003	UBUS	Aggregate	Aggregate	Electricity	34.62832	1080.683258	0	1080.683	138.5133	2193.564	0	0	0	0	0	0	0	0	9.03E-07	5.8E-06	6.7E-06	0	0	0	0	3.61E-06	1.66E-05	2.02E-05	0	0	0
Statewide Totals	2003	UBUS	Aggregate	Aggregate	Natural Ga:	3246.019	426714.5407	426714.5	0	12984.07	0	6.665509	0	0	6.665509	0.009104	0	0	0.009104	0.003961	0.018096	0.031161	0.009516	0	0	0.009516	0.015843	0.051702	0.077061	869.0972	0	0
Statewide Totals	2004	HHDT	Aggregate	Aggregate	Gasoline	5818.294	452435.0035	452435	0	116412.4	0	5.379481	0	0.038121	5.417602	0.003179	0	0.001199	0.004378	0.002494	0.019881	0.026753	0.003379	0	0.00126	0.004639	0.009974	0.056802	0.071415	1266.101	0	17.05778
Statewide Totals	2004	HHDT	Aggregate	Aggregate	Diesel	206852.9	36874324.39	36874324	0	2992787	0	803.3157	48.23825	0	851.5539	23.74439	0.832728	0	24.57712	0.360558	1.476326	26.414	24.818	0.87038	0	25.68839	1.442232	4.218073	31.34869	70839.11	3018.428	0
Statewide Totals	2004	HHDT	Aggregate	Aggregate	Natural Ga:	295.5182	25983.70941	25983.71	0	1359.384	0	0.866126	0.003288	0	0.869414	0.001591	1.36E-07	0	0.001591	0.000258	0.002105	0.003954	0.001731	1.48E-07	0	0.001731	0.001031	0.006015	0.008777	84.91861	2.408612	0
Statewide Totals	2004	LDA	Aggregate	Aggregate	Gasoline	13615726	474894518.6	4.75E+08	0	63711787	0	276.281	0	63.66231	339.9433	3.493194	0	0.657976	4.15117	1.046964	1.41533	6.613464	3.788767	0	0.711524	4.50029	4.187856	4.0438	12.73195	186154.7	0	7661.005
Statewide Totals	2004	LDA	Aggregate	Aggregate	Diesel	83595.53	1894903.019	1894903	0	343401.1	0	3.474424	0	0	3.474424	0.464222	0	0	0.464222	0.004178	0.005825	0.474225	0.485212	0	0	0.485212	0.01671	0.016644	0.518566	719.9765	0	0
Statewide Totals	2004	LDA	Aggregate	Aggregate	Electricity	9437.108	284745.8628	0	284745.9	47365.81	109935.4	0	0	0	0	0	0	0	0	0.000628	0.00048	0.001107	0	0	0	0	0.002511	0.00137	0.003881	0	0	0
Statewide Totals	2004	LDT1	Aggregate	Aggregate	Gasoline	2016967	63407313.17	63407313	0	9072282	0	68.11512	0	11.5441	79.65922	0.703005	0	0.129148	0.832154	0.139789	0.227393	1.199336	0.758603	0	0.138996	0.897599	0.559157	0.649695	2.106451	28867.72	0	1339.91
Statewide Totals	2004	LDT1	Aggregate	Aggregate	Diesel	5953.364	143742.3549	143742.4	0	24445.31	0	0.257075	0	0	0.257075	0.034852	0	0	0.034852	0.000317	0.000558	0.035727	0.036428	0	0	0.036428	0.001268	0.001593	0.039289	71.4847	0	0
Statewide Totals	2004	LDT1	Aggregate	Aggregate	Electricity	1417.124	38509.13788	0	38509.14	6854.584	14867.71	0	0	0	0	0	0	0	0	8.49E-05	6.51E-05	0.00015	0	0	0	0	0.00034	0.000186	0.000526	0	0	0
Statewide Totals	2004	LDT2	Aggregate	Aggregate	Gasoline	4427127	160266368.7	1.6E+08	0	21093497	0	152.5263	0	37.57583	190.1021	1.026122	0	0.176329	1.202451	0.353327	0.551413	2.107191	1.11211	0	0.19087	1.30298	1.413309	1.575465	4.291754	85796.97	0	3255.371
Statewide Totals	2004	LDT2	Aggregate	Aggregate	Diesel	390.4778	9447.348409	9447.348	0	1602.857	0	0.017348	0	0	0.017348	0.002363	0	0	0.002363	2.08E-05	3.73E-05	0.002422	0.00247	0	0	0.00247	8.33E-05	0.000107	0.00266	5.050497	0	0
Statewide Totals	2004	LHDT1	Aggregate	Aggregate	Gasoline	607165.5	23030737.29	23030737	0	9045861	0	27.2305	0.02714	4.296216	31.55386	0.132833	0	0.015742	0.148576	0.050774	0.693066	0.892416	0.144144	0	0.017015	0.161159	0.203096	1.980189	2.344445	24696.07	83.83328	261.3094
Statewide Totals	2004	LHDT1	Aggregate	Aggregate	Diesel	276406.6	11937413.03	11937413	0	3476848	0	92.28421	0.790994	0	93.0752	0.900884	0.01238	0	0.913264	0.039476	0.359234	1.311974	0.941618	0.012939	0	0.954557	0.157905	1.026382	2.138844	7380.64	43.73159	0
Statewide Totals	2004	LHDT2	Aggregate	Aggregate	Gasoline	70691.28	2682148.315	2682148	0	1053195	0	2.829744	0.003179	0.52538	3.358303	0.013763	0	0.001714	0.015476	0.005913	0.094167	0.115556	0.01492	0	0.001849	0.016769	0.023652	0.269047	0.309468	3246.776	11.26096	34.05347
Statewide Totals	2004	LHDT2	Aggregate	Aggregate	Diesel	62756.82	2495419.159	2495419	0	789401.8	0	20.48987	0.179591	0	20.66946	0.181321	0.002701	0	0.184021	0.008252	0.087611	0.279884	0.189519	0.002823	0	0.192342	0.033009	0.250316	0.475667	1763.712	15.23825	0
Statewide Totals	2004	MCY	Aggregate	Aggregate	Gasoline	484767.7	3159800.327	3159800	0	969535.4	0	4.465785	0	0.334193	4.799978	0.019236	0	0.011968	0.031204	0.003483	0.014629	0.049316	0.020228	0	0.012567	0.032795	0.013932	0.041797	0.088524	769.1298	0	87.44255
Statewide Totals	2004	MDV	Aggregate	Aggregate	Gasoline	3283879	123679954.8	1.24E+08	0	15928992	0	102.0781	0	26.48778	128.5658	0.652592	0	0.134075	0.786666	0.272668	0.412214	1.471548	0.7071	0	0.145217	0.852317	1.090671	1.177754	3.120742	71952.31	0	2589.369
Statewide Totals	2004	MDV	Aggregate	Aggregate	Diesel	8946.073	207853.2576	207853.3	0	36680.17	0	0.383216	0	0	0.383216	0.05238	0	0	0.05238	0.000458	0.000798	0.053636	0.054748	0	0	0.054748	0.001833	0.00228	0.058862	125.6155	0	0
Statewide Totals	2004	MH	Aggregate	Aggregate	Gasoline	218037.6	1793127.45	1793127	0	21812.48	0	4.561727	0	0.009264	4.570991	0.01559	0	8.07E-05	0.01567	0.00593	0.030578	0.052178	0.016708	0	8.56E-05	0.016793	0.023719	0.087366	0.127878	3794.515	0	1.287688
Statewide Totals	2004	MH	Aggregate	Aggregate	Diesel	20131.82	239701.9995	239702	0	2013.182	0	2.509636	0	0	2.509636	0.060173	0	0	0.060173	0.001057	0.004071	0.065301	0.062894	0	0	0.062894	0.004228	0.011631	0.078752	276.8192	0	0
Statewide Totals	2004	MHDT	Aggregate	Aggregate	Gasoline	77286.97	3196700.522	3196701	0	1546358	0	11.21472	0.007025	0.929657	12.15141	0.025218	0	0.00935	0.034567	0.010571	0.054488	0.099627	0.027079	0	0.009883	0.036963	0.042285	0.155681	0.234928	6713.625	48.19531	140.4647
Statewide Totals	2004	MHDT	Aggregate	Aggregate	Diesel	219426.4	10610215.86	10610216	0	2616773	0	138.5121	9.351973	0	147.8641	4.752809	0.214158	0	4.966967	0.035087	0.181448	5.183503	4.96771	0.223841	0	5.191551	0.140349	0.518424	5.850324	13857.97	568.572	0
Statewide Totals	2004	OBUS	Aggregate	Aggregate	Gasoline	11980.39	660340.4799	660340.5	0	239703.6	0	2.004702	0.000828	0.127628	2.133158	0.002352	0	0.000547	0.002899	0.002184	0.011281	0.016364	0.002542	0	0.00058	0.003122	0.008735	0.032233	0.04409	1349.084	5.193092	11.99533
Statewide Totals	2004	OBUS	Aggregate	Aggregate	Diesel	9397.588	691799.5872	691799.6	0	117803.2	0	11.91644	0.541887	0	12.45833	0.466624	0.013437	0	0.480061	0.002288	0.018065	0.500413	0.487723	0.014044	0	0.501767	0.009151	0.051613	0.562532	1078.219	35.32307	0

Statewide Totals	2004	SBUS	Aggregate	Aggregate	Gasoline	4348.926	202876.9503	202877	0	17395.7	0	0.737385	0.00405	0.010227	0.751662	0.003305	0	0.000145	0.00345	0.000447	0.003567	0.007464	0.003516	0	0.000154	0.003671	0.001789	0.010191	0.015651	216.916	13.02201	1.727194
Statewide Totals	2004	SBUS	Aggregate	Aggregate	Diesel	16459.3	492190.4981	492190.5	0	238330.6	0	6.787931	0.63467	0	7.422601	0.285738	0.01676	0	0.302498	0.001628	0.008659	0.312784	0.298658	0.017518	0	0.316176	0.006511	0.024739	0.347425	676.7804	39.02563	0
Statewide Totals	2004	UBUS	Aggregate	Aggregate	Gasoline	602.6843	54821.68038	54821.68	0	2410.737	0	0.065102	0	0.002844	0.067945	0.000143	0	3.39E-06	0.000146	0.000161	0.002192	0.002499	0.000155	0	3.68E-06	0.000159	0.000644	0.006263	0.007066	104.8345	0	0.283638
Statewide Totals	2004	UBUS	Aggregate	Aggregate	Diesel	6995.205	730202.4561	730202.5	0	27980.82	0	15.25906	0	0	15.25906	0.094346	0	0	0.094346	0.006225	0.03077	0.131341	0.098612	0	0	0.098612	0.0249	0.087914	0.211426	1465.763	0	0
Statewide Totals	2004	UBUS	Aggregate	Aggregate	Electricity	25.63835	818.296866	0	818.2969	102.5534	1697.938	0	0	0	0	0	0	0	0	5.13E-08	3.29E-07	3.8E-07	0	0	0	0	2.05E-07	9.4E-07	1.14E-06	0	0	0
Statewide Totals	2004	UBUS	Aggregate	Aggregate	Natural Ga:	3594.274	441214.8687	441214.9	0	14377.1	0	6.720046	0	0	6.720046	0.009255	0	0	0.009255	0.004008	0.018694	0.031958	0.009674	0	0	0.009674	0.016032	0.053412	0.079118	878.955	0	0
Statewide Totals	2005	HHDT	Aggregate	Aggregate	Gasoline	4808.775	318625.8994	318625.9	0	96213.98	0	4.01196	0	0.027169	4.039129	0.002547	0	0.001062	0.003609	0.001756	0.013996	0.019361	0.002703	0	0.001115	0.003818	0.007024	0.039988	0.050831	897.404	0	14.59496
Statewide Totals	2005	HHDT	Aggregate	Aggregate	Diesel	217552.4	38447310.61	38447311	0	3192910	0	776.0828	47.72257	0	823.8054	24.4732	0.679578	0	25.15278	0.375934	1.538858	27.06758	25.57977	0.710306	0	26.29008	1.503738	4.396737	32.19056	73616.87	2916.564	0
Statewide Totals	2005	HHDT	Aggregate	Aggregate	Natural Ga:	420.8384	37835.62276	37835.62	0	1935.857	0	1.192035	0.004682	0	1.196717	0.002598	1.94E-07	0	0.002598	0.000375	0.003065	0.006039	0.002826	2.11E-07	0	0.002826	0.001501	0.008758	0.013086	124.5293	3.440655	0
Statewide Totals	2005	LDA	Aggregate	Aggregate	Gasoline	13394011	468748489.1	4.69E+08	0	62846346	0	240.6155	0	58.3936	299.0091	2.878759	0	0.555559	3.434318	1.033414	1.394487	5.862219	3.122092	0	0.600579	3.722671	4.133657	3.984249	11.84058	182829.3	0	7344.35
Statewide Totals	2005	LDA	Aggregate	Aggregate	Diesel	74345.26	1652198.049	1652198	0	303776.9	0	3.024621	0	0	3.024621	0.380996	0	0	0.380996	0.003642	0.005071	0.389709	0.398223	0	0	0.398223	0.01457	0.014487	0.42728	620.1757	0	0
Statewide Totals	2005	LDA	Aggregate	Aggregate	Electricity	8238.328	239658.8281	0	239658.8	40947.22	92528.09	0	0	0	0	0	0	0	0	0.000528	0.000404	0.000933	0	0	0	0	0.002113	0.001155	0.003268	0	0	0
Statewide Totals	2005	LDT1	Aggregate	Aggregate	Gasoline	1930843	59325460.71	59325461	0	8632924	0	61.60549	0	10.74778	72.35327	0.623751	0	0.11591	0.739661	0.13079	0.215115	1.085567	0.673321	0	0.124805	0.798127	0.523161	0.614615	1.935903	26909.24	0	1258.372
Statewide Totals	2005	LDT1	Aggregate	Aggregate	Diesel	5228.779	120506.8992	120506.9	0	21131.52	0	0.215556	0	0	0.215556	0.029624	0	0	0.029624	0.000266	0.000475	0.030365	0.030963	0	0	0.030963	0.001063	0.001357	0.033384	59.87366	0	0
Statewide Totals	2005	LDT1	Aggregate	Aggregate	Electricity	1328.513	34659.99812	0	34660	6353.682	13381.62	0	0	0	0	0	0	0	0	7.64E-05	5.87E-05	0.000135	0	0	0	0	0.000306	0.000168	0.000473	0	0	0
Statewide Totals	2005	LDT2	Aggregate	Aggregate	Gasoline	4491068	162347131.8	1.62E+08	0	21437527	0	134.9101	0	34.88421	169.7943	0.86089	0	0.152757	1.013647	0.357914	0.557294	1.928855	0.932957	0	0.165348	1.098306	1.431658	1.592268	4.122231	85713.95	0	3205.985
Statewide Totals	2005	LDT2	Aggregate	Aggregate	Diesel	445.2654	10312.75707	10312.76	0	1786.747	0	0.019422	0	0	0.019422	0.002697	0	0	0.002697	2.27E-05	4.04E-05	0.00276	0.002818	0	0	0.002818	9.09E-05	0.000115	0.003025	5.504677	0	0
Statewide Totals	2005	LHDT1	Aggregate	Aggregate	Gasoline	620510.7	23097033.66	23097034	0	9244685	0	24.41922	0.027895	4.822907	29.27002	0.118586	0	0.014507	0.133093	0.05092	0.695061	0.879074	0.12869	0	0.015683	0.144373	0.203681	1.985889	2.333943	24663.06	85.52984	262.6382
Statewide Totals	2005	LHDT1	Aggregate	Aggregate	Diesel	315560.9	13553206.11	13553206	0	3969359	0	97.19676	0.903042	0	98.0998	1.143084	0.013047	0	1.156131	0.04482	0.407858	1.608808	1.194769	0.013637	0	1.208406	0.179278	1.165308	2.552993	8175.428	49.925	0
Statewide Totals	2005	LHDT2	Aggregate	Aggregate	Gasoline	69375.39	2578085.367	2578085	0	1033590	0	2.443739	0.003138	0.5668	3.013677	0.011409	0	0.001387	0.012796	0.005684	0.090513	0.108993	0.012385	0	0.001501	0.013886	0.022735	0.258609	0.295229	3099.92	11.03199	32.45836
Statewide Totals	2005	LHDT2	Aggregate	Aggregate	Diesel	73098.11	3017402.055	3017402	0	919482.2	0	22.08359	0.209185	0	22.29278	0.252053	0.002848	0	0.2549	0.009978	0.105937	0.370815	0.263449	0.002976	0	0.266425	0.039913	0.302677	0.609015	2168.241	17.96013	0
Statewide Totals	2005	MCY	Aggregate	Aggregate	Gasoline	521242.2	3475531.331	3475531	0	1042484	0	4.911791	0	0.360706	5.272498	0.016631	0	0.011015	0.027645	0.003831	0.016091	0.047567	0.017488	0	0.011567	0.029055	0.015324	0.045973	0.090353	844.9737	0	94.03516
Statewide Totals	2005	MDV	Aggregate	Aggregate	Gasoline	3595368	134621831.3	1.35E+08	0	17444545	0	97.93499	0	26.69739	124.6324	0.586152	0	0.123	0.709152	0.296791	0.448708	1.45465	0.635187	0	0.133238	0.768425	1.187162	1.282022	3.237609	78322.38	0	2780.229
Statewide Totals	2005	MDV	Aggregate	Aggregate	Diesel	7291.746	154525.6066	154525.6	0	29090.55	0	0.283842	0	0	0.283842	0.042157	0	0	0.042157	0.000341	0.000612	0.04311	0.044063	0	0	0.044063	0.001363	0.001748	0.047174	94.02126	0	0
Statewide Totals	2005	MH	Aggregate	Aggregate	Gasoline	207866.8	1738979.863	1738980	0	20794.99	0	3.87634	0	0.008886	3.885226	0.013299	0	7.02E-05	0.013369	0.005751	0.029641	0.04876	0.014253	0	7.44E-05	0.014327	0.023003	0.084689	0.122019	3655.809	0	1.178753
Statewide Totals	2005	MH	Aggregate	Aggregate	Diesel	22902.04	272567.7633	272567.8	0	2290.204	0	2.622763	0	0	2.622763	0.069479	0	0	0.069479	0.001202	0.004624	0.075306	0.072621	0	0	0.072621	0.004807	0.013212	0.09064	313.5958	0	0
Statewide Totals	2005	MHDT	Aggregate	Aggregate	Gasoline	72554.07	2904528.692	2904529	0	1451662	0	10.35566	0.006607	0.893454	11.25572	0.022029	0	0.008476	0.030505	0.009605	0.049486	0.089596	0.02366	0	0.008962	0.032622	0.03842	0.141387	0.212429	6077.579	45.15266	130.4475
Statewide Totals	2005	MHDT	Aggregate	Aggregate	Diesel	235520.8	11066970.65	11066971	0	2822446	0	136.9459	10.30492	0	147.2508	4.783665	0.209792	0	4.993458	0.036598	0.189258	5.219314	4.999962	0.219278	0	5.21924	0.146391	0.540738	5.906369	14408.19	617.5754	0
Statewide Totals	2005	OBUS	Aggregate	Aggregate	Gasoline	12838.14	724636.6963	724636.7	0	256865.5	0	1.890158	0.000895	0.135428	2.026481	0.002031	0	0.000469	0.0025	0.002396	0.012377	0.017273	0.002197	0	0.000498	0.002694	0.009585	0.035363	0.047642	1473.471	5.55487	12.21355
Statewide Totals	2005	OBUS	Aggregate	Aggregate	Diesel	9192.611	721460.1738	721460.2	0	111238.3	0	12.10358	0.50194	0	12.60552	0.464224	0.010026	0	0.47425	0.002386	0.018839	0.495475	0.485214	0.010479	0	0.495694	0.009543	0.053827	0.559064	1120.401	31.54907	0
Statewide Totals	2005	SBUS	Aggregate	Aggregate	Gasoline	4142.529	192454.9224	192454.9	0	16570.12	0	0.681471	0.003881	0.010048	0.6954	0.002897	0	0.000127	0.003024	0.000424	0.003385	0.006834	0.003085	0	0.000135	0.00322	0.001697	0.009672	0.014589	205.1103	12.38291	1.619163
Statewide Totals	2005	SBUS	Aggregate	Aggregate	Diesel	16459.09	513303.2432	513303.2	0	238327.7	0	6.843143	0.651233	0	7.494376	0.289055	0.015522	0	0.304578	0.001697	0.00903	0.315305	0.302125	0.016224	0	0.318349	0.00679	0.0258	0.350939	703.8667	39.55244	0
Statewide Totals	2005	UBUS	Aggregate	Aggregate	Gasoline	642.3214	55197.70824	55197.71	0	2569.286	0	0.061867	0	0.003098	0.064965	0.000124	0	2.96E-06	0.000127	0.000164	0.002222	0.002513	0.000135	0	3.22E-06	0.000138	0.000657	0.006347	0.007143	109.2083	0	0.294238
Statewide Totals	2005	UBUS	Aggregate	Aggregate	Diesel	6459.215	688273.8208	688273.8	0	25836.86	0	13.59331	0	0	13.59331	0.081423	0	0	0.081423	0.005765	0.029001	0.11619	0.085105	0	0	0.085105	0.023061	0.08286	0.191027	1349.72	0	0
Statewide Totals	2005	UBUS	Aggregate	Aggregate	Electricity	29.72736	1096.062561	0	1096.063	118.9095	2181.217	0	0	0	0	0	0	0	0	2.42E-08	1.55E-07	1.79E-07	0	0	0	0	9.68E-08	4.44E-07	5.4E-07	0	0	0
Statewide Totals	2005	UBUS	Aggregate	Aggregate	Natural Ga:	4279.729	540803.9361	540803.9	0	17118.92	0	8.341544	0	0	8.341544	0.011164	0	0	0.011164	0.004952	0.022915	0.039031	0.011669	0	0	0.011669	0.019809	0.065472	0.09695	1090.032	0	0
Statewide Totals	2006	HHDT	Aggregate	Aggregate	Gasoline	4608.996	303226.8129	303226.8	0	92216.79	0	3.46663	0	0.025046	3.491676	0.002213	0	0.001008	0.003222	0.001671	0.013316	0.018209	0.002346	0	0.001059	0.003405	0.006685	0.038047	0.048137	854.9104	0	14.01359
Statewide Totals	2006	HHDT	Aggregate	Aggregate	Diesel	236178.9	38564195.3	38564195	0	3491086	0	747.6779	52.63495	0	800.3128	24.75724	0.698237	0	25.45548	0.377077	1.542938	27.3755	25.87666	0.729809	0	26.60646	1.508306	4.408395	32.52317	73656.7	3196.741	0
Statewide Totals	2006	HHDT	Aggregate	Aggregate	Natural Ga:	656.54	52969.59614	52969.6	0	3020.084	0	1.625629	0.007305	0	1.632934	0.003666	3.02E-07	0	0.003666	0.000526	0.004292	0.008483	0.003987	3.29E-07	0	0.003987	0.002102	0.012262	0.018351	173.0048	5.365912	0
Statewide Totals	2006	LDA	Aggregate	Aggregate	Gasoline	13511187	461129254	4.61E+08	0	63396761	0	212.3303	0	54.89311	267.2234	2.428346	0	0.494222	2.922568	1.016617	1.37073	5.309915	2.633424	0	0.53414	3.167564	4.066467	3.916372	11.1504	180567.9	0	7291.362
Statewide Totals	2006	LDA	Aggregate	Aggregate	Diesel	69780.35	1497632.152	1497632	0	283951.4	0	2.744095	0	0	2.744095	0.323121	0	0	0.323121	0.003302	0.004588	0.331011	0.337731	0	0	0.337731	0.013207	0.013109	0.364047	554.7271	0	0
Statewide Totals	2006	LDA	Aggregate	Aggregate	Electricity	8755.428	242542.51	0	242542.5	43198.18	93641.43	0	0	0	0	0	0	0	0	0.000535	0.000409	0.000944	0	0	0	0	0.002139	0.00117	0.003309	0	0	0
Statewide Totals	2006	LDT1	Aggregate	Aggregate	Gasoline	1884732	55555554.12	55555554	0	8375969	0	55.66839	0	10.16217	65.83056	0.553193	0	0.106474	0.659667	0.122479	0.202968	0.985114	0.597309	0	0.114686	0.711995	0.489917	0.579908	1.78182	25280.97	0	1213.716
Statewide Totals	2006	LDT1	Aggregate	Aggregate	Diesel	4974.919	109930.8979	109930.9	0	19903.53	0	0.197112	0	0	0.197112	0.026457	0	0	0.026457	0.000242	0.000433	0.027132	0.027653	0	0	0.027653	0.000969	0.001239	0.029861	54.96163	0	0
Statewide Totals	2006	LDT1	Aggregate	Aggregate	Electricity	1367.354	33810.00498	0	33810	6482.963	13053.45	0	0	0	0	0	0	0	0	7.45E-05	5.73E-05	0.000132	0	0	0	0	0.000298	0.000164	0.000462	0	0	0
Statewide Totals	2006	LDT2	Aggregate	Aggregate	Gasoline	4533327	158512879.8	1.59E+08	0	21589220	0	120.2534	0	32.98824	153.2416	0.735378	0	0.137323	0.872702	0.349461	0.545795	1.767958	0.796907	0	0.148644	0.945551	1.397845	1.559413	3.902809	83363.58	0	3179.959
Statewide Totals	2006	LDT2	Aggregate	Aggregate	Diesel	429.9577	9683.788529	9683.789	0	1716.645	0	0.01832	0	0	0.01832	0.002427	0	0	0.002427	2.13E-05	3.74E-05	0.002486	0.002537	0	0	0.002537	8.54E-05	0.000107	0.002729	5.12421	0	0
Statewide Totals	2006	LHDT1	Aggregate	Aggregate	Gasoline	646163.8	23699467.76	23699468	0	9626879	0	21.75763	0.029203	5.486587	27.27342	0.10423	0	0.013404	0.117634	0.052248	0.71319	0.883073	0.113119	0	0.014493	0.127612	0.208994	2.037687	2.374292	25342.74	89.49816	271.2513
Statewide Totals	2006	LHDT1	Aggregate	Aggregate	Diesel	347543	14428796.27	14428796	0	4371654	0	97.84933	0.994565	0	98.84389	1.31404	0.013543	0	1.327583	0.047715	0.434207	1.809505	1.373455	0.014156	0	1.387611	0.19086	1.240592	2.819063	8555.316	54.96179	0
Statewide Totals	2006	LHDT2	Aggregate	Aggregate	Gasoline	73438.77	2665505.063	2665505	0	1094128	0	2.238848	0.003337	0.654008	2.896192	0.01003	0	0.001231	0.011262	0.005876	0.093582	0.11072	0.010898	0	0.001336	0.012234	0.023506	0.267378	0.303117	3210.589	11.7338	33.95019
Statewide Totals	2006	LHDT2	Aggregate	Aggregate	Diesel	86133.46	3520025.137	3520025	0	1083451	0	23.59727	0.246488	0	23.84376	0.324636	0.003171	0	0.327807	0.01164	0.123583	0.46303	0.339314	0.003315	0	0.342629	0.046562	0.353095	0.742285	2555.567	21.3009	0
Statewide Totals	2006	MCY	Aggregate	Aggregate	Gasoline	577961.5	3831198.69	3831199	0	1155923	0	5.413364	0	0.401438	5.814802	0.014802	0	0.010609	0.025411	0.004223	0.017737	0.047372	0.015565	0	0.011141	0.026706	0.016893	0.050678	0.094277	936.5272	0	104.9518
Statewide Totals	2006	MDV	Aggregate	Aggregate	Gasoline	3877142	140864675.8	1.41E+08	0	18792446	0	90.86469	0	26.33786	117.2026	0.517938	0	0.11326	0.631199	0.310554	0.471014	1.412766	0.561298	0	0.122696	0.683994	1.242215	1.345754	3.271963	82326.66	0	2957.298
Statewide Totals	2006	MDV	Aggregate	Aggregate	Diesel	6557.105	132524.4863	132524.5	0	25870.02	0	0.242997	0	0	0.242997	0.035528	0	0	0.035528	0.000292	0.000526	0.036346	0.037134	0	0	0.037134	0.001169	0.001503	0.039806	80.5883	0	0
Statewide Totals	2006	MH	Aggregate	Aggregate	Gasoline	199565.1	1650180.043	1650180	0	19964.5	0	3.272873	0	0.008515	3.281388	0.011234	0	6.16E-05	0.011295	0.005457	0.028116	0.044868	0.012042	0	6.53E-05	0.012107	0.021828	0.080332	0.114267	3472.437	0	1.096247
Statewide Totals	2006	MH	Aggregate	Aggregate	Diesel	26197.3	303886.0478	303886	0	2619.73	0	2.722077	0	0	2.722077	0.078627	0	0	0.078627	0.00134	0.005152	0.085118	0.082182	0	0	0.082182	0.00536	0.014719	0.102261	348.4842	0	0
Statewide Totals	2006	MHDT	Aggregate	Aggregate	Gasoline	70568.01	2764015.664	2764016	0	1411925	0	9.319704	0.006453	0.876945	10.2031	0.018987	0	0.007738	0.026725	0.00914	0.047073	0.082939	0.020396	0	0.008184	0.02858	0.036562	0.134495	0.199636	5793.583	44.12533	124.5965
Statewide Totals	2006	MHDT	Aggregate	Aggregate	Diesel	255032.2	11105569.94	11105570	0	3066526	0	131.1454	11.36856	0	142.5139	4.730276	0.214028	0	4.944304	0.036725	0.189919	5.170948	4.944158	0.223706	0	5.167864	0.146902	0.542626	5.857391	14429.04	674.4935	0
Statewide Totals	2006	OBUS	Aggregate	Aggregate	Gasoline	15108.3	854081.2472	854081.2	0	302286.9	0	1.788233	0.001061	0.156512	1.945806	0.001793	0	0.000432	0.002224	0.002824	0.014588	0.019637	0.001939	0	0.000458	0.002397	0.011298	0.041681	0.055376	1739.768	6.568172	13.66381
Statewide Totals	2006	OBUS	Aggregate	Aggregate	Diesel	10617.57	723977.2069	723977.2	0	127282.3	0	11.69892	0.576404	0	12.27533	0.453623	0.010337	0	0.46396	0.002394	0.018905	0.485259	0.474134	0.010805	0	0.484939	0.009577	0.054014	0.548529	1121.803	35.64241	0
Statewide Totals	2006	SBUS	Aggregate	Aggregate	Gasoline	4208.932	191324.6062	191324.6	0	16835.73	0	0.664017	0.003958	0.010391	0.678366	0.002637	0	0.000117	0.002755	0.000422	0.003364	0.006541	0.002811	0	0.000125	0.002935	0.001687	0.009612	0.014235	204.3882	12.64111	1.620639
Statewide Totals	2006	SBUS	Aggregate	Aggregate	Diesel	17292	515072.6667	515072.7	0	250388.2	0	7.020514	0.665188	0	7.685703	0.316667	0.017219	0	0.333886	0.001703	0.009061	0.34465	0.330985	0.017997	0	0.348983	0.006813	0.025889	0.381685	707.5366	40.9556	0
Statewide Totals	2006	UBUS	Aggregate	Aggregate	Gasoline	735.4611	62330.25047	62330.25	0	2941.844	0	0.077782	0	0.003464	0.081247	0.000104	0	2.76E-06	0.000107	0.000172	0.00242	0.002699	0.000113	0	3E-06	0.000116	0.000689	0.006915	0.00772	107.3465	0	0.32069
Statewide Totals	2006	UBUS	Aggregate	Aggregate	Diesel	6397.437	682942.2362	682942.2	0	25589.75	0	12.78854	0	0	12.78854	0.076413	0	0	0.076413	0.005428	0.028572	0.110412	0.079868	0	0	0.079868	0.021711	0.081634	0.183212	1279.729	0	0
Statewide Totals	2006	UBUS	Aggregate	Aggregate	Electricity	24.7913	794.6163719	0	794.6164	99.16521	1651.408	0	0	0	0	0	0	0	0	2.53E-08	1.62E-07	1.87E-07	0	0	0	0	1.01E-07	4.63E-07	5.64E-07	0	0	0
Statewide Totals	2006	UBUS	Aggregate	Aggregate	Natural Ga:	4734.336	596085.0878	596085.1	0	18937.34	0	9.112158	0	0	9.112158	0.01182	0	0	0.01182	0.005463	0.025266	0.042549	0.012355	0	0	0.012355	0.021851	0.072188	0.106394	1192.843	0	0
Statewide Totals	2007	HHDT	Aggregate	Aggregate	Gasoline	4233.962	288841.7817	288841.8	0	84713.1	0	2.951659	0	0.022349	2.974009	0.001862	0	0.000899	0.002762	0.001592	0.012697	0.017051	0.001973	0	0.000944	0.002918	0.006368	0.036278	0.045564	814.1308	0	12.75914
Statewide Totals	2007	HHDT	Aggregate	Aggregate	Diesel	239155.3	39869283.89	39869284	0	3518917	0	739.5948	53.06293	0	792.6577	24.27242	0.640918	0	24.91333	0.38984	1.594736	26.89791	25.36991	0.669898	0	26.0398	1.559358	4.556389	32.15555	76092.99	3235.109	0
Statewide Totals	2007	HHDT	Aggregate	Aggregate	Natural Ga:	816.3354	66161.37327	66161.37	0	3823.945	0	1.648237	0.009009	0	1.657246	0.003711	5.62E-07	0	0.003711	0.000656	0.005335	0.009703	0.004036	6.11E-07	0	0.004036	0.002625	0.015242	0.021904	195.994	6.662957	0
Statewide Totals	2007	LDA	Aggregate	Aggregate	Gasoline	13518233	456342218.9	4.56E+08	0	63474358	0	186.2944	0	51.02871	237.3231	2.038627	0	0.43131	2.469937	1.006063	1.355885	4.831886	2.210742	0	0.466081	2.676823	4.024252	3.873958	10.57503	179133.2	0	7171.297
Statewide Totals	2007	LDA	Aggregate	Aggregate	Diesel	65283.12	1377988.644	1377989	0	264941.6	0	2.528299	0	0	2.528299	0.265306	0	0	0.265306	0.003038	0.004218	0.272562	0.277302	0	0	0.277302	0.012152	0.012052	0.301505	503.4225	0	0
Statewide Totals	2007	LDA	Aggregate	Aggregate	Electricity	9832.034	266183.0503	0	266183.1	48352.06	102768.6	0	0	0	0	0	0	0	0	0.000587	0.000449	0.001036	0	0	0	0	0.002347	0.001284	0.003632	0	0	0
Statewide Totals	2007	LDT1	Aggregate	Aggregate	Gasoline	1808197	52115470.46	52115470	0	8004644	0	49.31774	0	9.352181	58.66992	0.482138	0	0.095152	0.57729	0.114895	0.191057	0.883242	0.520689	0	0.102521	0.62321	0.45958	0.545878	1.628669	23787.64	0	1149.113
Statewide Totals	2007	LDT1	Aggregate	Aggregate	Diesel	4657.36	100719.7071	100719.7	0	18504.37	0	0.181436	0	0	0.181436	0.022467	0	0	0.022467	0.000222	0.000396	0.023085	0.023483	0	0	0.023483	0.000888	0.00113	0.025501	50.88384	0	0
Statewide Totals	2007	LDT1	Aggregate	Aggregate	Electricity	1182.629	28259.73327	0	28259.73	5565.191	10910.59	0	0	0	0	0	0	0	0	6.23E-05	4.79E-05	0.00011	0	0	0	0	0.000249	0.000137	0.000386	0	0	0
Statewide Totals	2007	LDT2	Aggregate	Aggregate	Gasoline	4605095	158249117.2	1.58E+08	0	21902433	0	107.4758	0	30.99904	138.4749	0.633085	0	0.122711	0.755797	0.34888	0.545819	1.650496	0.686053	0	0.132833	0.818886	1.395519	1.559483	3.773889	82922.98	0	3171.768
Statewide Totals	2007	LDT2	Aggregate	Aggregate	Diesel	439.2306	9797.804808	9797.805	0	1746.143	0	0.018663	0	0	0.018663	0.002291	0	0	0.002291	2.16E-05	3.75E-05	0.00235	0.002395	0	0	0.002395	8.64E-05	0.000107	0.002588	5.12796	0	0

Statewide Totals	2007	LHDT1	Aggregate	Aggregate	Gasoline	648803.6	23119451.4	23119451	0	9666207	0	19.31867	0.029442	5.883211	25.23132	0.091401	0	0.012169	0.103571	0.05097	0.695736	0.850276	0.099207	0	0.013163	0.11237	0.203879	1.987817	2.304066	24805.29	90.35207	270.7764
Statewide Totals	2007	LHDT1	Aggregate	Aggregate	Diesel	363565.1	14447312.55	14447313	0	4573192	0	92.83966	1.040415	0	93.88008	1.256455	0.013024	0	1.269479	0.047776	0.434764	1.75202	1.313266	0.013613	0	1.32688	0.191105	1.242184	2.760169	8640.434	57.49935	0
Statewide Totals	2007	LHDT2	Aggregate	Aggregate	Gasoline	69407.38	2463290.867	2463291	0	1034067	0	1.741395	0.003172	0.672746	2.417313	0.007817	0	0.000994	0.008811	0.005431	0.086483	0.100724	0.008494	0	0.001078	0.009571	0.021723	0.247094	0.278387	2977.633	11.15078	31.73622
Statewide Totals	2007	LHDT2	Aggregate	Aggregate	Diesel	92778.34	3644031.182	3644031	0	1167035	0	22.7135	0.265504	0	22.979	0.318795	0.003172	0	0.321968	0.012051	0.127937	0.461955	0.33321	0.003316	0	0.336526	0.048202	0.365534	0.750262	2686.161	23.04323	0
Statewide Totals	2007	MCY	Aggregate	Aggregate	Gasoline	614719.2	4023054.729	4023055	0	1229438	0	5.683409	0	0.428177	6.111586	0.01306	0	0.00995	0.02301	0.004435	0.018626	0.04607	0.013734	0	0.010449	0.024182	0.017739	0.053216	0.095137	989.1951	0	112.3684
Statewide Totals	2007	MDV	Aggregate	Aggregate	Gasoline	4025420	142912770.4	1.43E+08	0	19453030	0	84.02228	0	25.68856	109.7108	0.456499	0	0.102738	0.559237	0.315069	0.480882	1.355188	0.494767	0	0.111309	0.606077	1.260276	1.373947	3.2403	83993.47	0	3042.506
Statewide Totals	2007	MDV	Aggregate	Aggregate	Diesel	5963.14	118575.5701	118575.6	0	23391.6	0	0.2146	0	0	0.2146	0.029047	0	0	0.029047	0.000261	0.000468	0.029777	0.030361	0	0	0.030361	0.001046	0.001337	0.032743	71.95807	0	0
Statewide Totals	2007	MH	Aggregate	Aggregate	Gasoline	190329.1	1565328.023	1565328	0	19040.52	0	2.785657	0	0.008092	2.793749	0.009533	0	5.34E-05	0.009586	0.005176	0.026662	0.041424	0.010221	0	5.66E-05	0.010278	0.020706	0.076176	0.10716	3300.436	0	1.013148
Statewide Totals	2007	MH	Aggregate	Aggregate	Diesel	28927.49	327958.2711	327958.3	0	2892.749	0	2.739372	0	0	2.739372	0.07832	0	0	0.07832	0.001446	0.005558	0.085324	0.081861	0	0	0.081861	0.005784	0.01588	0.103525	376.0182	0	0
Statewide Totals	2007	MHDT	Aggregate	Aggregate	Gasoline	69752.36	2793640.458	2793640	0	1395605	0	8.749014	0.006431	0.871373	9.626818	0.016304	0	0.006852	0.023156	0.009238	0.047573	0.079967	0.017519	0	0.007249	0.024768	0.036954	0.135922	0.197644	5867.434	43.86303	119.2579
Statewide Totals	2007	MHDT	Aggregate	Aggregate	Diesel	262968.8	11484740.68	11484741	0	3159087	0	129.3155	11.90988	0	141.2254	4.552253	0.19833	0	4.750582	0.037979	0.196403	4.984965	4.758085	0.207297	0	4.965383	0.151917	5.561151	5.678451	14915.33	704.1444	0
Statewide Totals	2007	OBUS	Aggregate	Aggregate	Gasoline	15654.15	875364.3134	875364.3	0	313208.3	0	1.63457	0.001104	0.161052	1.796725	0.001544	0	0.000381	0.001925	0.002895	0.014954	0.019774	0.001671	0	0.000405	0.002076	0.011579	0.042726	0.056381	1792.144	6.841443	13.83527
Statewide Totals	2007	OBUS	Aggregate	Aggregate	Diesel	10603.87	748714.0167	748714	0	128003.1	0	11.72622	0.591677	0	12.31789	0.450776	0.009742	0	0.460518	0.002476	0.019551	0.482545	0.471158	0.010183	0	0.481341	0.009904	0.05586	0.547105	1159.803	36.49343	0
Statewide Totals	2007	OBUS	Aggregate	Aggregate	Natural Ga:	0.777508	22.92771613	22.92772	0	6.919824	0	4.98E-06	1.36E-06	0	6.34E-06	1E-08	2.4E-09	0	1.24E-08	7.58E-08	3.87E-07	4.75E-07	1.09E-08	2.62E-09	0	1.35E-08	3.03E-07	1.11E-06	1.42E-06	0.022921	0.001044	0
Statewide Totals	2007	SBUS	Aggregate	Aggregate	Gasoline	4078.366	182628.7124	182628.7	0	16313.46	0	0.616339	0.003854	0.010189	0.630381	0.002329	0	0.000105	0.002433	0.000403	0.003212	0.006048	0.002483	0	0.000111	0.002595	0.001611	0.009178	0.013383	195.7136	12.31595	1.551186
Statewide Totals	2007	SBUS	Aggregate	Aggregate	Diesel	17962.86	531896.0767	531896.1	0	260102.2	0	7.066812	0.703336	0	7.770148	0.296289	0.015757	0	0.312046	0.001759	0.009357	0.323162	0.309686	0.016469	0	0.326155	0.007036	0.026734	0.359925	727.8317	43.0626	0
Statewide Totals	2007	SBUS	Aggregate	Aggregate	Natural Ga:	56.14208	790.7513002	790.7513	0	812.9373	0	0.000905	0.000331	0	0.001236	3.43E-06	5.87E-07	0	4.02E-06	2.61E-06	1.41E-05	2.08E-05	3.73E-06	6.38E-07	0	4.37E-06	1.05E-05	4.04E-05	5.52E-05	1.508052	0.254825	0
Statewide Totals	2007	UBUS	Aggregate	Aggregate	Gasoline	835.3658	73188.60557	73188.61	0	3341.463	0	0.04517	0	0.003792	0.048962	7.14E-05	0	2.19E-06	7.36E-05	0.000197	0.002808	0.003079	7.77E-05	0	2.38E-06	8.01E-05	0.000789	0.008024	0.008893	123.0953	0	0.332553
Statewide Totals	2007	UBUS	Aggregate	Aggregate	Diesel	6335.146	661695.9653	661696	0	25340.58	0	12.18766	0	0	12.18766	0.07246	0	0	0.07246	0.005297	0.027708	0.105466	0.075737	0	0	0.075737	0.021188	0.079167	0.176092	1238.477	0	0
Statewide Totals	2007	UBUS	Aggregate	Aggregate	Electricity	38.93715	1266.567869	0	1266.568	155.7486	2474.993	0	0	0	0	0	0	0	0	2.58E-08	1.66E-07	1.92E-07	0	0	0	0	1.03E-07	4.73E-07	5.77E-07	0	0	0
Statewide Totals	2007	UBUS	Aggregate	Aggregate	Natural Ga:	4981.025	635730.3089	635730.3	0	19924.1	0	9.681443	0	0	9.681443	0.012287	0	0	0.012287	0.005838	0.026945	0.04507	0.012843	0	0	0.012843	0.023352	0.076985	0.11318	1276.737	0	0
Statewide Totals	2008	HHDT	Aggregate	Aggregate	Gasoline	4110.025	276969.2991	276969.3	0	82233.39	0	2.696904	0	0.020174	2.717079	0.001654	0	0.000828	0.002482	0.001527	0.012148	0.016156	0.001752	0	0.00087	0.002622	0.006106	0.034708	0.043436	772.0467	0	11.90323
Statewide Totals	2008	HHDT	Aggregate	Aggregate	Diesel	237103	36689870.69	36689871	0	3443893	0	654.6297	15.6461	0	670.2758	22.12549	0.433893	0	22.55939	0.358749	1.467027	24.38516	23.12591	0.453512	0	23.57942	1.434996	4.191505	29.20592	69998.2	1545.952	0
Statewide Totals	2008	HHDT	Aggregate	Aggregate	Natural Ga:	1121.237	82348.33974	82348.34	0	5534.785	0	1.514436	0.012593	0	1.52703	0.003384	2.96E-06	0	0.003387	0.000817	0.00635	0.010554	0.00368	3.22E-06	0	0.003683	0.003268	0.018143	0.025094	212.9319	9.337364	0
Statewide Totals	2008	LDA	Aggregate	Aggregate	Gasoline	13291596	437604642.1	4.38E+08	0	62347769	0	160.9518	0	47.09368	208.0455	1.690407	0	0.374895	2.065302	0.964754	1.30083	4.330886	1.833105	0	0.405084	2.238189	3.859015	3.716657	9.813861	170268.7	0	6864.129
Statewide Totals	2008	LDA	Aggregate	Aggregate	Diesel	60280.05	1235197.148	1235197	0	243746	0	2.265788	0	0	2.265788	0.221875	0	0	0.221875	0.002723	0.003776	0.228374	0.231908	0	0	0.231908	0.010893	0.010788	0.253588	445.7119	0	0
Statewide Totals	2008	LDA	Aggregate	Aggregate	Electricity	10620.33	276642.3675	0	276642.4	51939.47	106806.8	0	0	0	0	0	0	0	0	0.00061	0.000467	0.001077	0	0	0	0	0.00244	0.001336	0.003775	0	0	0
Statewide Totals	2008	LDT1	Aggregate	Aggregate	Gasoline	1764504	50303575.98	50303576	0	7833550	0	42.18504	0	8.47283	50.65787	0.406926	0	0.083472	0.490398	0.1109	0.183221	0.78452	0.439489	0	0.089952	0.529441	0.443602	0.523489	1.496532	22727.8	0	1087.943
Statewide Totals	2008	LDT1	Aggregate	Aggregate	Diesel	4404.962	91898.27234	91898.27	0	17351.5	0	0.163254	0	0	0.163254	0.019869	0	0	0.019869	0.000203	0.000362	0.020433	0.020767	0	0	0.020767	0.00081	0.001033	0.022611	46.72106	0	0
Statewide Totals	2008	LDT1	Aggregate	Aggregate	Electricity	1252.811	28967.58206	0	28967.58	5872.456	11183.88	0	0	0	0	0	0	0	0	6.39E-05	4.91E-05	0.000113	0	0	0	0	0.000255	0.00014	0.000396	0	0	0
Statewide Totals	2008	LDT2	Aggregate	Aggregate	Gasoline	4573823	151904459.6	1.52E+08	0	21660972	0	95.72336	0	29.02792	124.7513	0.547893	0	0.110854	0.658747	0.334892	0.527315	1.520955	0.593722	0	0.12	0.713722	1.339569	1.506615	3.559906	78581.92	0	3069.057
Statewide Totals	2008	LDT2	Aggregate	Aggregate	Diesel	446.0481	9963.411866	9963.412	0	1779.909	0	0.018556	0	0	0.018556	0.002118	0	0	0.002118	2.2E-05	3.75E-05	0.002178	0.002214	0	0	0.002214	8.79E-05	0.000107	0.002409	5.138033	0	0
Statewide Totals	2008	LHDT1	Aggregate	Aggregate	Gasoline	626433.3	21283631.27	21283631	0	9332923	0	16.49572	0.028519	5.98403	22.50827	0.077717	0	0.010767	0.088484	0.046922	0.64049	0.775897	0.084365	0	0.01165	0.096015	0.18769	1.829973	2.113677	22549.64	86.63532	257.0474
Statewide Totals	2008	LHDT1	Aggregate	Aggregate	Diesel	372422.7	14043131.3	14043131	0	4684609	0	86.57348	1.065763	0	87.63925	1.212744	0.012801	0	1.225546	0.04644	0.422601	1.694587	1.267579	0.01338	0	1.280959	0.185759	1.207432	2.674151	8471.038	58.90686	0
Statewide Totals	2008	LHDT2	Aggregate	Aggregate	Gasoline	76169.74	2604579.241	2604579	0	1134816	0	1.795163	0.003485	0.761588	2.560236	0.0078	0	0.001041	0.008841	0.005742	0.091443	0.106026	0.008476	0	0.001129	0.009605	0.022968	0.261266	0.29384	3096.227	12.15083	34.64001
Statewide Totals	2008	LHDT2	Aggregate	Aggregate	Diesel	99722.47	3767903.621	3767904	0	1254383	0	21.85374	0.285376	0	22.13912	0.322758	0.003298	0	0.326056	0.01246	0.132286	0.470802	0.337351	0.003447	0	0.340799	0.049841	0.37796	0.768599	2822.018	24.874	0
Statewide Totals	2008	MCY	Aggregate	Aggregate	Gasoline	663643.4	4201948.11	4201948	0	1327287	0	5.270737	0	0.430373	5.70111	0.011883	0	0.009764	0.021647	0.004632	0.019454	0.045733	0.012499	0	0.010254	0.022752	0.018527	0.055582	0.096862	997.2038	0	113.8979
Statewide Totals	2008	MDV	Aggregate	Aggregate	Gasoline	4065043	138839695.1	1.39E+08	0	19539771	0	76.91699	0	24.93126	101.8483	0.400098	0	0.093419	0.493517	0.306089	0.472197	1.271803	0.433725	0	0.101236	0.53496	1.224357	1.349134	3.108452	81037.89	0	3011.825
Statewide Totals	2008	MDV	Aggregate	Aggregate	Diesel	5425.743	106453.354	106453.4	0	21233.42	0	0.184166	0	0	0.184166	0.024207	0	0	0.024207	0.000235	0.000416	0.024857	0.025302	0	0	0.025302	0.000939	0.001187	0.027428	64.37419	0	0
Statewide Totals	2008	MH	Aggregate	Aggregate	Gasoline	176216.3	1413631.561	1413632	0	17628.67	0	2.304875	0	0.007448	2.312324	0.007858	0	4.53E-05	0.007904	0.004675	0.024075	0.036654	0.008428	0	4.81E-05	0.008476	0.018699	0.068787	0.095962	2952.926	0	0.902511
Statewide Totals	2008	MH	Aggregate	Aggregate	Diesel	29714.1	322026.0727	322026.1	0	2971.41	0	2.566425	0	0	2.566425	0.074659	0	0	0.074659	0.00142	0.005457	0.081536	0.078035	0	0	0.078035	0.00568	0.015592	0.099306	369.4161	0	0
Statewide Totals	2008	MHDT	Aggregate	Aggregate	Gasoline	65980.9	2600931.68	2600932	0	1320146	0	7.387374	0.006103	0.823279	8.216757	0.013686	0	0.006111	0.019797	0.008601	0.044272	0.072671	0.014702	0	0.006465	0.021168	0.034404	0.126493	0.182065	5408.402	41.20576	109.8128
Statewide Totals	2008	MHDT	Aggregate	Aggregate	Diesel	270527.7	10575724.68	10575725	0	3242547	0	114.1798	12.32156	0	126.5014	3.993768	0.189179	0	4.182948	0.034973	0.180858	4.398779	4.174349	0.197733	0	4.372082	0.139893	0.516737	5.028712	13753.62	734.5581	0
Statewide Totals	2008	MHDT	Aggregate	Aggregate	Natural Ga:	35.13948	692.2174927	692.2175	0	417.1553	0	0.000171	0.000226	0	0.000396	3.38E-07	4E-07	0	7.38E-07	2.29E-06	1.19E-05	1.5E-05	3.68E-07	4.35E-07	0	8.03E-07	9.16E-06	3.41E-05	4.4E-05	0.72987	0.173361	0
Statewide Totals	2008	OBUS	Aggregate	Aggregate	Gasoline	16610.37	907080.4587	907080.5	0	332340.4	0	1.49011	0.001175	0.167472	1.658757	0.001346	0	0.000343	0.001689	0.003	0.015497	0.020186	0.001456	0	0.000365	0.001821	0.011999	0.044278	0.058098	1841.81	7.208449	14.18979
Statewide Totals	2008	OBUS	Aggregate	Aggregate	Diesel	10389	687439.9286	687439.9	0	121582.2	0	10.19101	0.515808	0	10.70682	0.402612	0.008156	0	0.410767	0.002273	0.017969	0.431009	0.420816	0.008524	0	0.42934	0.009093	0.051339	0.489773	1066.272	32.75602	0
Statewide Totals	2008	OBUS	Aggregate	Aggregate	Natural Ga:	32.12489	2037.845932	2037.846	0	285.9115	0	0.00048	5.61E-05	0	0.000536	9.4E-07	9.94E-08	0	1.04E-06	6.74E-06	3.47E-05	4.25E-05	1.02E-06	1.08E-07	0	1.13E-06	2.7E-05	9.91E-05	0.000127	2.098956	0.043085	0
Statewide Totals	2008	SBUS	Aggregate	Aggregate	Gasoline	4233.393	185581.1711	185581.2	0	16933.57	0	0.577847	0.00403	0.010641	0.592518	0.00215	0	9.87E-05	0.002249	0.000409	0.003264	0.005922	0.002293	0	0.000105	0.002398	0.001637	0.009325	0.013359	196.1098	12.69938	1.552675
Statewide Totals	2008	SBUS	Aggregate	Aggregate	Diesel	18727.89	486684.6519	486684.7	0	271179.9	0	6.264651	0.74312	0	7.00777	0.258641	0.015472	0	0.274112	0.001609	0.008561	0.284283	0.270335	0.016171	0	0.286507	0.006438	0.02446	0.317405	665.2258	45.51887	0
Statewide Totals	2008	SBUS	Aggregate	Aggregate	Natural Ga:	192.1094	3798.741147	3798.741	0	2781.743	0	0.004051	0.001133	0	0.005184	1.6E-05	2.01E-06	0	1.8E-05	1.26E-05	6.75E-05	9.81E-05	1.74E-05	2.18E-06	0	1.96E-05	5.02E-05	0.000193	0.000263	6.916821	0.870574	0
Statewide Totals	2008	UBUS	Aggregate	Aggregate	Gasoline	1277.715	114293.7922	114293.8	0	5105.721	0	0.083529	0	0.005817	0.089346	0.000101	0	2.72E-06	0.000103	0.000313	0.004414	0.004831	0.00011	0	2.96E-06	0.000113	0.001251	0.012613	0.013976	193.4868	0	0.521416
Statewide Totals	2008	UBUS	Aggregate	Aggregate	Diesel	5942.943	610923.5577	610923.6	0	23766.17	0	10.87328	0	0	10.87328	0.062351	0	0	0.062351	0.004889	0.025623	0.092864	0.065171	0	0	0.065171	0.019556	0.07321	0.157937	1132.904	0	0
Statewide Totals	2008	UBUS	Aggregate	Aggregate	Electricity	36.55444	1128.867651	0	1128.868	146.2178	2200.992	0	0	0	0	0	0	0	0	2.56E-08	1.64E-07	1.89E-07	0	0	0	0	1.02E-07	4.68E-07	5.7E-07	0	0	0
Statewide Totals	2008	UBUS	Aggregate	Aggregate	Natural Ga:	5422.359	652311.9306	652311.9	0	21680.18	0	9.553431	0	0	9.553431	0.012024	0	0	0.012024	0.00595	0.027642	0.045616	0.012568	0	0	0.012568	0.023798	0.078978	0.115344	1314.421	0	0
Statewide Totals	2009	HHDT	Aggregate	Aggregate	Gasoline	3877.895	256828.9026	256828.9	0	77588.93	0	2.447713	0	0.018791	2.466503	0.001517	0	0.000765	0.002283	0.001416	0.011285	0.014984	0.001607	0	0.000804	0.002411	0.005662	0.032244	0.040317	725.6381	0	11.21953
Statewide Totals	2009	HHDT	Aggregate	Aggregate	Diesel	220484	33207200.33	33207200	0	3181262	0	570.5894	15.15513	0.015296	585.7598	19.65468	0.386141	0	20.04082	0.324691	1.323373	21.68888	20.54337	0.403601	0	20.94697	1.298765	3.781065	26.0268	63333.22	1558.95	0
Statewide Totals	2009	HHDT	Aggregate	Aggregate	Natural Ga:	1607.356	109815.336	109815.3	0	8176.028	0	1.38245	0.018201	0	1.400651	0.003008	6.01E-06	0	0.003014	0.001089	0.008186	0.012289	0.003272	6.54E-06	0	0.003278	0.004358	0.023388	0.031024	248.305	13.51693	0
Statewide Totals	2009	LDA	Aggregate	Aggregate	Gasoline	13178663	433497119.1	4.33E+08	0	61570531	0	148.6447	0	44.64716	193.2919	1.506033	0	0.338207	1.84424	0.955698	1.291201	4.091139	1.633274	0	0.365478	1.998752	3.822793	3.689146	9.510691	170100.2	0	6763.506
Statewide Totals	2009	LDA	Aggregate	Aggregate	Diesel	60958.02	1342022.689	1342023	0	249690	0	2.113346	0	0	2.113346	0.19785	0	0	0.19785	0.002959	0.004054	0.204863	0.206796	0	0	0.206796	0.011835	0.011582	0.230213	468.4362	0	0
Statewide Totals	2009	LDA	Aggregate	Aggregate	Electricity	10997.32	283498.1393	0	283498.1	53384.96	109453.7	0	0	0	0	0	0	0	0	0.000625	0.000479	0.001104	0	0	0	0	0.0025	0.00137	0.00387	0	0	0
Statewide Totals	2009	LDT1	Aggregate	Aggregate	Gasoline	1687519	48512286.25	48512286	0	7480953	0	37.56542	0	7.724033	45.28945	0.357062	0	0.073211	0.430273	0.106951	0.176963	0.714188	0.38579	0	0.07894	0.46473	0.427806	0.505609	1.398145	22079.92	0	1031.451
Statewide Totals	2009	LDT1	Aggregate	Aggregate	Diesel	4170.939	87987.51708	87987.52	0	16355.56	0	0.149913	0	0	0.149913	0.017945	0	0	0.017945	0.000194	0.000345	0.018483	0.018756	0	0	0.018756	0.000776	0.000985	0.020517	45.1035	0	0
Statewide Totals	2009	LDT1	Aggregate	Aggregate	Electricity	1333.46	30754.56921	0	30754.57	6217.284	11873.8	0	0	0	0	0	0	0	0	6.78E-05	5.22E-05	0.00012	0	0	0	0	0.000271	0.000149	0.00042	0	0	0
Statewide Totals	2009	LDT2	Aggregate	Aggregate	Gasoline	4539097	149799400.1	1.5E+08	0	21361890	0	90.01226	0	27.6864	117.6987	0.499474	0	0.101889	0.601363	0.330251	0.524951	1.456566	0.541284	0	0.11031	0.651594	1.321006	1.499861	3.472461	78026.43	0	3030.468
Statewide Totals	2009	LDT2	Aggregate	Aggregate	Diesel	494.14	11734.34087	11734.34	0	2002.053	0	0.021183	0	0	0.021183	0.002159	0	0	0.002159	2.59E-05	4.29E-05	0.002228	0.002257	0	0	0.002257	0.000103	0.000123	0.002483	5.933633	0	0
Statewide Totals	2009	LHDT1	Aggregate	Aggregate	Gasoline	588178.8	19364493.53	19364494	0	8762988	0	14.58682	0.026831	5.841582	20.45523	0.068317	0	0.009534	0.077852	0.042691	0.582738	0.703281	0.074171	0	0.01032	0.084491	0.170766	1.664965	1.920222	20752.09	82.38158	242.5954
Statewide Totals	2009	LHDT1	Aggregate	Aggregate	Diesel	364755.3	13259316.66	13259317	0	4588163	0	80.95485	1.043821	0	81.99867	1.162123	0.012296	0	1.174419	0.043848	0.399014	1.617281	1.214669	0.012852	0	1.227522	0.175391	1.14004	2.542952	8029.68	57.7003	0
Statewide Totals	2009	LHDT2	Aggregate	Aggregate	Gasoline	72029.45	2407407.829	2407408	0	1073131	0	1.581603	0.003302	0.750917	2.335822	0.006803	0	0.000918	0.007721	0.005307	0.084521	0.09755	0.007393	0	0.000996	0.008389	0.02123	0.241488	0.271107	2881.326	11.63666	33.00283
Statewide Totals	2009	LHDT2	Aggregate	Aggregate	Diesel	97039.71	3536702.139	3536702	0	1220637	0	20.23991	0.277699	0	20.51761	0.30636	0.003134	0	0.309495	0.011696	0.124169	0.445359	0.320213	0.003276	0	0.323489	0.046783	0.354768	0.725039	2663.713	24.2711	0
Statewide Totals	2009	MCY	Aggregate	Aggregate	Gasoline	657910.8	4017955.739	4017956	0	1315822	0	4.743074	0	0.406153	5.149228	0.010759	0	0.009174	0.019933	0.004429	0.018602	0.042964	0.011318	0	0.009635	0.020953	0.017716	0.053148	0.091818	953.1087	0	110.3562
Statewide Totals	2009	MDV	Aggregate	Aggregate	Gasoline	3984606	134168933.6	1.34E+08	0	18989033	0	73.37783	0	24.16533	97.54316	0.366194	0	0.085934	0.452128	0.295792	0.463572	1.211492	0.397027	0	0.09314	0.490167	1.183168	1.324492	2.997828	79217.11	0	2952.546
Statewide Totals	2009	MDV	Aggregate	Aggregate	Diesel	6375.423	157080.615	157080.6	0	26593.61	0	0.164646	0	0	0.164646	0.021453	0	0	0.021453	0.000346	0.000562	0.022361	0.022423	0	0	0.022423	0.001385	0.001606	0.025414	92.13579	0	0
Statewide Totals	2009	MH	Aggregate	Aggregate	Gasoline	168478.8	1335038.799	1335039	0	16854.62	0	2.099895	0	0.00705	2.106944	0.007102	0	4.07E-05	0.007143	0.004415	0.022736	0.034294	0.00762	0	4.32E-05	0.007663	0.01766	0.06496	0.090282	2820.88	0	0.854436
Statewide Totals	2009	MH	Aggregate	Aggregate	Diesel	29938	315535.21	315535.2	0	2993.8	0	2.464178	0	0	2.464178	0.072934	0	0	0.072934	0.001391	0.005347	0.079672	0.076231	0	0	0.076231	0.005565	0.015277	0.097074	362.0796	0	0
Statewide Totals	2009	MHDT	Aggregate	Aggregate	Gasoline	59206.33	2347307.016	2347307	0	1184600	0	6.314316	0.005497	0.744289	7.064101	0.011135	0	0.005219	0.016569	0.007762	0.039949	0.06428	0.012188	0	0.005521	0.017709	0.03105	0.114141	0.162899	4934.969	37.44894	98.39535
Statewide Totals	2009	MHDT	Aggregate	Aggregate	Diesel	256088.6	9576913.525	9576914	0	3056749	0	100.8666	11.67785	0.003987	112.5484	3.521763	0.169388	0	3.69115	0.03167	0.163778	3.886598	3.681001	0.177047	0	3.858048	0.126681	0.467936	4.452665	12462.5	703.4727	0
Statewide Totals	2009	MHDT	Aggregate	Aggregate	Natural Ga:	133.754	6021.941789	6021.942	0	1421.435	0	0.001411	0.000925	0	0.002336	2.81E-06	1.64E-06	0

Statewide Totals	2009	OBUS	Aggregate	Aggregate	Gasoline	17349.44	959373.3601	959373.4	0	347127.6	0	1.399417	0.00123	0.171668	1.572315	0.001218	0	0.00031	0.001528	0.003173	0.01639	0.021092	0.001318	0	0.00033	0.001648	0.01269	0.04683	0.061169	1972.657	7.624776	14.69003
Statewide Totals	2009	OBUS	Aggregate	Aggregate	Diesel	10908.57	615721.2935	615721.3	0	123955	0	8.598294	0.486158	0.000325	9.084777	0.333442	0.007388	0	0.34083	0.002036	0.016156	0.359022	0.348519	0.007722	0	0.356241	0.008145	0.046159	0.410545	959.3762	31.41272	0
Statewide Totals	2009	OBUS	Aggregate	Aggregate	Natural Ga:	169.5092	9087.645414	9087.645	0	1508.632	0	0.002161	0.000296	0	0.002457	4.21E-06	5.24E-07	0	4.74E-06	3.01E-05	0.000155	0.00019	4.58E-06	5.7E-07	0	5.15E-06	0.00012	0.000443	0.000568	9.389443	0.227197	0
Statewide Totals	2009	SBUS	Aggregate	Aggregate	Gasoline	4344.798	191367.6473	191367.6	0	17379.19	0	0.568827	0.004157	0.010853	0.583837	0.002109	0	9.56E-05	0.002205	0.000422	0.003369	0.005996	0.002249	0	0.000102	0.002351	0.001688	0.009627	0.013665	204.5656	13.20225	1.586013
Statewide Totals	2009	SBUS	Aggregate	Aggregate	Diesel	19342.04	437210.3543	437210.4	0	280072.7	0	5.453014	0.770102	0.00051	6.223626	0.21925	0.014373	0	0.233623	0.001446	0.00769	0.242759	0.229163	0.015023	0	0.244187	0.005783	0.021971	0.271941	596.9609	47.74495	0
Statewide Totals	2009	SBUS	Aggregate	Aggregate	Natural Ga:	333.9597	7179.843942	7179.844	0	4835.736	0	0.007793	0.001969	0	0.009763	3.05E-05	3.49E-06	0	3.4E-05	2.37E-05	0.000128	0.000186	3.31E-05	3.8E-06	0	3.69E-05	9.5E-05	0.000365	0.000497	13.21391	1.512418	0
Statewide Totals	2009	UBUS	Aggregate	Aggregate	Gasoline	1690.785	151448.9112	151448.9	0	6763.142	0	0.053459	0	0.007345	0.060804	8.95E-05	0	2.32E-06	9.18E-05	0.000438	0.006007	0.006536	9.73E-05	0	2.52E-06	9.99E-05	0.00175	0.017162	0.019012	287.3645	0	0.724635
Statewide Totals	2009	UBUS	Aggregate	Aggregate	Diesel	5074.774	520223.5672	520223.6	0	20299.09	0	9.135588	0	0	9.135588	0.050202	0	0	0.050202	0.00429	0.021942	0.076435	0.052472	0	0	0.052472	0.017162	0.062692	0.132326	979.321	0	0
Statewide Totals	2009	UBUS	Aggregate	Aggregate	Electricity	36.16128	1384.873997	0	1384.874	144.6451	2820.398	0	0	0	0	0	0	0	0	1.67E-06	1.07E-05	1.24E-05	0	0	0	0	6.69E-06	3.07E-05	3.74E-05	0	0	0
Statewide Totals	2009	UBUS	Aggregate	Aggregate	Natural Ga:	5829.932	691107.7247	691107.7	0	23319.73	0	9.118171	0	0	9.118171	0.011265	0	0	0.011265	0.006301	0.029294	0.046859	0.011774	0	0	0.011774	0.025203	0.083697	0.120674	1427.185	0	0
Statewide Totals	2010	HHDT	Aggregate	Aggregate	Gasoline	3677.34	251796.7681	251796.8	0	73576.22	0	2.32771	0	0.017888	2.345597	0.001433	0	0.000696	0.002129	0.001388	0.010949	0.014466	0.001517	0	0.000731	0.002248	0.005551	0.031284	0.039084	702.6376	0	10.24365
Statewide Totals	2010	HHDT	Aggregate	Aggregate	Diesel	229437.4	33342764.18	33342764	0	3382274	0	552.0686	16.44154	0.165054	568.6752	19.48132	0.392964	0	19.87428	0.326012	1.31319	21.51348	20.36218	0.410732	0	20.77291	1.304049	3.751973	25.82893	63469.23	1778.666	0
Statewide Totals	2010	HHDT	Aggregate	Aggregate	Natural Ga:	2163.77	145345.1568	145345.2	0	11024.91	0	1.429351	0.02443	0	1.453781	0.003001	8.45E-06	0	0.00301	0.001442	0.010677	0.015129	0.003264	9.19E-06	0	0.003273	0.005768	0.030507	0.039548	303.7453	18.05294	0
Statewide Totals	2010	LDA	Aggregate	Aggregate	Gasoline	13034486	443052047.8	4.43E+08	0	60728534	0	139.4661	0	42.0024	181.4685	1.367634	0	0.300369	1.668004	0.976763	1.322535	3.967302	1.483403	0	0.32469	1.808093	3.907053	3.778673	9.493818	170108.6	0	6455.669
Statewide Totals	2010	LDA	Aggregate	Aggregate	Diesel	63716.75	1583458.811	1583459	0	266062.4	0	2.022758	0	0	2.022758	0.182514	0	0	0.182514	0.003491	0.004734	0.190739	0.190767	0	0	0.190767	0.013964	0.013524	0.218255	526.146	0	0
Statewide Totals	2010	LDA	Aggregate	Aggregate	Electricity	12034.3	319959.8534	0	319959.9	58183.19	123530.9	0	0	0	0	0	0	0	0	0.000705	0.000541	0.001247	0	0	0	0	0.002822	0.001546	0.004368	0	0	0
Statewide Totals	2010	LDA	Aggregate	Aggregate	Plug-in Hyb	21.4848	1001.753363	542.8215	458.9318	88.83964	138.6111	4.02E-06	0	1.11E-05	1.51E-05	1.86E-07	0	3.35E-08	2.2E-07	2.21E-06	1.51E-06	3.94E-06	2.02E-07	0	3.64E-08	2.39E-07	8.83E-06	4.31E-06	1.34E-05	0.174344	0	0.007084
Statewide Totals	2010	LDT1	Aggregate	Aggregate	Gasoline	1631795	48585578.49	48585578	0	7217402	0	34.92385	0	7.139771	42.06362	0.326852	0	0.064943	0.391796	0.107113	0.177936	0.676845	0.353323	0	0.070072	0.423395	0.428452	0.508389	1.360235	21715.57	0	964.5327
Statewide Totals	2010	LDT1	Aggregate	Aggregate	Diesel	3932.668	84737.55022	84737.55	0	15251.9	0	0.142193	0	0	0.142193	0.01703	0	0	0.01703	0.000187	0.000334	0.01755	0.0178	0	0	0.0178	0.000747	0.000953	0.0195	43.51883	0	0
Statewide Totals	2010	LDT1	Aggregate	Aggregate	Electricity	1315.696	30565.98675	0	30565.99	6066.595	11800.99	0	0	0	0	0	0	0	0	6.74E-05	5.19E-05	0.000119	0	0	0	0	0.00027	0.000148	0.000418	0	0	0
Statewide Totals	2010	LDT2	Aggregate	Aggregate	Gasoline	4539399	154081676.2	1.54E+08	0	21253478	0	86.85086	0	26.34765	113.1985	0.471343	0	0.094081	0.565424	0.339692	0.543871	1.448988	0.510761	0	0.101851	0.612612	1.358769	1.553918	3.525299	78473.2	0	2931.012
Statewide Totals	2010	LDT2	Aggregate	Aggregate	Diesel	495.1462	12491.55244	12491.55	0	2006.491	0	0.020175	0	0	0.020175	0.002109	0	0	0.002109	2.75E-05	4.54E-05	0.002182	0.002205	0	0	0.002205	0.00011	0.00013	0.002445	6.202375	0	0
Statewide Totals	2010	LHDT1	Aggregate	Aggregate	Gasoline	563654.1	18580397.05	18580397	0	8397606	0	13.70521	0.025753	5.755586	19.48655	0.063916	0	0.008759	0.072675	0.040963	0.559142	0.67278	0.069398	0	0.009483	0.078881	0.163851	1.597548	1.84028	19655.34	78.01053	228.2683
Statewide Totals	2010	LHDT1	Aggregate	Aggregate	Diesel	360787	13113814.96	13113815	0	4538247	0	78.9644	1.032465	0	79.99687	1.154548	0.011962	0	1.16651	0.043367	0.394635	1.604512	1.206751	0.012503	0	1.219254	0.173466	1.12753	2.52025	7992.205	57.07509	0
Statewide Totals	2010	LHDT2	Aggregate	Aggregate	Gasoline	71057.66	2395350.33	2395350	0	1058653	0	1.531885	0.003262	0.762386	2.297533	0.006497	0	0.000861	0.007358	0.005281	0.084097	0.096736	0.00706	0	0.000934	0.007995	0.021123	0.240278	0.269396	2815.573	11.34316	32.06912
Statewide Totals	2010	LHDT2	Aggregate	Aggregate	Diesel	96620.97	3530060.021	3530060	0	1215370	0	19.70027	0.276501	0	19.97677	0.305933	0.003077	0	0.309009	0.011674	0.123936	0.444618	0.319765	0.003216	0	0.322981	0.046695	0.354101	0.723777	2675.887	24.20854	0
Statewide Totals	2010	MCY	Aggregate	Aggregate	Gasoline	648124.9	3909546.089	3909546	0	1296250	0	4.476717	0	0.38664	4.863357	0.010119	0	0.008692	0.018811	0.00431	0.0181	0.041221	0.010647	0	0.009129	0.019776	0.017238	0.051714	0.088729	910.919	0	104.9501
Statewide Totals	2010	MDV	Aggregate	Aggregate	Gasoline	3942788	135054006.2	1.35E+08	0	18632661	0	72.8071	0	23.6208	96.42789	0.349868	0	0.080003	0.42987	0.297743	0.473336	1.20095	0.379371	0	0.086725	0.466096	1.190973	1.35239	3.009459	78511.37	0	2846.375
Statewide Totals	2010	MDV	Aggregate	Aggregate	Diesel	7880.201	235392.9582	235393	0	34624	0	0.154579	0	0	0.154579	0.02008	0	0	0.02008	0.000519	0.000803	0.021402	0.020988	0	0	0.020988	0.002076	0.002295	0.025359	133.343	0	0
Statewide Totals	2010	MH	Aggregate	Aggregate	Gasoline	159575.9	1281139.249	1281139	0	15963.97	0	1.96345	0	0.006626	1.970075	0.006582	0	3.63E-05	0.006618	0.004237	0.021819	0.032674	0.007064	0	3.86E-05	0.007102	0.016947	0.062341	0.08639	2672.736	0	0.78423
Statewide Totals	2010	MH	Aggregate	Aggregate	Diesel	29514.51	311038.9244	311038.9	0	2951.451	0	2.384533	0	0	2.384533	0.071045	0	0	0.071045	0.001371	0.005271	0.077688	0.074258	0	0	0.074258	0.005486	0.015061	0.094805	357.1542	0	0
Statewide Totals	2010	MHDT	Aggregate	Aggregate	Gasoline	55869.14	2274507.923	2274508	0	1117830	0	5.899989	0.005201	0.701765	6.606955	0.010297	0	0.004645	0.014942	0.007522	0.038701	0.061165	0.011056	0	0.004915	0.015972	0.030087	0.110574	0.156632	4719.267	34.92187	90.12342
Statewide Totals	2010	MHDT	Aggregate	Aggregate	Diesel	255248.4	9621196.681	9621197	0	3046173	0	98.91927	11.52626	0.046603	110.4921	3.475048	0.162458	0	3.637507	0.031817	0.164535	3.833858	3.632175	0.169804	0	3.801978	0.127267	0.4701	4.399345	12511.32	705.1223	0
Statewide Totals	2010	MHDT	Aggregate	Aggregate	Natural Ga:	249.0336	11141.5613	11141.56	0	2667.723	0	0.00258	0.001714	0	0.004294	5.14E-06	3.04E-06	0	8.18E-06	3.68E-05	0.00019	0.000235	5.59E-06	3.3E-06	0	8.89E-06	0.000147	0.000543	0.000699	11.33591	1.309423	0
Statewide Totals	2010	OBUS	Aggregate	Aggregate	Gasoline	17260.01	971570.3073	971570.3	0	345338.4	0	1.358423	0.001225	0.167999	1.527647	0.00114	0	0.000279	0.001419	0.003213	0.0166	0.021232	0.001234	0	0.000296	0.001531	0.012852	0.047428	0.06181	1973.592	7.495039	14.25055
Statewide Totals	2010	OBUS	Aggregate	Aggregate	Diesel	11032.78	613244.3096	613244.3	0	126380.6	0	8.260545	0.494264	0.001554	8.756362	0.317685	0.006998	0	0.324683	0.002028	0.016045	0.342756	0.332049	0.007314	0	0.339364	0.008112	0.045842	0.393318	956.7803	32.86231	0
Statewide Totals	2010	OBUS	Aggregate	Aggregate	Natural Ga:	260.6195	14746.35849	14746.36	0	2319.513	0	0.003638	0.000455	0	0.004093	7.02E-06	8.06E-07	0	7.82E-06	4.88E-05	0.000252	0.000309	7.63E-06	8.77E-07	0	8.51E-06	0.000195	0.000721	0.000925	15.38937	0.347447	0
Statewide Totals	2010	SBUS	Aggregate	Aggregate	Gasoline	4389.668	202322.2029	202322.2	0	17558.67	0	0.566889	0.00422	0.010958	0.582066	0.002101	0	9.14E-05	0.002193	0.000446	0.00356	0.006199	0.00224	0	9.72E-05	0.002337	0.001784	0.010172	0.014294	212.7936	13.18321	1.555386
Statewide Totals	2010	SBUS	Aggregate	Aggregate	Diesel	19798.06	432920.7669	432920.8	0	286675.8	0	5.160796	0.78707	0.003451	5.951317	0.207005	0.01278	0	0.219786	0.001432	0.007612	0.228829	0.216365	0.013358	0	0.229723	0.005727	0.021749	0.257199	588.8264	49.50521	0
Statewide Totals	2010	SBUS	Aggregate	Aggregate	Natural Ga:	665.9445	13755.98265	13755.98	0	9642.877	0	0.015496	0.003927	0	0.019423	5.93E-05	6.96E-06	0	6.62E-05	4.55E-05	0.000246	0.000357	6.45E-05	7.57E-06	0	7.21E-05	0.000182	0.000702	0.000956	25.78935	2.999777	0
Statewide Totals	2010	UBUS	Aggregate	Aggregate	Gasoline	1787.065	171470.6998	171470.7	0	7148.261	0	0.044668	0	0.007591	0.052259	6.62E-05	0	1.77E-06	6.8E-05	0.000504	0.00686	0.007432	7.2E-05	0	1.92E-06	7.39E-05	0.002017	0.0196	0.021691	329.3621	0	0.759169
Statewide Totals	2010	UBUS	Aggregate	Aggregate	Diesel	4920.572	485684.0005	485684	0	19682.29	0	8.224574	0	0	8.224574	0.009777	0	0	0.009777	0.004079	0.020447	0.034302	0.010219	0	0	0.010219	0.016314	0.058419	0.084952	912.4636	0	0
Statewide Totals	2010	UBUS	Aggregate	Aggregate	Electricity	35.00903	752.9531959	0	752.9532	140.0361	1579.907	0	0	0	0	0	0	0	0	2.25E-07	1.42E-06	1.65E-06	0	0	0	0	9.01E-07	4.07E-06	4.97E-06	0	0	0
Statewide Totals	2010	UBUS	Aggregate	Aggregate	Natural Ga:	6077.218	701230.6457	701230.6	0	24308.87	0	8.287203	0	0	8.287203	0.010097	0	0	0.010097	0.006395	0.029709	0.046201	0.010553	0	0	0.010553	0.025581	0.084882	0.121017	1463.951	0	0
Statewide Totals	2011	HHDT	Aggregate	Aggregate	Gasoline	3470.117	240200.9971	240201	0	69430.1	0	2.160201	0	0.018542	2.178743	0.001296	0	0.000628	0.001924	0.001324	0.010247	0.013496	0.001373	0	0.00066	0.002032	0.005296	0.029279	0.036606	668.0029	0	9.378499
Statewide Totals	2011	HHDT	Aggregate	Aggregate	Diesel	230366.4	33956560.1	33956560	0	3424172	0	529.5521	17.13444	0.447803	547.1344	19.18606	0.375705	0	19.56176	0.332011	1.319156	21.21293	20.05357	0.392693	0	20.44626	1.328046	3.769017	25.54332	64295.32	1951.014	0
Statewide Totals	2011	HHDT	Aggregate	Aggregate	Natural Ga:	2820.508	194108.4953	194108.5	0	15327.11	0	1.483102	0.033077	0	1.516179	0.00301	1.57E-05	0	0.003026	0.001926	0.013776	0.018727	0.003274	1.7E-05	0	0.003291	0.007703	0.039359	0.050353	382.5573	24.46084	0
Statewide Totals	2011	LDA	Aggregate	Aggregate	Gasoline	12971612	440985043.2	4.41E+08	0	60326141	0	125.4409	0	39.49505	164.936	1.19727	0	0.266354	1.463624	0.972206	1.317737	3.753567	1.298839	0	0.288026	1.586864	3.888825	3.764963	9.240652	167401.9	0	6260.027
Statewide Totals	2011	LDA	Aggregate	Aggregate	Diesel	70548.93	1961279.525	1961280	0	303386.7	0	1.871955	0	0	1.871955	0.162338	0	0	0.162338	0.004324	0.005787	0.172449	0.169678	0	0	0.169678	0.017296	0.016534	0.203508	621.8128	0	0
Statewide Totals	2011	LDA	Aggregate	Aggregate	Electricity	15649.21	432555.4126	0	432555.4	76388.69	167002.1	0	0	0	0	0	0	0	0	0.000954	0.00073	0.001684	0	0	0	0	0.003814	0.002087	0.005902	0	0	0
Statewide Totals	2011	LDA	Aggregate	Aggregate	Plug-in Hyb	1097.749	51488.88956	27900.36	23588.53	4539.191	7124.439	0.000206	0	0.000566	0.000772	1.29E-05	0	2.57E-06	1.55E-05	0.000114	7.74E-05	0.000206	1.4E-05	0	2.8E-06	1.68E-05	0.000454	0.000221	0.000692	8.928455	0	0.37575
Statewide Totals	2011	LDT1	Aggregate	Aggregate	Gasoline	1538031	45260246.32	45260246	0	6757554	0	31.2254	0	6.530342	37.75575	0.288386	0	0.057734	0.34612	0.099782	0.167031	0.612933	0.311795	0	0.062311	0.374106	0.399127	0.477233	1.250466	20106.14	0	890.8789
Statewide Totals	2011	LDT1	Aggregate	Aggregate	Diesel	3734.383	79191.57602	79191.58	0	14307.89	0	0.13268	0	0	0.13268	0.015734	0	0	0.015734	0.000175	0.000314	0.016222	0.016445	0	0	0.016445	0.000698	0.000896	0.01804	40.79231	0	0
Statewide Totals	2011	LDT1	Aggregate	Aggregate	Electricity	1257.468	28238.7288	0	28238.73	5723.645	10902.48	0	0	0	0	0	0	0	0	6.23E-05	4.8E-05	0.00011	0	0	0	0	0.000249	0.000137	0.000386	0	0	0
Statewide Totals	2011	LDT2	Aggregate	Aggregate	Gasoline	4629309	157050899.3	1.57E+08	0	21614427	0	80.78516	0	25.15251	105.9377	0.430665	0	0.086865	0.51753	0.346238	0.555637	1.419405	0.466736	0	0.094057	0.560792	1.384953	1.587534	3.533279	78579.01	0	2907.739
Statewide Totals	2011	LDT2	Aggregate	Aggregate	Diesel	568.6631	14951.89553	14951.9	0	2330.566	0	0.021239	0	0	0.021239	0.002168	0	0	0.002168	3.3E-05	5.36E-05	0.002254	0.002266	0	0	0.002266	0.000132	0.000153	0.002551	7.258326	0	0
Statewide Totals	2011	LHDT1	Aggregate	Aggregate	Gasoline	539753.5	17351691.2	17351691	0	8041523	0	12.37313	0.024702	5.656734	18.05457	0.057321	0	0.007984	0.065305	0.038254	0.522166	0.625725	0.062242	0	0.008646	0.070888	0.153016	1.491903	1.715807	18254.34	74.48972	216.639
Statewide Totals	2011	LHDT1	Aggregate	Aggregate	Diesel	355898.9	12655569.73	12655570	0	4476761	0	73.43935	1.018477	0	74.45783	1.090827	0.011646	0	1.102472	0.041851	0.380845	1.525169	1.140149	0.012172	0	1.152321	0.167405	1.088129	2.407855	7807.604	56.28157	0
Statewide Totals	2011	LHDT2	Aggregate	Aggregate	Gasoline	71050.92	2365813.063	2365813	0	1058553	0	1.428968	0.003267	0.780851	2.213087	0.006021	0	0.000815	0.006836	0.005216	0.08306	0.095112	0.006543	0	0.000884	0.007427	0.020863	0.237315	0.265605	2743.084	11.30961	31.8636
Statewide Totals	2011	LHDT2	Aggregate	Aggregate	Diesel	97139.09	3521079.859	3521080	0	1221888	0	18.26652	0.277983	0	18.54451	0.289997	0.003053	0	0.29305	0.011644	0.12362	0.428314	0.303109	0.003191	0	0.3063	0.046576	0.353201	0.706077	2708.629	24.37551	0
Statewide Totals	2011	MCY	Aggregate	Aggregate	Gasoline	656966.7	3836200.605	3836201	0	1313933	0	4.216817	0	0.377403	4.59422	0.009516	0	0.008517	0.018033	0.004229	0.01776	0.040022	0.010014	0	0.008946	0.018961	0.016915	0.050744	0.08662	884.3099	0	103.3675
Statewide Totals	2011	MDV	Aggregate	Aggregate	Gasoline	3924688	132509385.4	1.33E+08	0	18417707	0	68.88204	0	22.84322	91.72526	0.320962	0	0.074055	0.395017	0.292133	0.469154	1.156304	0.348066	0	0.080288	0.428354	1.168534	1.34044	2.937327	76394.61	0	2781.078
Statewide Totals	2011	MDV	Aggregate	Aggregate	Diesel	10984.35	378511.3369	378511.3	0	50953.71	0	0.141331	0	0	0.141331	0.018057	0	0	0.018057	0.000834	0.001247	0.020138	0.018873	0	0	0.018873	0.003338	0.003563	0.025774	206.2568	0	0
Statewide Totals	2011	MH	Aggregate	Aggregate	Gasoline	150602.3	1191946.467	1191946	0	15066.25	0	1.745321	0	0.006201	1.751522	0.005844	0	3.24E-05	0.005876	0.003942	0.020301	0.030119	0.006273	0	3.44E-05	0.006307	0.015767	0.058003	0.080077	2476.957	0	0.724178
Statewide Totals	2011	MH	Aggregate	Aggregate	Diesel	29408.7	299296.238	299296.2	0	2940.87	0	2.251448	0	0	2.251448	0.067218	0	0	0.067218	0.00132	0.005073	0.07361	0.070257	0	0	0.070257	0.005279	0.014493	0.090029	343.7662	0	0
Statewide Totals	2011	MHDT	Aggregate	Aggregate	Gasoline	54524.06	2261183.497	2261183	0	1090917	0	5.354048	0.0051	0.668315	6.027463	0.009062	0	0.004131	0.013193	0.007478	0.038468	0.059139	0.00973	0	0.004373	0.014103	0.02991	0.109909	0.153922	4667.539	33.99045	84.94083
Statewide Totals	2011	MHDT	Aggregate	Aggregate	Diesel	254233.9	9807401.192	9807401	0	3031418	0	96.85533	11.2664	0.24314	108.3649	3.425535	0.152654	0	3.578188	0.032432	0.167719	3.77834	3.580422	0.159556	0	3.739978	0.12973	0.479197	4.348905	12684.95	704.5598	0
Statewide Totals	2011	MHDT	Aggregate	Aggregate	Natural Ga:	346.8606	15159.67631	15159.68	0	3777.053	0	0.003561	0.002359	0	0.00592	7.05E-06	4.18E-06	0	1.12E-05	5.01E-05	0.000259	0.00032	7.67E-06	4.55E-06	0	1.22E-05	0.000201	0.000739	0.000952	15.46591	1.798062	0
Statewide Totals	2011	OBUS	Aggregate	Aggregate	Gasoline	16507.97	910295.8296	910295.8	0	330291.4	0	1.238038	0.001173	0.158686	1.397897	0.001009	0	0.00025	0.001259	0.00301	0.015554	0.019823	0.001092	0	0.000266	0.001358	0.012041	0.04444	0.057839	1844.176	7.14746	13.4881
Statewide Totals	2011	OBUS	Aggregate	Aggregate	Diesel	10874.74	623732.8866	623732.9	0	124914.4	0	8.016993	0.47652	0.00846	8.501973	0.308632	0.006261	0	0.314893	0.002063	0.016178	0.333134	0.322587	0.006545	0	0.329131	0.008251	0.046223	0.383605	969.7779	32.74992	0
Statewide Totals	2011	OBUS	Aggregate	Aggregate	Natural Ga:	277.4759	16715.6517	16715.65	0	2469.536	0	0.004123	0.000484	0	0.004607	7.95E-06	8.58E-07	0	8.81E-06	5.53E-05	0.000286	0.00035	8.65E-06	9.33E-07	0	9.58E-06	0.000221	0.000817	0.001048	17.40494	0.369086	0
Statewide Totals	2011	SBUS	Aggregate	Aggregate	Gasoline	4476.262	207234.9197	207234.9	0	17905.05	0	0.53082	0.00433	0.011408	0.546558	0.001992	0	8.63E-05	0.002078	0.000457	0.003648	0.006183	0.002122	0	9.17E-05	0.002214	0.001827	0.010422	0.014463	216.1105	13.40909	1.548763
Statewide Totals	2011	SBUS	Aggregate	Aggregate	Diesel	20124.68	435282.9377	435282.9	0	291405.4	0	5.040534	0.796122	0.012695	5.84935	0.198212	0.011866	0	0.210078	0.001439	0.007652	0.21917	0.207174	0.012403	0	0.219577	0.005758	0.021862	0.247197	588.7667	50.67184	0
Statewide Totals	2011	SBUS	Aggregate	Aggregate	Natural Ga:	952.3169	20271.2664	20271.27	0	13789.55	0	0.023091	0.005616	0	0.028707	8.78E-05	9.95E-06	0	9.77E-05	6.7E-05	0.000362	0.000527	9.55E-05	1.08E-05	0	0.000106	0.000268	0.001036	0.00141	38.19311	4.280096	0
Statewide Totals	2011	UBUS	Aggregate	Aggregate	Gasoline	1931.171	180432.0261	180432	0	7724.685	0	0.045014	0	0.008234	0.053248	5.99E-05	0	1.54E-06	6.15E-05	0.000534	0.00724	0.007836	6.52E-05	0	1.68E-06	6.68E-05	0.002136	0.020686	0.022889	349.8123	0	0.834868
Statewide Totals	2011	UBUS	Aggregate	Aggregate	Diesel	4518.253	440374.6922	440374.7	0	18073.01	0	6.956285	0	0	6.956285	0.007937	0	0	0.007937	0.003809	0.018607	0.030353	0.008296	0	0	0.008296	0.015236	0.053162	0.076694	833.4853	0

Statewide Totals	2011	UBUS	Aggregate	Aggregate	Natural Ga	5818.81	652587.1967	652587.2	0	23275.24	0	6.86149	0	0	6.86149	0.008222	0	0	0.008222	0.005915	0.027657	0.041794	0.008594	0	0	0.008594	0.02366	0.079021	0.111275	1384.478	0	0
Statewide Totals	2012	HHDT	Aggregate	Aggregate	Gasoline	3171.985	222973.7987	222973.8	0	63465.08	0	1.961243	0	0.015826	1.977069	0.001108	0	0.000524	0.001632	0.001229	0.00944	0.0123	0.001174	0	0.000551	0.001725	0.004916	0.02697	0.033611	620.1912	0	8.13789
Statewide Totals	2012	HHDT	Aggregate	Aggregate	Diesel	233463.4	33729156.08	33729156	0	3516518	0	477.6818	18.76959	0.930227	497.3816	17.11423	0.337872	0	17.4521	0.329781	1.282606	19.06449	17.88806	0.353149	0	18.24121	1.319123	3.664588	23.22492	63433.57	2289.743	0
Statewide Totals	2012	HHDT	Aggregate	Aggregate	Natural Ga	3597.427	248225.5372	248225.5	0	20035.39	0	1.503309	0.042519	0	1.545828	0.002951	2.29E-05	0	0.002974	0.002463	0.016873	0.022309	0.00321	2.49E-05	0	0.003234	0.00985	0.048208	0.061293	468.3168	31.5253	0
Statewide Totals	2012	LDA	Aggregate	Aggregate	Gasoline	13123742	4485799153.5	4.49E+08	0	61007955	0	113.0281	0	37.42091	150.449	1.066686	0	0.23894	1.305625	0.988948	1.339993	3.634567	1.157466	0	0.258517	1.415983	3.955794	3.82855	9.200327	168653.5	0	6189.394
Statewide Totals	2012	LDA	Aggregate	Aggregate	Diesel	78435.2	2370048.053	2370048	0	345197.3	0	1.741885	0	0	1.741885	0.145928	0	0	0.145928	0.005225	0.006941	0.158093	0.152526	0	0	0.152526	0.0209	0.01983	0.193257	722.4438	0	0
Statewide Totals	2012	LDA	Aggregate	Aggregate	Electricity	17835.9	502992.3792	0	502992.4	87396.14	194196.6	0	0	0	0	0	0	0	0	0.001109	0.000849	0.001958	0	0	0	0	0.004436	0.002425	0.006861	0	0	0
Statewide Totals	2012	LDA	Aggregate	Aggregate	Plug-in Hyb	10478.56	496177.0883	268864.2	227312.9	43328.86	68655.27	0.001983	0	0.005402	0.007385	0.000176	0	3.77E-05	0.000214	0.001094	0.000745	0.002052	0.000191	0	4.1E-05	0.000232	0.004376	0.002128	0.006736	86.10827	0	3.457839
Statewide Totals	2012	LDT1	Aggregate	Aggregate	Gasoline	1495749	44087669.36	44087669	0	6555116	0	28.17014	0	6.052842	34.22299	0.257908	0	0.051961	0.309869	0.097197	0.162867	0.569933	0.278898	0	0.056098	0.334996	0.388787	0.465334	1.189118	19473.02	0	849.9118
Statewide Totals	2012	LDT1	Aggregate	Aggregate	Diesel	3576.257	75511.3306	75511.33	0	13594.6	0	0.123631	0	0	0.123631	0.014508	0	0	0.014508	0.000166	0.000299	0.014974	0.015164	0	0	0.015164	0.000666	0.000856	0.016685	39.01445	0	0
Statewide Totals	2012	LDT1	Aggregate	Aggregate	Electricity	1252.361	27762.33421	0	27762.33	5661.264	10718.55	0	0	0	0	0	0	0	0	6.12E-05	4.72E-05	0.000108	0	0	0	0	0.000245	0.000135	0.00038	0	0	0
Statewide Totals	2012	LDT2	Aggregate	Aggregate	Gasoline	4710186	159856016.2	1.6E+08	0	21936673	0	74.52182	0	23.92674	98.44856	0.394284	0	0.080145	0.474428	0.352422	0.566695	1.393546	0.427376	0	0.0868	0.514176	1.40969	1.619128	3.542994	79067.79	0	2894.879
Statewide Totals	2012	LDT2	Aggregate	Aggregate	Diesel	2713.993	110131.2248	110131.2	0	13289.32	0	0.029259	0	0	0.029259	0.002779	0	0	0.002779	0.000243	0.00035	0.003371	0.002905	0	0	0.002905	0.000971	0.000999	0.004875	45.57566	0	0
Statewide Totals	2012	LHDT1	Aggregate	Aggregate	Gasoline	517672.7	16320023.97	16320024	0	7712552	0	11.16319	0.023731	5.558415	16.74533	0.051498	0	0.007299	0.058797	0.035979	0.49112	0.585896	0.05592	0	0.007904	0.063825	0.143918	1.4032	1.610943	17136.3	71.64282	207.2254
Statewide Totals	2012	LHDT1	Aggregate	Aggregate	Diesel	350284.3	12154325.81	12154326	0	4406135	0	68.61811	1.00241	0	69.62052	1.037342	0.011322	0	1.048665	0.040194	0.365761	1.454619	1.084246	0.011834	0	1.096081	0.160774	1.045032	2.301887	7564.608	55.3899	0
Statewide Totals	2012	LHDT2	Aggregate	Aggregate	Gasoline	71494.34	2358378.673	2358379	0	1065159	0	1.338677	0.003293	0.802651	2.14462	0.005601	0	0.000765	0.006365	0.005199	0.082799	0.094364	0.006087	0	0.00083	0.006916	0.020797	0.23657	0.264283	2713.733	11.41193	32.00733
Statewide Totals	2012	LHDT2	Aggregate	Aggregate	Diesel	98959.88	3559915.588	3559916	0	1244791	0	17.21364	0.283194	0	17.49683	0.277819	0.003072	0	0.280891	0.011772	0.124984	0.417647	0.290381	0.003211	0	0.293592	0.04709	0.357096	0.697778	2777.12	24.87417	0
Statewide Totals	2012	MCY	Aggregate	Aggregate	Gasoline	670051.7	3855921.146	3855921	0	1340103	0	4.01679	0	0.36891	4.3857	0.009059	0	0.008352	0.01741	0.00425	0.017852	0.039513	0.009538	0	0.008774	0.018312	0.017002	0.051005	0.086319	882.3362	0	102.6382
Statewide Totals	2012	MDV	Aggregate	Aggregate	Gasoline	3928967	131177813.8	1.31E+08	0	18323341	0	64.95808	0	22.06995	87.02802	0.296119	0	0.06878	0.364899	0.289198	0.467921	1.122018	0.321162	0	0.074579	0.395741	1.156791	1.336918	2.889449	75358.4	0	2746.962
Statewide Totals	2012	MDV	Aggregate	Aggregate	Diesel	16392.11	611004.1085	611004.1	0	78133.82	0	0.165985	0	0	0.165985	0.018547	0	0	0.018547	0.001347	0.001963	0.021858	0.019386	0	0	0.019386	0.005388	0.005609	0.030383	324.281	0	0
Statewide Totals	2012	MH	Aggregate	Aggregate	Gasoline	143721.4	1126611.329	1126611	0	14377.89	0	1.557577	0	0.005877	1.563454	0.005176	0	2.85E-05	0.005205	0.003726	0.01919	0.02812	0.005559	0	3.03E-05	0.005589	0.014903	0.054827	0.075319	2345.147	0	0.675927
Statewide Totals	2012	MH	Aggregate	Aggregate	Diesel	29696.33	291774.4062	291774.4	0	2969.633	0	2.160219	0	0	2.160219	0.06478	0	0	0.06478	0.001287	0.004946	0.071012	0.067709	0	0	0.067709	0.005146	0.014131	0.086986	335.2966	0	0
Statewide Totals	2012	MHDT	Aggregate	Aggregate	Gasoline	53008.78	2217494.377	2217494	0	1060600	0	4.902156	0.004978	0.639167	5.546301	0.007993	0	0.003645	0.011638	0.007333	0.037716	0.056687	0.008584	0	0.00386	0.012444	0.029332	0.107761	0.149537	4582.035	33.14334	80.37709
Statewide Totals	2012	MHDT	Aggregate	Aggregate	Diesel	253766	9752039.566	9752040	0	3021990	0	91.20594	10.93194	0.517182	102.6551	3.236091	0.143258	0	3.37935	0.032249	0.166774	3.578373	3.382413	0.149736	0	3.532149	0.128997	0.476496	4.137643	12508.07	704.2586	0
Statewide Totals	2012	MHDT	Aggregate	Aggregate	Natural Ga	431.1716	20558.66243	20558.66	0	4728.908	0	0.004724	0.002912	0	0.007636	9.37E-06	5.16E-06	0	1.45E-05	6.8E-05	0.00035	0.000432	1.02E-05	5.61E-06	0	1.58E-05	0.000272	0.000999	0.001287	20.78995	2.221848	0
Statewide Totals	2012	OBUS	Aggregate	Aggregate	Gasoline	16234.45	883121.9287	883121.9	0	324818.9	0	1.132026	0.001155	0.153521	1.286701	0.000907	0	0.000219	0.001126	0.00292	0.015092	0.019139	0.000982	0	0.000233	0.001215	0.011682	0.043121	0.056019	1794.315	7.048209	13.1076
Statewide Totals	2012	OBUS	Aggregate	Aggregate	Diesel	10989.12	619418.7706	619418.8	0	127748.2	0	7.357737	0.476803	0.022328	7.856868	0.279682	0.005726	0	0.285407	0.002048	0.01585	0.303306	0.292328	0.005985	0	0.298312	0.008194	0.045286	0.351791	956.5183	34.42079	0
Statewide Totals	2012	OBUS	Aggregate	Aggregate	Natural Ga	315.1374	17765.84985	17765.85	0	2804.723	0	0.004407	0.00055	0	0.004957	8.49E-06	9.75E-07	0	9.46E-06	5.88E-05	0.000304	0.000373	9.23E-06	1.06E-06	0	1.03E-05	0.000235	0.000869	0.001115	18.56254	0.419618	0
Statewide Totals	2012	SBUS	Aggregate	Aggregate	Gasoline	4442.141	206805.3553	206805.4	0	17768.56	0	0.492051	0.004319	0.011461	0.50783	0.001813	0	7.83E-05	0.001891	0.000456	0.00364	0.005987	0.001932	0	8.32E-05	0.002015	0.001824	0.010399	0.014237	214.7941	13.34716	1.510686
Statewide Totals	2012	SBUS	Aggregate	Aggregate	Diesel	20666.78	430998.1935	430998.2	0	299255	0	4.823071	0.806468	0.025617	5.655156	0.148958	0.008694	0	0.157652	0.001425	0.007576	0.166653	0.155693	0.009087	0	0.16478	0.005701	0.021645	0.192126	582.5667	52.66359	0
Statewide Totals	2012	SBUS	Aggregate	Aggregate	Natural Ga	1043.219	22247.75086	22247.75	0	15105.82	0	0.025415	0.006152	0	0.031567	9.65E-05	1.09E-05	0	0.000107	7.36E-05	0.000398	0.000579	0.000105	1.19E-05	0	0.000117	0.000294	0.001137	0.001548	42.03483	4.693526	0
Statewide Totals	2012	UBUS	Aggregate	Aggregate	Gasoline	2041.117	194799.6075	194799.6	0	8164.467	0	0.05159	0	0.00874	0.06033	5.93E-05	0	1.31E-06	6.07E-05	0.000577	0.00782	0.008457	6.45E-05	0	1.43E-06	6.6E-05	0.002308	0.022342	0.024715	374.2847	0	0.884317
Statewide Totals	2012	UBUS	Aggregate	Aggregate	Diesel	4139.452	424680.9241	424680.9	0	16557.81	0	6.208412	0	0	6.208412	0.006688	0	0	0.006688	0.003702	0.017984	0.028374	0.006991	0	0	0.006991	0.014808	0.051382	0.073181	790.3035	0	0
Statewide Totals	2012	UBUS	Aggregate	Aggregate	Electricity	30.43383	838.2802905	0	838.2803	121.7353	1733.095	0	0	0	0	0	0	0	0	4.6E-07	2.69E-06	3.15E-06	0	0	0	0	1.84E-06	7.69E-06	9.54E-06	0	0	0
Statewide Totals	2012	UBUS	Aggregate	Aggregate	Natural Ga	6182.998	678521.3014	678521.3	0	24731.99	0	6.624769	0	0	6.624769	0.008056	0	0	0.008056	0.006126	0.028744	0.042926	0.008421	0	0	0.008421	0.024503	0.082127	0.11505	1457.777	0	0
Statewide Totals	2013	HHDT	Aggregate	Aggregate	Gasoline	2795.407	193135.3729	193135.4	0	55930.51	0	1.667352	0	0.018199	1.685551	0.000926	0	0.000429	0.001354	0.001064	0.008125	0.010544	0.000981	0	0.000451	0.001432	0.004258	0.023215	0.028905	533.9782	0	6.810766
Statewide Totals	2013	HHDT	Aggregate	Aggregate	Diesel	241346.7	36264800.59	36264801	0	3632540	0	427.8227	18.98203	1.802843	448.6076	14.00027	0.243171	0	14.24344	0.354553	1.333302	15.9313	14.6333	0.254167	0	14.88747	1.418213	3.809435	20.11511	66622.69	2626.076	0
Statewide Totals	2013	HHDT	Aggregate	Aggregate	Natural Ga	5088.208	420986.4559	420986.5	0	34924.77	0	1.744106	0.068051	0	1.812157	0.003289	5.67E-05	0	0.003346	0.004177	0.025323	0.032845	0.003577	6.17E-05	0	0.003639	0.016706	0.072351	0.092695	745.4175	50.93422	0
Statewide Totals	2013	LDA	Aggregate	Aggregate	Gasoline	13410044	460981225.1	4.61E+08	0	62351338	0	101.4264	0	35.44142	136.8678	0.975691	0	0.222456	1.198147	1.01629	1.375696	3.590133	1.058813	0	0.240721	1.299533	4.065162	3.930559	9.295254	169883.2	0	6129.898
Statewide Totals	2013	LDA	Aggregate	Aggregate	Electricity	33438.28	1013024.471	0	1013024	167521.5	391111.1	0	0	0	0	0	0	0	0	0.002233	0.001705	0.003939	0	0	0	0	0.008933	0.004872	0.013805	0	0	0
Statewide Totals	2013	LDA	Aggregate	Aggregate	Plug-in Hyb	28605.45	1342186.432	727292.5	614893.9	118283.5	185716.3	0.005362	0	0.01475	0.020112	0.000633	0	0.000143	0.000776	0.002959	0.002015	0.00575	0.000688	0	0.000156	0.000844	0.011836	0.005756	0.018436	231.721	0	9.216715
Statewide Totals	2013	LDT1	Aggregate	Aggregate	Gasoline	1476705	43684740.63	43684741	0	6465723	0	25.45944	0	5.66311	31.12255	0.232704	0	0.047259	0.279963	0.096308	0.161137	0.537409	0.251708	0	0.05104	0.302748	0.385234	0.460393	1.148374	18987.59	0	815.2392
Statewide Totals	2013	LDT1	Aggregate	Aggregate	Diesel	3483.87	74287.4816	74287.48	0	13215.78	0	0.114766	0	0	0.114766	0.013391	0	0	0.013391	0.000164	0.000293	0.013848	0.013997	0	0	0.013997	0.000655	0.000838	0.01549	38.28609	0	0
Statewide Totals	2013	LDT1	Aggregate	Aggregate	Electricity	1941.207	51268.08809	0	51268.09	9255.04	19793.71	0	0	0	0	0	0	0	0	0.000113	8.67E-05	0.0002	0	0	0	0	0.000452	0.000248	0.0007	0	0	0
Statewide Totals	2013	LDT2	Aggregate	Aggregate	Gasoline	4879351	166070517.3	1.66E+08	0	22705560	0	68.28092	0	22.81412	91.09504	0.367791	0	0.075123	0.442914	0.366123	0.588509	1.397546	0.398744	0	0.081383	0.480127	1.464492	1.681454	3.626073	80380.48	0	2907.002
Statewide Totals	2013	LDT2	Aggregate	Aggregate	Diesel	4736.54	195748.8037	195748.8	0	23397.25	0	0.036959	0	0	0.036959	0.003666	0	0	0.003666	0.000432	0.00063	0.004727	0.003831	0	0	0.003831	0.001726	0.001799	0.007357	79.43827	0	0
Statewide Totals	2013	LHDT1	Aggregate	Aggregate	Gasoline	505638.4	15771483.29	15771483	0	7533259	0	10.15908	0.023221	5.564543	15.74684	0.046822	0	0.00677	0.053593	0.03477	0.474613	0.562975	0.050841	0	0.007331	0.058172	0.139081	1.356037	1.553289	16337.66	69.66074	200.775
Statewide Totals	2013	LHDT1	Aggregate	Aggregate	Diesel	353355.5	12090778.73	12090779	0	4444768	0	65.05757	1.011199	0	66.06877	0.999251	0.011266	0	1.010517	0.039983	0.363849	1.41435	1.044433	0.011776	0	1.056208	0.159934	1.039569	2.255711	7620.88	55.83418	0
Statewide Totals	2013	LHDT2	Aggregate	Aggregate	Gasoline	72174.73	2366545.839	2366546	0	1075296	0	1.241239	0.00333	0.824929	2.069499	0.005208	0	0.000718	0.005926	0.005217	0.083086	0.09423	0.005659	0	0.00078	0.006439	0.020869	0.237389	0.264697	2678.738	11.4683	32.05163
Statewide Totals	2013	LHDT2	Aggregate	Aggregate	Diesel	102565.7	3655054.316	3655054	0	1290147	0	16.42252	0.293513	0	16.71603	0.269784	0.003147	0	0.272931	0.012087	0.128324	0.413342	0.281982	0.003289	0	0.285272	0.048348	0.36664	0.700259	2885.11	25.80608	0
Statewide Totals	2013	MCY	Aggregate	Aggregate	Gasoline	682412.9	3886121.403	3886121	0	1364826	0	3.832905	0	0.359487	4.192392	0.008714	0	0.008169	0.016884	0.004284	0.017992	0.039159	0.009184	0	0.008585	0.017769	0.017135	0.051405	0.086308	876.6495	0	100.9176
Statewide Totals	2013	MDV	Aggregate	Aggregate	Gasoline	3902869	128720456.4	1.29E+08	0	18094512	0	60.69793	0	21.21201	81.90994	0.274127	0	0.064079	0.338205	0.28378	0.461623	1.083608	0.297343	0	0.06949	0.366833	1.135121	1.318921	2.820875	73050.89	0	2672.052
Statewide Totals	2013	MDV	Aggregate	Aggregate	Diesel	19490.27	739725.2108	739725.2	0	93519.78	0	0.16368	0	0	0.16368	0.01774	0	0	0.01774	0.001631	0.002375	0.021747	0.018543	0	0	0.018543	0.006523	0.006787	0.031853	387.4491	0	0
Statewide Totals	2013	MH	Aggregate	Aggregate	Gasoline	137880.4	1067481.807	1067482	0	13793.55	0	1.39322	0	0.005625	1.398845	0.004628	0	2.56E-05	0.004654	0.00353	0.018183	0.026367	0.004971	0	2.72E-05	0.004998	0.01412	0.05195	0.071069	2209.95	0	0.633309
Statewide Totals	2013	MH	Aggregate	Aggregate	Diesel	30228.26	289755.1446	289755.1	0	3022.826	0	2.072269	0	0	2.072269	0.061856	0	0	0.061856	0.001278	0.004912	0.068045	0.064653	0	0	0.064653	0.00511	0.014034	0.083798	333.0798	0	0
Statewide Totals	2013	MHDT	Aggregate	Aggregate	Gasoline	53141	2266493.528	2266494	0	1063245	0	4.487732	0.005015	0.627158	5.119905	0.007133	0	0.003244	0.010377	0.007495	0.038531	0.056403	0.007663	0	0.003438	0.011101	0.029981	0.110089	0.151171	4649.478	33.08345	77.34537
Statewide Totals	2013	MHDT	Aggregate	Aggregate	Diesel	255742.9	10529118.51	10529119	0	3041833	0	91.52829	10.70013	0.807817	103.0362	2.859746	0.102023	0	2.961769	0.034819	0.180057	3.176645	2.989051	0.106636	0	3.095687	0.139276	0.514447	3.749411	13320.33	712.8787	0
Statewide Totals	2013	MHDT	Aggregate	Aggregate	Natural Ga	470.2542	23380.15482	23380.15	0	5068.508	0	0.005414	0.003202	0	0.008616	1.07E-05	5.67E-06	0	1.64E-05	7.73E-05	0.000398	0.000491	1.16E-05	6.17E-06	0	1.78E-05	0.000309	0.001136	0.001463	23.80233	2.452178	0
Statewide Totals	2013	OBUS	Aggregate	Aggregate	Gasoline	16794.24	909555.9951	909556	0	336019.2	0	1.049479	0.001196	0.156844	1.20752	0.000857	0	0.000205	0.001062	0.003008	0.015546	0.019616	0.000928	0	0.000218	0.001146	0.012031	0.044418	0.057596	1839.598	7.257661	13.28056
Statewide Totals	2013	OBUS	Aggregate	Aggregate	Diesel	9923.08	667309.3992	667309.4	0	117080.5	0	7.124996	0.425645	0.036782	7.587423	0.265177	0.004663	0	0.26984	0.002207	0.016854	0.288901	0.277167	0.004874	0	0.28204	0.008827	0.048155	0.339023	1014.683	32.52365	0
Statewide Totals	2013	OBUS	Aggregate	Aggregate	Natural Ga	316.4831	20486.75887	20486.76	0	2816.699	0	0.005302	0.000552	0	0.005854	1.01E-05	9.79E-07	0	1.11E-05	6.77E-05	0.000353	0.000432	1.1E-05	1.06E-06	0	1.21E-05	0.000271	0.001009	0.001292	21.94487	0.423746	0
Statewide Totals	2013	SBUS	Aggregate	Aggregate	Gasoline	4118.445	185981.7428	185981.7	0	16473.78	0	0.234022	0.004119	0.01104	0.249181	0.000468	0	1.78E-05	0.000486	0.00041	0.003285	0.004181	0.000507	0	1.92E-05	0.000527	0.00164	0.009387	0.011554	185.7065	12.34125	1.219066
Statewide Totals	2013	SBUS	Aggregate	Aggregate	Diesel	20843.82	456730.5638	456730.6	0	301818.6	0	4.87674	0.804913	0.032902	5.714555	0.113669	0.006063	0	0.119732	0.00151	0.008024	0.129267	0.118809	0.006337	0	0.125146	0.006042	0.022926	0.154113	615.0712	53.59467	0
Statewide Totals	2013	SBUS	Aggregate	Aggregate	Natural Ga	1449.245	32774.69876	32774.7	0	20985.07	0	0.038226	0.008546	0	0.046772	0.000143	1.51E-05	0	0.000159	0.000108	0.000587	0.000854	0.000156	1.65E-05	0	0.000172	0.000434	0.001678	0.002284	62.94469	6.520367	0
Statewide Totals	2013	UBUS	Aggregate	Aggregate	Gasoline	2223.654	206040.2848	206040.3	0	8894.615	0	0.054551	0	0.00951	0.064062	5.79E-05	0	1.36E-06	5.93E-05	0.000613	0.00829	0.008962	6.3E-05	0	1.48E-06	6.45E-05	0.002452	0.023685	0.026201	393.8542	0	0.973867
Statewide Totals	2013	UBUS	Aggregate	Aggregate	Diesel	4022.614	401958.5948	401958.6	0	16090.46	0	5.519149	0	0	5.519149	0.005971	0	0	0.005971	0.00354	0.017031	0.026541	0.006241	0	0	0.006241	0.014159	0.04866	0.069059	740.6057	0	0
Statewide Totals	2013	UBUS	Aggregate	Aggregate	Electricity	52.00137	3286.999329	0	3286.999	208.0055	6819.67	0	0	0	0	0	0	0	0	2.57E-05	5.84E-05	8.41E-05	0	0	0	0	0.000103	0.000167	0.000269	0	0	0
Statewide Totals	2013	UBUS	Aggregate	Aggregate	Natural Ga	6951.731	776091.1561	776091.2	0	27806.92	0	6.355431	0	0	6.355431	0.007633	0	0	0.007633	0.007019	0.032881	0.047533	0.007978	0	0	0.007978	0.028074	0.093946	0.129998	1754.702	0	0
Statewide Totals	2014	HHDT	Aggregate	Aggregate	Gasoline	1760.058	121433.328	121433.3	0	35215.25	0	0.987776	0	0.011928	0.999704	0.00056	0	0.000259	0.000819	0.000669	0.004958	0.006447	0.000593	0	0.000273	0.000866	0.002677	0.014167	0.01771	333.8542	0	4.171876
Statewide Totals	2014	HHDT	Aggregate	Aggregate	Diesel	250724.3	36387810.18	36387810	0	3824767	0	364.0178	21.24585	2.812037	388.0757	8.75352	0.159014	0	8.912533	0.355749	1.293928	10.56221	9.149315	0.166204	0	9.315519	1.422997	3.696936	14.43545	66907.02	3148.912	0
Statewide Totals	2014	HHDT	Aggregate	Aggregate	Natural Ga	5860.804	465616.4848	465616.5	0	40532.46	0	1.724639	0.079141	0	1.803779	0.003202	6.77E-05	0	0.00327	0.004619	0.027827	0.035716	0.003483	7.36E-05	0	0.003556	0.018477	0.079504	0.101538	806.6298	58.6186	0
Statewide Totals	2014	LDA	Aggregate	Aggregate	Gasoline	13609448	474015888.9	4.74E+08	0	63353029	0	89.83475	0	33.35106	123.1858	0.906067	0	0.20334	1.109407	1.045027	1.413676	3.568109	0.983709	0	0.220242	1.203951	4.180108	4.039073	9.423132	171617.4	0	6037.7
Statewide Totals	2014	LDA	Aggregate	Aggregate	Diesel	101287.5	3519654.742	3519655	0	464670.1	0	1.452089	0	0	1.452089	0.118033	0	0	0.118033	0.00776	0.010177	0.13597	0.12337	0	0	0.12337	0.031038	0.029078	0.183486	1000.743	0	0
Statewide Totals	2014	LDA	Aggregate	Aggregate	Electricity	47974.55	1553812.897	0	1553813	245094.6	599900	0	0	0	0	0	0	0	0	0.003426	0.002611	0.006036	0	0	0	0	0.013702	0.007459	0.021161	0	0	0
Statewide Totals	2014	LDA	Aggregate	Aggregate	Plug-in Hyb	55087.52	2577512.32	1396680	1180832	227786.9	356646.5	0.010289	0	0.028407	0.038696	0.00156	0	0.000363	0.001924	0.005682	0.00387	0.011477	0.001697	0	0.000395	0.002092	0.02273	0.011058	0.03588	443.5143	0	17.61438
Statewide Totals	2014	LDT1	Aggregate	Aggregate	Gasoline	1443741	43518043.86	43518044	0	6348191	0	21.96137	0	5.225243	27.18661	0.198878	0	0.039592	0.23847	0.095941	0.160005	0.494417	0.21555	0	0.042864	0.258414	0.383764	0.457159	1.099336	18580.07	0	770.1821

Statewide Totals	2014	LDT1	Aggregate	Aggregate	Diesel	3117.533	64951.89225	64951.89	0	11665.16	0	0.098901	0	0	0.098901	0.011623	0	0	0.011623	0.000143	0.000258	0.012024	0.012148	0	0	0.012148	0.000573	0.000738	0.013459	33.34161	0	0
Statewide Totals	2014	LDT1	Aggregate	Aggregate	Electricity	2821.778	81848.2791	0	81848.28	13827.27	31600.19	0	0	0	0	0	0	0	0	0.00018	0.000138	0.000318	0	0	0	0	0.000722	0.000394	0.001116	0	0	0
Statewide Totals	2014	LDT2	Aggregate	Aggregate	Gasoline	5024240	172405408.2	1.72E+08	0	23359456	0	62.6026	0	21.70357	84.30616	0.352296	0	0.071587	0.423883	0.380089	0.610427	1.4144	0.382061	0	0.077581	0.459643	1.520357	1.744079	3.724078	81783.14	0	2909.711
Statewide Totals	2014	LDT2	Aggregate	Aggregate	Diesel	7801.605	333103.0947	333103.1	0	38994.4	0	0.042256	0	0	0.042256	0.004268	0	0	0.004268	0.000734	0.001068	0.00607	0.004461	0	0	0.004461	0.002937	0.003051	0.010449	131.8954	0	0
Statewide Totals	2014	LHDT1	Aggregate	Aggregate	Gasoline	507192	15396337.7	15396338	0	7556404	0	9.868185	0.023273	5.648405	15.53986	0.050952	0	0.009297	0.06025	0.033943	0.463324	0.557516	0.055052	0	0.009968	0.065019	0.135772	1.323781	1.524573	15859.47	69.67592	210.2226
Statewide Totals	2014	LHDT1	Aggregate	Aggregate	Diesel	355201.8	12042363.28	12042363	0	4467992	0	61.9548	1.016482	0	62.97128	0.967394	0.011196	0	0.97859	0.039823	0.362392	1.380805	1.011136	0.011702	0	1.022838	0.159293	1.035406	2.217537	7669.82	56.08383	0
Statewide Totals	2014	LHDT2	Aggregate	Aggregate	Gasoline	72173.24	2385260.2	2385260	0	1075274	0	1.131627	0.003338	0.839847	1.974812	0.004708	0	0.000633	0.00534	0.005259	0.083743	0.094342	0.005119	0	0.000688	0.005806	0.021034	0.239266	0.266107	2655.748	11.43384	31.76236
Statewide Totals	2014	LHDT2	Aggregate	Aggregate	Diesel	106587.1	3815020.941	3815021	0	1340731	0	15.75932	0.305021	0	16.06434	0.262873	0.003228	0	0.266101	0.012616	0.13394	0.412657	0.274759	0.003374	0	0.278132	0.050464	0.382686	0.711283	3041.985	26.8307	0
Statewide Totals	2014	MCY	Aggregate	Aggregate	Gasoline	695041.2	3951333.495	3951333	0	1390082	0	3.689442	0	0.349189	4.038631	0.00868	0	0.008183	0.016862	0.004356	0.018294	0.039512	0.009159	0	0.008603	0.017762	0.017422	0.052267	0.087451	880.5965	0	99.27853
Statewide Totals	2014	MDV	Aggregate	Aggregate	Gasoline	4030858	132836138.1	1.33E+08	0	18606456	0	58.43514	0	20.79891	79.23405	0.272156	0	0.063422	0.335577	0.292854	0.477052	1.105483	0.295145	0	0.068757	0.363902	1.171415	1.363005	2.898322	74404.16	0	2705.998
Statewide Totals	2014	MDV	Aggregate	Aggregate	Diesel	24823.26	978373.4696	978373.5	0	120509.9	0	0.173431	0	0	0.173431	0.017439	0	0	0.017439	0.002157	0.003115	0.022711	0.018227	0	0	0.018227	0.008628	0.0089	0.035755	502.3496	0	0
Statewide Totals	2014	MH	Aggregate	Aggregate	Gasoline	134225.3	1044461.016	1044461	0	13427.9	0	1.26963	0	0.005461	1.275091	0.004162	0	2.25E-05	0.004184	0.003454	0.017788	0.025427	0.004473	0	2.4E-05	0.004497	0.013816	0.050823	0.069137	2153.243	0	0.597233
Statewide Totals	2014	MH	Aggregate	Aggregate	Diesel	30745.79	288614.8497	288614.8	0	3074.579	0	2.004098	0	0	2.004098	0.0596	0	0	0.0596	0.001273	0.004893	0.065766	0.062295	0	0	0.062295	0.00509	0.01398	0.081365	331.9746	0	0
Statewide Totals	2014	MHDT	Aggregate	Aggregate	Gasoline	53737.13	2351513.164	2351513	0	1075173	0	4.290561	0.005097	0.621615	4.917273	0.006432	0	0.002763	0.009195	0.007776	0.039955	0.056927	0.006919	0	0.002933	0.009851	0.031105	0.114158	0.155115	4780.858	33.31152	74.32833
Statewide Totals	2014	MHDT	Aggregate	Aggregate	Diesel	258616	10571552.85	10571553	0	3071193	0	85.05517	10.4151	1.07706	96.54733	2.538499	0.092032	0	2.630531	0.034959	0.180783	2.846273	2.653278	0.096193	0	2.749471	0.139838	0.516524	3.405833	13387.8	720.1995	0
Statewide Totals	2014	MHDT	Aggregate	Aggregate	Natural Ga:	579.112	28373.8475	28373.85	0	6126.33	0	0.006565	0.003979	0	0.010545	1.29E-05	7.05E-06	0	1.99E-05	9.38E-05	0.000482	0.000596	1.4E-05	7.67E-06	0	2.17E-05	0.000375	0.001378	0.001775	28.63934	3.030785	0
Statewide Totals	2014	OBUS	Aggregate	Aggregate	Gasoline	16239.46	837667.0682	837667.1	0	324919.2	0	1.001418	0.001154	0.153439	1.156011	0.000844	0	0.000199	0.001043	0.00277	0.014322	0.018135	0.000915	0	0.000212	0.001127	0.01108	0.04092	0.053127	1688.261	6.99277	12.7902
Statewide Totals	2014	OBUS	Aggregate	Aggregate	Diesel	10000.01	673142.4479	673142.4	0	119052.5	0	6.79221	0.409963	0.045744	7.247917	0.280833	0.004597	0	0.28543	0.002226	0.016709	0.304364	0.293531	0.004805	0	0.298336	0.008904	0.047739	0.354979	1028.222	33.31315	0
Statewide Totals	2014	OBUS	Aggregate	Aggregate	Natural Ga:	241.0919	17723.31169	17723.31	0	2145.718	0	0.004482	0.000421	0	0.004902	8.62E-06	7.46E-07	0	9.36E-06	5.86E-05	0.000305	0.000372	9.37E-06	8.11E-07	0	1.02E-05	0.000234	0.00087	0.001115	18.75847	0.321938	0
Statewide Totals	2014	SBUS	Aggregate	Aggregate	Gasoline	4248.627	195985.3348	195985.3	0	16994.51	0	0.224581	0.004259	0.011473	0.240313	0.000445	0	1.68E-05	0.000462	0.000432	0.003457	0.004351	0.000483	0	1.82E-05	0.000501	0.001728	0.009877	0.012106	193.1091	12.63228	1.230855
Statewide Totals	2014	SBUS	Aggregate	Aggregate	Diesel	20573.83	451812.8791	451812.9	0	297909.1	0	4.693863	0.775589	0.040096	5.509548	0.028089	0.001419	0	0.029508	0.001494	0.007934	0.038937	0.029359	0.001483	0	0.030843	0.005976	0.02267	0.059489	610.8402	53.12402	0
Statewide Totals	2014	SBUS	Aggregate	Aggregate	Natural Ga:	1592.656	39906.77565	39906.78	0	23061.65	0	0.047046	0.009392	0	0.056438	0.000175	1.66E-05	0	0.000192	0.000132	0.000716	0.00104	0.000191	1.81E-05	0	0.000209	0.000528	0.002045	0.002782	76.64456	7.138219	0
Statewide Totals	2014	UBUS	Aggregate	Aggregate	Gasoline	2150.302	199571.8632	199571.9	0	8601.209	0	0.051304	0	0.009312	0.060616	6E-05	0	1.33E-06	6.13E-05	0.000592	0.008017	0.00867	6.52E-05	0	1.45E-06	6.67E-05	0.002368	0.022906	0.02534	374.2744	0	0.936881
Statewide Totals	2014	UBUS	Aggregate	Aggregate	Diesel	3857.957	348720.64	348720.6	0	15431.08	0	4.209243	0	0	4.209243	0.004768	0	0	0.004768	0.003005	0.014779	0.022552	0.004984	0	0	0.004984	0.012021	0.042225	0.05923	616.7645	0	0
Statewide Totals	2014	UBUS	Aggregate	Aggregate	Electricity	51.27663	1302.002087	0	1302.002	205.1065	2619.237	0	0	0	0	0	0	0	0	4.95E-06	1.61E-05	2.1E-05	0	0	0	0	1.98E-05	4.59E-05	6.57E-05	0	0	0
Statewide Totals	2014	UBUS	Aggregate	Aggregate	Natural Ga:	7085.464	775329.611	775329.6	0	28338.6	0	5.673116	0	0	5.673116	0.006617	0	0	0.006617	0.006994	0.032855	0.046465	0.006916	0	0	0.006916	0.027975	0.093871	0.128761	1778.59	0	0
Statewide Totals	2015	HHDT	Aggregate	Aggregate	Gasoline	870.251	26364.46475	26364.46	0	17411.98	0	0.389817	0	0.010053	0.39987	0.000373	0	0.000186	0.000559	0.000145	0.001127	0.001831	0.000394	0	0.000196	0.00059	0.000581	0.00322	0.004391	78.75442	0	2.469502
Statewide Totals	2015	HHDT	Aggregate	Aggregate	Diesel	262464	36298335.29	36298335	0	4036940	0	313.1524	22.94337	3.982878	340.0787	7.208446	0.135914	0	7.34436	0.354864	1.253372	8.952597	7.53438	0.14206	0	7.67644	1.419457	3.581064	12.67696	66501.24	3573.709	0
Statewide Totals	2015	HHDT	Aggregate	Aggregate	Natural Ga:	7179.477	534874.4976	534874.5	0	50924.97	0	1.761642	0.098732	0	1.860374	0.003123	8.94E-05	0	0.003213	0.005306	0.03178	0.040299	0.003397	9.72E-05	0	0.003494	0.021226	0.090799	0.115519	903.5883	71.87384	0
Statewide Totals	2015	LDA	Aggregate	Aggregate	Gasoline	13950023	501705189.7	5.02E+08	0	65070535	0	80.52157	0	31.44711	111.9687	0.894422	0	0.19245	1.086872	1.106071	1.495106	3.68805	0.971478	0	0.208631	1.180109	4.424286	4.271733	9.876127	179557.2	0	6052.417
Statewide Totals	2015	LDA	Aggregate	Aggregate	Diesel	115310.4	4249858.175	4249858	0	535913.2	0	1.374358	0	0	1.374358	0.109322	0	0	0.109322	0.009369	0.012286	0.130977	0.114265	0	0	0.114265	0.037477	0.035102	0.186845	1180.834	0	0
Statewide Totals	2015	LDA	Aggregate	Aggregate	Electricity	84849.81	2819833.668	0	2819834	433444.4	1088689	0	0	0	0	0	0	0	0	0.006217	0.004738	0.010955	0	0	0	0	0.024867	0.013538	0.038405	0	0	0
Statewide Totals	2015	LDA	Aggregate	Aggregate	Plug-in Hyb	76002.82	3575822.64	1937636	1638186	314271.6	494781.1	0.014259	0	0.039208	0.053467	0.002489	0	0.000584	0.003073	0.007883	0.005369	0.016326	0.002707	0	0.000635	0.003342	0.031533	0.015341	0.050217	617.614	0	24.2937
Statewide Totals	2015	LDT1	Aggregate	Aggregate	Gasoline	1517351	48349819.81	48349820	0	6731863	0	20.42332	0	4.986723	25.41004	0.194172	0	0.037706	0.231879	0.106593	0.175026	0.513498	0.210553	0	0.040847	0.2514	0.426373	0.500074	1.177846	20262.17	0	788.1293
Statewide Totals	2015	LDT1	Aggregate	Aggregate	Diesel	2920.421	58556.69684	58556.7	0	10634.27	0	0.090372	0	0	0.090372	0.011108	0	0	0.011108	0.000129	0.000235	0.011472	0.011611	0	0	0.011611	0.000516	0.000671	0.012798	29.74932	0	0
Statewide Totals	2015	LDT1	Aggregate	Aggregate	Electricity	2711.937	77608.89158	0	77608.89	13128.83	29963.44	0	0	0	0	0	0	0	0	0.000171	0.000131	0.000302	0	0	0	0	0.000684	0.000374	0.001059	0	0	0
Statewide Totals	2015	LDT2	Aggregate	Aggregate	Gasoline	5118411	178399337.1	1.78E+08	0	23711718	0	59.76113	0	21.03929	80.80042	0.350038	0	0.069378	0.419416	0.393304	0.633931	1.446651	0.3799	0	0.075256	0.455156	1.573214	1.811231	3.839601	83944.95	0	2916.731
Statewide Totals	2015	LDT2	Aggregate	Aggregate	Diesel	14053.27	592493.1615	592493.2	0	68855.82	0	0.104143	0	0	0.104143	0.011863	0	0	0.011863	0.001306	0.001909	0.015078	0.012399	0	0	0.012399	0.005225	0.005454	0.023078	232.9444	0	0
Statewide Totals	2015	LDT2	Aggregate	Aggregate	Electricity	874.96	25159.02465	0	25159.02	4238.921	9713.46	0	0	0	0	0	0	0	0	5.55E-05	4.25E-05	9.79E-05	0	0	0	0	0.000222	0.000121	0.000343	0	0	0
Statewide Totals	2015	LHDT1	Aggregate	Aggregate	Gasoline	498888.9	15600575.75	15600576	0	7432701	0	9.199178	0.022938	5.665444	14.88756	0.046927	0	0.008112	0.055038	0.034393	0.46947	0.558902	0.050751	0	0.008711	0.059461	0.137574	1.341342	1.538377	15870.57	68.85682	204.7248
Statewide Totals	2015	LHDT1	Aggregate	Aggregate	Diesel	362293.3	12577307.97	12577308	0	4557194	0	59.99064	1.036776	0	61.02741	0.953078	0.011278	0	0.964356	0.041592	0.37849	1.384438	0.996172	0.011788	0	1.00796	0.166369	1.0814	2.255729	8112.752	57.05977	0
Statewide Totals	2015	LHDT2	Aggregate	Aggregate	Gasoline	72058.78	2429698.286	2429698	0	1073568	0	1.083515	0.003336	0.844764	1.931615	0.004629	0	0.000602	0.005232	0.005357	0.085303	0.095891	0.005033	0	0.000655	0.005688	0.021426	0.243724	0.270838	2680.399	11.46504	31.7984
Statewide Totals	2015	LHDT2	Aggregate	Aggregate	Diesel	114007.5	4229901.015	4229901	0	1434071	0	15.48391	0.326256	0	15.81017	0.265376	0.00343	0	0.268806	0.013988	0.148506	0.4313	0.277375	0.003585	0	0.28096	0.055952	0.424303	0.761215	3409.153	28.64305	0
Statewide Totals	2015	MCY	Aggregate	Aggregate	Gasoline	721328.6	4186368.783	4186369	0	1442657	0	3.708479	0	0.346476	4.054955	0.00907	0	0.008117	0.017187	0.004615	0.019382	0.041183	0.009587	0	0.00854	0.018127	0.018459	0.055376	0.091962	929.6208	0	100.4085
Statewide Totals	2015	MDV	Aggregate	Aggregate	Gasoline	4011877	135015635.3	1.35E+08	0	18474776	0	53.70833	0	19.32254	73.03087	0.267013	0	0.060278	0.327292	0.297659	0.484446	1.109396	0.289503	0	0.065331	0.354834	1.190635	1.384131	2.9296	75123.98	0	2659.009
Statewide Totals	2015	MDV	Aggregate	Aggregate	Diesel	42733.95	1775250.962	1775251	0	210109.6	0	0.305687	0	0	0.305687	0.021725	0	0	0.021725	0.003914	0.005623	0.031261	0.022707	0	0	0.022707	0.015655	0.016065	0.054427	898.9009	0	0
Statewide Totals	2015	MDV	Aggregate	Aggregate	Electricity	416.8482	8597.773335	0	8597.773	1832.992	3319.45	0	0	0	0	0	0	0	0	1.9E-05	1.47E-05	3.37E-05	0	0	0	0	7.58E-05	4.2E-05	0.000118	0	0	0
Statewide Totals	2015	MH	Aggregate	Aggregate	Gasoline	126227.6	1013798.744	1013799	0	12627.81	0	1.106572	0	0.005102	1.111673	0.003436	0	1.67E-05	0.003453	0.003353	0.017264	0.02407	0.003703	0	1.78E-05	0.003721	0.01341	0.049326	0.066457	2096.498	0	0.530684
Statewide Totals	2015	MH	Aggregate	Aggregate	Diesel	32379.82	308962.8166	308962.8	0	3237.982	0	2.021405	0	0	2.021405	0.059411	0	0	0.059411	0.001362	0.005239	0.066013	0.062098	0	0	0.062098	0.005449	0.014968	0.082515	355.4194	0	0
Statewide Totals	2015	MHDT	Aggregate	Aggregate	Gasoline	54004.99	2434917.869	2434918	0	1080532	0	4.103436	0.005143	0.612551	4.721131	0.005998	0	0.002438	0.008435	0.008052	0.041355	0.057843	0.006457	0	0.002591	0.009048	0.032208	0.118158	0.159415	4945.264	33.58674	72.59066
Statewide Totals	2015	MHDT	Aggregate	Aggregate	Diesel	264588.1	10561669.86	10561670	0	3142075	0	77.37903	10.19789	1.397467	88.97439	2.293389	0.084961	0	2.37835	0.034927	0.180615	2.593892	2.397086	0.088802	0	2.485889	0.139707	0.516042	3.141638	13387.87	733.3556	0
Statewide Totals	2015	MHDT	Aggregate	Aggregate	Natural Ga:	682.2433	32619.08443	32619.08	0	7145.295	0	0.007552	0.004719	0	0.012271	1.48E-05	8.36E-06	0	2.32E-05	0.000108	0.000554	0.000685	1.61E-05	9.1E-06	0	2.52E-05	0.000431	0.001583	0.00204	32.67286	3.569952	0
Statewide Totals	2015	OBUS	Aggregate	Aggregate	Gasoline	16501.11	849354.3321	849354.3	0	330154.3	0	0.947587	0.001174	0.155175	1.103936	0.000825	0	0.000193	0.001018	0.002809	0.014521	0.018348	0.000894	0	0.000206	0.0011	0.011235	0.041489	0.053824	1713.835	7.126486	12.91131
Statewide Totals	2015	OBUS	Aggregate	Aggregate	Diesel	10459.12	670351.7441	670351.7	0	122419.2	0	6.247369	0.389328	0.056087	6.692783	0.261338	0.004252	0	0.26559	0.002217	0.016474	0.28428	0.273154	0.004445	0	0.277599	0.008867	0.047067	0.333533	1025.445	32.84736	0
Statewide Totals	2015	OBUS	Aggregate	Aggregate	Natural Ga:	310.6692	20046.44206	20046.44	0	2764.956	0	0.005152	0.000542	0	0.005694	9.84E-06	9.61E-07	0	1.08E-05	6.63E-05	0.000345	0.000422	1.07E-05	1.05E-06	0	1.17E-05	0.000265	0.000986	0.001263	21.24461	0.413116	0
Statewide Totals	2015	SBUS	Aggregate	Aggregate	Gasoline	6709.322	318562.4043	318562.4	0	26837.29	0	0.562069	0.006623	0.017259	0.585952	0.002053	0	8.65E-05	0.002139	0.000702	0.005618	0.008459	0.002188	0	9.2E-05	0.00228	0.002809	0.01605	0.02114	323.8719	19.97317	2.060913
Statewide Totals	2015	SBUS	Aggregate	Aggregate	Diesel	20136.39	449005.6779	449005.7	0	291574.9	0	4.524892	0.745203	0.046629	5.316725	0.027321	0.001319	0	0.02864	0.001485	0.007884	0.038009	0.028557	0.001378	0	0.029935	0.005939	0.022526	0.0584	605.2315	51.89482	0
Statewide Totals	2015	SBUS	Aggregate	Aggregate	Natural Ga:	1602.942	42442.0822	42442.08	0	23210.59	0	0.050041	0.009452	0	0.059494	0.000187	1.68E-05	0	0.000203	0.00014	0.000761	0.001105	0.000203	1.82E-05	0	0.000221	0.000561	0.002175	0.002958	81.20312	7.156267	0
Statewide Totals	2015	UBUS	Aggregate	Aggregate	Gasoline	2286.157	208552.9061	208552.9	0	9144.629	0	0.052314	0	0.009606	0.06192	7.48E-05	0	1.63E-06	7.64E-05	0.000607	0.008299	0.008982	8.14E-05	0	1.77E-06	8.31E-05	0.002427	0.023711	0.026221	374.7969	0	0.957838
Statewide Totals	2015	UBUS	Aggregate	Aggregate	Diesel	3918.485	398234.0869	398234.1	0	15673.94	0	3.96504	0	0	3.96504	0.005094	0	0	0.005094	0.003477	0.016878	0.025449	0.005324	0	0	0.005324	0.013909	0.048222	0.067455	686.1713	0	0
Statewide Totals	2015	UBUS	Aggregate	Aggregate	Electricity	56.10389	3339.86722	0	3339.867	224.4156	6569.03	0	0	0	0	0	0	0	0	1.91E-05	5.87E-05	7.78E-05	0	0	0	0	7.65E-05	0.000168	0.000244	0	0	0
Statewide Totals	2015	UBUS	Aggregate	Aggregate	Natural Ga:	6864.132	754515.3035	754515.3	0	27456.53	0	4.530571	0	0	4.530571	0.005109	0	0	0.005109	0.006762	0.03194	0.043811	0.00534	0	0	0.00534	0.027048	0.091256	0.123645	1732.453	0	0
Statewide Totals	2016	HHDT	Aggregate	Aggregate	Gasoline	483.441	20532.49305	20532.49	0	9672.688	0	0.266259	0	0.005354	0.271613	0.000185	0	7.82E-05	0.000263	0.000113	0.000858	0.001234	0.000196	0	8.24E-05	0.000278	0.000453	0.00245	0.003181	58.79709	0	1.151604
Statewide Totals	2016	HHDT	Aggregate	Aggregate	Diesel	268393.3	38160747.84	38160748	0	4167285	0	280.7102	23.92464	5.188838	309.8236	6.166751	0.11257	0	6.279321	0.373061	1.282251	7.934633	6.445584	0.11766	0	6.563244	1.492244	3.663573	11.71906	69798.01	3888.87	0
Statewide Totals	2016	HHDT	Aggregate	Aggregate	Natural Ga:	8481.312	647147.6369	647147.6	0	61958.16	0	1.899304	0.119065	0	2.018369	0.003226	0.000114	0	0.00334	0.00642	0.037637	0.047397	0.003508	0.000124	0	0.003632	0.025681	0.107535	0.136848	1066.378	85.57668	0
Statewide Totals	2016	LDA	Aggregate	Aggregate	Gasoline	13947603	537137077.2	5.37E+08	0	65141591	0	73.43249	0	29.24101	102.6735	0.924126	0	0.180989	1.105115	1.184185	1.597552	3.886853	1.004216	0	0.196409	1.200625	4.736742	4.564435	10.5018	189110.9	0	5896.222
Statewide Totals	2016	LDA	Aggregate	Aggregate	Diesel	107641.1	4124057.333	4124057	0	496837.9	0	1.293242	0	0	1.293242	0.100171	0	0	0.100171	0.009092	0.011973	0.121235	0.1047	0	0	0.1047	0.036368	0.034207	0.175276	1140.951	0	0
Statewide Totals	2016	LDA	Aggregate	Aggregate	Electricity	121982.8	4286578.99	0	4286579	621332.6	1654973	0	0	0	0	0	0	0	0	0.00945	0.007206	0.016657	0	0	0	0	0.037801	0.02059	0.058391	0	0	0
Statewide Totals	2016	LDA	Aggregate	Aggregate	Plug-in Hyb	92681.65	4570030.501	2476369	2093661	383238.6	632348.2	0.018192	0	0.047826	0.066019	0.003607	0	0.000814	0.004421	0.010075	0.006858	0.021354	0.003923	0	0.000885	0.004808	0.040301	0.019595	0.064704	787.9682	0	29.39363
Statewide Totals	2016	LDT1	Aggregate	Aggregate	Gasoline	1517822	52647459.69	52647460	0	6776157	0	19.01402	0	4.581046	23.59507	0.191023	0	0.034466	0.225489	0.116068	0.188569	0.530125	0.207311	0	0.037375	0.244687	0.464272	0.538768	1.247726	21603.38	0	766.1349
Statewide Totals	2016	LDT1	Aggregate	Aggregate	Diesel	2389.411	47860.58191	47860.58	0	8487.692	0	0.076883	0	0	0.076883	0.009447	0	0	0.009447	0.000106	0.000195	0.009748	0.009874	0	0	0.009874	0.000422	0.000558	0.010855	24.18365	0	0
Statewide Totals	2016	LDT1	Aggregate	Aggregate	Electricity	2448.043	72546.37041	0	72546.37	11771.33	28008.89	0	0	0	0	0	0	0	0	0.00016	0.000123	0.000283	0	0	0	0	0.00064	0.000351	0.00099	0	0	0
Statewide Totals	2016	LDT2	Aggregate	Aggregate	Gasoline	4986778	184223198.1	1.84E+08	0	23042597	0	55.66417	0	19.08525	74.74942	0.351984	0	0.065079	0.417063	0.406143	0.654594	1.4778	0.382187	0	0.070632	0.452819	1.624572	1.870268	3.947659	85330.74	0	2777.078
Statewide Totals	2016	LDT2	Aggregate	Aggregate	Diesel	14942.77	669978.4341	669978.4	0	73429.67	0	0.091054	0	0	0.091054	0.010457	0	0	0.010457	0.001477	0.002162	0.014096	0.01093	0	0	0.01093	0.005908	0.006177	0.023015	259.6161	0	0
Statewide Totals	2016	LDT2	Aggregate	Aggregate	Electricity	729.7711	22152.99874	0	22153	3546.046	8552.886	0	0	0	0	0	0	0	0	4.88E-05	3.74E-05	8.63E-05	0	0	0	0	0.000195	0.000107	0.000302	0	0	0
Statewide Totals	2016	LDT2	Aggregate	Aggregate	Plug-in Hyb	607.5895	31043.90387	16821.8	14222.1	2512.383	4295.498	0.000124	0	0.000314	0.000438	3.31E-05	0	7.45E-06	4.06E-05	6.84E-05	4.65E-05	0.000156	3.6E-05	0	8.11E-06	4.41E-05	0.000274	0.000133	0.000451	5.357501	0	0.239148

Statewide Totals	2016	LHDT1	Aggregate	Aggregate	Gasoline	500619.2	17179773.47	17179773	0	7458481	0	9.01861	0.022994	5.785279	14.82688	0.046665	0	0.007174	0.053839	0.037875	0.516993	0.608707	0.050523	0	0.007716	0.058239	0.1515	1.477122	1.686861	17034.97	68.94331	205.2571
Statewide Totals	2016	LHDT1	Aggregate	Aggregate	Diesel	381350.7	14383013.8	14383014	0	4796912	0	61.04082	1.083853	0	62.12467	0.984425	0.011731	0	0.996157	0.047564	0.432829	1.47655	1.028937	0.012262	0	1.041199	0.190255	1.236656	2.468109	9407.063	59.80575	0
Statewide Totals	2016	LHDT2	Aggregate	Aggregate	Gasoline	69082.32	2388610.153	2388610	0	1029224	0	1.07989	0.003195	0.820811	1.903896	0.004628	0	0.000575	0.005203	0.005266	0.083861	0.094329	0.005032	0	0.000625	0.005657	0.021064	0.239602	0.266323	2639.229	10.98143	30.40676
Statewide Totals	2016	LHDT2	Aggregate	Aggregate	Diesel	119965.3	4721699.251	4721699	0	1509013	0	15.74122	0.341452	0	16.08267	0.274207	0.003584	0	0.277791	0.015614	0.165772	0.459178	0.286605	0.003746	0	0.290351	0.062457	0.473635	0.826444	3822.073	30.06399	0
Statewide Totals	2016	MCY	Aggregate	Aggregate	Gasoline	724849.5	4485487.33	4485487	0	1449699	0	3.774822	0	0.329475	4.104297	0.009366	0	0.007303	0.01667	0.004944	0.020766	0.042381	0.009921	0	0.007694	0.017615	0.019778	0.059333	0.096725	988.0353	0	97.41838
Statewide Totals	2016	MDV	Aggregate	Aggregate	Gasoline	3705270	129735887.5	1.3E+08	0	16905474	0	52.49585	0	18.07622	70.57207	0.270437	0	0.057335	0.327772	0.286019	0.46887	1.082661	0.293328	0	0.062166	0.355494	1.144075	1.339628	2.839197	71657.93	0	2422.109
Statewide Totals	2016	MDV	Aggregate	Aggregate	Diesel	50606	2233881.45	2233881	0	248798.6	0	0.333515	0	0	0.333515	0.023122	0	0	0.023122	0.004925	0.007105	0.035152	0.024167	0	0	0.024167	0.019699	0.020301	0.064168	1116.488	0	0
Statewide Totals	2016	MDV	Aggregate	Aggregate	Electricity	391.7573	8149.875848	0	8149.876	1694.647	3146.525	0	0	0	0	0	0	0	0	1.8E-05	1.4E-05	3.19E-05	0	0	0	0	7.19E-05	3.99E-05	0.000112	0	0	0
Statewide Totals	2016	MDV	Aggregate	Aggregate	Plug-in Hyb	2145.533	109181.8589	59162.53	50019.33	8871.777	15107.33	0.000433	0	0.001107	0.001541	0.00012	0	2.74E-05	0.000148	0.000241	0.000163	0.000551	0.000131	0	2.98E-05	0.00016	0.000963	0.000465	0.001588	18.78651	0	1.02116
Statewide Totals	2016	MH	Aggregate	Aggregate	Gasoline	117255.7	1006197.127	1006197	0	11730.26	0	0.954542	0	0.004783	0.959325	0.002668	0	9.92E-06	0.002678	0.003327	0.01713	0.023136	0.00289	0	1.07E-05	0.0029	0.01331	0.048944	0.065154	2073.069	0	0.451778
Statewide Totals	2016	MH	Aggregate	Aggregate	Diesel	32700.97	323425.4673	323425.5	0	3270.097	0	2.058821	0	0	2.058821	0.060437	0	0	0.060437	0.001426	0.005484	0.067347	0.06317	0	0	0.06317	0.005704	0.015669	0.084542	371.9492	0	0
Statewide Totals	2016	MHDT	Aggregate	Aggregate	Gasoline	56371.22	2811903.722	2811904	0	1127875	0	4.041879	0.005399	0.626644	4.673922	0.005917	0	0.002095	0.008012	0.009299	0.047725	0.065036	0.00638	0	0.002231	0.008611	0.037195	0.136358	0.182164	5661.921	34.94898	72.22177
Statewide Totals	2016	MHDT	Aggregate	Aggregate	Diesel	270110.3	11122009.85	11122010	0	3205899	0	73.68228	9.924616	1.772439	85.37934	2.158971	0.077193	0	2.236165	0.03678	0.190197	2.463142	2.25659	0.080684	0	2.337274	0.147119	0.543421	3.027814	14123.87	745.6212	0
Statewide Totals	2016	MHDT	Aggregate	Aggregate	Natural Ga:	820.8753	39778.73959	39778.74	0	8456.797	0	0.009169	0.005737	0	0.014906	1.88E-05	1.02E-05	0	2.9E-05	0.000132	0.000677	0.000837	2.05E-05	1.11E-05	0	3.16E-05	0.000526	0.001933	0.002491	39.75157	4.304169	0
Statewide Totals	2016	OBUS	Aggregate	Aggregate	Gasoline	15854.2	848355.5667	848355.6	0	317210.9	0	0.906981	0.00113	0.148514	1.056624	0.000793	0	0.000153	0.000946	0.002805	0.014504	0.018256	0.00086	0	0.000165	0.001024	0.011222	0.041441	0.053687	1707.969	6.837701	12.16078
Statewide Totals	2016	OBUS	Aggregate	Aggregate	Diesel	10623.81	704352.6544	704352.7	0	124412.7	0	5.959904	0.365157	0.073758	6.398819	0.254379	0.003939	0	0.258318	0.002329	0.017064	0.277712	0.265881	0.004117	0	0.269998	0.009317	0.048755	0.32807	1083.313	33.0949	0
Statewide Totals	2016	OBUS	Aggregate	Aggregate	Natural Ga:	346.0728	22991.23964	22991.24	0	3080.048	0	0.00598	0.000604	0	0.006584	1.16E-05	1.07E-06	0	1.27E-05	7.6E-05	0.000396	0.000485	1.26E-05	1.16E-06	0	1.38E-05	0.000304	0.001133	0.001451	24.38612	0.456879	0
Statewide Totals	2016	SBUS	Aggregate	Aggregate	Gasoline	5648.847	287023.6671	287023.7	0	22595.39	0	0.548819	0.005564	0.01494	0.569323	0.001923	0	7.57E-05	0.001998	0.000633	0.00506	0.007691	0.00205	0	8.05E-05	0.002131	0.002531	0.014457	0.019119	292.0111	16.82526	1.770977
Statewide Totals	2016	SBUS	Aggregate	Aggregate	Diesel	21683.62	466156.3207	466156.3	0	313978.9	0	4.54389	0.777614	0.059116	5.38062	0.028143	0.001396	0	0.029539	0.001542	0.008184	0.039265	0.029416	0.001459	0	0.030875	0.006166	0.023384	0.060425	627.5972	55.51358	0
Statewide Totals	2016	SBUS	Aggregate	Aggregate	Natural Ga:	1976.446	51668.00789	51668.01	0	28618.93	0	0.059491	0.011655	0	0.071146	0.000225	2.07E-05	0	0.000246	0.000171	0.000925	0.001342	0.000245	2.25E-05	0	0.000267	0.000683	0.002643	0.003594	96.99378	8.767987	0
Statewide Totals	2016	UBUS	Aggregate	Aggregate	Gasoline	2874.055	248250.037	248250	0	11496.22	0	0.052725	0	0.011604	0.06433	0.000122	0	2.36E-06	0.000125	0.000698	0.009719	0.010542	0.000133	0	2.57E-06	0.000136	0.002793	0.027768	0.030696	426.725	0	1.105141
Statewide Totals	2016	UBUS	Aggregate	Aggregate	Diesel	4185.354	431775.5405	431775.5	0	16741.41	0	3.639477	0	0	3.639477	0.005975	0	0	0.005975	0.003696	0.018233	0.027905	0.006246	0	0	0.006246	0.014785	0.052095	0.073126	719.6003	0	0
Statewide Totals	2016	UBUS	Aggregate	Aggregate	Electricity	49.81123	2525.64205	0	2525.642	199.2449	5189.819	0	0	0	0	0	0	0	0	9.4E-06	4.11E-05	5.05E-05	0	0	0	0	3.76E-05	0.000117	0.000155	0	0	0
Statewide Totals	2016	UBUS	Aggregate	Aggregate	Natural Ga:	7295.496	794561.1602	794561.2	0	29181.98	0	3.782948	0	0	3.782948	0.004136	0	0	0.004136	0.006995	0.033612	0.044743	0.004323	0	0	0.004323	0.027979	0.096033	0.128335	1829.907	0	0
Statewide Totals	2017	HHDT	Aggregate	Aggregate	Gasoline	638.8995	21130.71482	21130.71	0	12783.1	0	0.28569	0	0.008529	0.294219	0.000241	0	0.000111	0.000351	0.000116	0.00088	0.001348	0.000255	0	0.000117	0.000372	0.000466	0.002513	0.003351	61.72559	0	1.553799
Statewide Totals	2017	HHDT	Aggregate	Aggregate	Diesel	274958.2	40169431.95	40169432	0	4302856	0	258.4256	24.61049	6.360186	289.3963	5.212156	0.089312	0	5.301468	0.392694	1.321832	7.015994	5.447826	0.093351	0	5.541177	1.570777	3.776663	10.88862	73447.47	4153.069	0
Statewide Totals	2017	HHDT	Aggregate	Aggregate	Natural Ga:	9660.106	752825.8603	752825.9	0	71365.01	0	1.949028	0.136254	0	2.085282	0.003242	0.000141	0	0.003383	0.007469	0.043168	0.05402	0.003526	0.000153	0	0.003679	0.029875	0.123336	0.15689	1215.582	97.7253	0
Statewide Totals	2017	LDA	Aggregate	Aggregate	Gasoline	14039797	522168808.9	5.22E+08	0	65699640	0	59.59438	0	27.13025	86.72463	0.876627	0	0.173142	1.049769	1.151186	1.55117	3.752126	0.952937	0	0.188057	1.140994	4.604744	4.431915	10.17765	181211.4	0	5792.579
Statewide Totals	2017	LDA	Aggregate	Aggregate	Diesel	69213.45	2239072.433	2239072	0	305036.4	0	1.053823	0	0	1.053823	0.079434	0	0	0.079434	0.004936	0.006576	0.090946	0.083026	0	0	0.083026	0.019745	0.018789	0.121559	632.0894	0	0
Statewide Totals	2017	LDA	Aggregate	Aggregate	Electricity	159245.5	5584437.255	0	5584437	809104.5	2156054	0	0	0	0	0	0	0	0	0.012312	0.009392	0.021703	0	0	0	0	0.049246	0.026834	0.07608	0	0	0
Statewide Totals	2017	LDA	Aggregate	Aggregate	Plug-in Hyb	133639	6306044.146	3417065	2888979	552597.1	872557.7	0.025097	0	0.068971	0.094068	0.005838	0	0.001388	0.007226	0.013902	0.009463	0.030592	0.00635	0	0.001509	0.007859	0.05561	0.027037	0.090506	1087.535	0	42.115
Statewide Totals	2017	LDT1	Aggregate	Aggregate	Gasoline	1521399	50202272.56	50202273	0	6771081	0	16.64759	0	4.410398	21.05799	0.172395	0	0.03276	0.205156	0.110677	0.180495	0.496328	0.187172	0	0.035547	0.222719	0.442709	0.515701	1.181129	20448.87	0	752.31
Statewide Totals	2017	LDT1	Aggregate	Aggregate	Diesel	2534.799	49275.68944	49275.69	0	8985.517	0	0.074612	0	0	0.074612	0.009203	0	0	0.009203	0.000109	0.000199	0.009511	0.009619	0	0	0.009619	0.000435	0.000569	0.010623	24.95794	0	0
Statewide Totals	2017	LDT1	Aggregate	Aggregate	Electricity	2171.332	60500.66249	0	60500.66	10204.98	23358.25	0	0	0	0	0	0	0	0	0.000133	0.000103	0.000236	0	0	0	0	0.000534	0.000293	0.000826	0	0	0
Statewide Totals	2017	LDT1	Aggregate	Aggregate	Plug-in Hyb	19.15487	948.4148877	513.9189	434.4959	79.20539	131.2307	3.8E-06	0	9.93E-06	1.37E-05	1.13E-06	0	2.64E-07	1.39E-06	2.09E-06	1.42E-06	4.9E-06	1.23E-06	0	2.87E-07	1.51E-06	8.36E-06	4.06E-06	1.39E-05	0.163712	0	0.006866
Statewide Totals	2017	LDT2	Aggregate	Aggregate	Gasoline	5407712	195153404.9	1.95E+08	0	25120590	0	48.11812	0	18.4313	66.54942	0.361808	0	0.068214	0.430023	0.43024	0.686709	1.546972	0.393112	0	0.074095	0.467206	1.72096	1.962027	4.150193	87978.18	0	2918.947
Statewide Totals	2017	LDT2	Aggregate	Aggregate	Diesel	16702.82	704904.4049	704904.4	0	81500.26	0	0.091429	0	0	0.091429	0.010944	0	0	0.010944	0.001554	0.002283	0.014781	0.011439	0	0	0.011439	0.006216	0.006523	0.024178	270.0594	0	0
Statewide Totals	2017	LDT2	Aggregate	Aggregate	Electricity	694.1115	18851.30059	0	18851.3	3274.306	7278.158	0	0	0	0	0	0	0	0	4.16E-05	3.19E-05	7.35E-05	0	0	0	0	0.000166	9.12E-05	0.000257	0	0	0
Statewide Totals	2017	LDT2	Aggregate	Aggregate	Plug-in Hyb	737.1348	34853.87435	18886.32	15967.56	3048.052	4822.678	0.000139	0	0.000381	0.00052	3.72E-05	0	9.08E-06	4.63E-05	7.68E-05	5.22E-05	0.000175	4.05E-05	0	9.88E-06	5.03E-05	0.000307	0.000149	0.000507	6.006623	0	0.290089
Statewide Totals	2018	LHDT1	Aggregate	Aggregate	Gasoline	548014	19075611.57	19075612	0	8164593	0	8.124934	0.025072	6.414152	14.56416	0.043483	0	0.006264	0.049747	0.042055	0.574044	0.665846	0.047147	0	0.006756	0.053903	0.168218	1.640126	1.862248	18241.71	75.20928	227.8074
Statewide Totals	2017	LHDT1	Aggregate	Aggregate	Diesel	395440.7	14437838.27	14437838	0	4974147	0	55.03115	1.10909	0	56.14024	0.899548	0.012086	0	0.911634	0.047745	0.434479	1.393859	0.940222	0.012633	0	0.952855	0.19098	1.241369	2.385204	9528.495	61.679	0
Statewide Totals	2017	LHDT2	Aggregate	Aggregate	Gasoline	77394.04	2649365.363	2649365	0	1153056	0	1.019034	0.003567	0.913317	1.935918	0.004635	0	0.000575	0.00521	0.005841	0.093016	0.104066	0.005039	0	0.000625	0.005664	0.023363	0.265759	0.294786	2835.688	12.27408	34.00044
Statewide Totals	2017	LHDT2	Aggregate	Aggregate	Diesel	127697	4850526.558	4850527	0	1606268	0	14.45747	0.35775	0	14.81522	0.256503	0.003802	0	0.260305	0.01604	0.170295	0.446641	0.268101	0.003974	0	0.272075	0.064161	0.486558	0.822795	3931.007	31.83162	0
Statewide Totals	2017	MCY	Aggregate	Aggregate	Gasoline	712947.7	4175209.429	4175209	0	1425895	0	3.383731	0	0.309481	3.693211	0.008877	0	0.007143	0.016019	0.004602	0.01933	0.039952	0.009415	0	0.00753	0.016945	0.01841	0.055229	0.090583	915.0603	0	93.25217
Statewide Totals	2017	MDV	Aggregate	Aggregate	Gasoline	4251623	146486815.6	1.46E+08	0	19543386	0	46.67378	0	17.76958	64.44336	0.278428	0	0.059422	0.337851	0.322948	0.521712	1.182511	0.302212	0	0.064476	0.366688	1.291793	1.490605	3.149087	79003	0	2706.618
Statewide Totals	2017	MDV	Aggregate	Aggregate	Diesel	49970.93	2059917.472	2059917	0	243613.6	0	0.295045	0	0	0.295045	0.021299	0	0	0.021299	0.004541	0.006676	0.032516	0.022262	0	0	0.022262	0.018165	0.019073	0.0595	1024.366	0	0
Statewide Totals	2017	MDV	Aggregate	Aggregate	Electricity	399.9268	8129.677357	0	8129.677	1734.656	3138.726	0	0	0	0	0	0	0	0	1.79E-05	1.39E-05	3.18E-05	0	0	0	0	7.17E-05	3.97E-05	0.000111	0	0	0
Statewide Totals	2017	MDV	Aggregate	Aggregate	Plug-in Hyb	4703.243	225486.9048	122184.9	103302	19447.91	31200.28	0.000893	0	0.00243	0.003323	0.000255	0	6.22E-05	0.000317	0.000497	0.000336	0.00115	0.000277	0	6.76E-05	0.000345	0.001988	0.00096	0.003293	38.71745	0	2.224078
Statewide Totals	2017	MH	Aggregate	Aggregate	Gasoline	119897.9	987531.3013	987531.3	0	11994.59	0	0.930791	0	0.004921	0.935712	0.002848	0	1.26E-05	0.002861	0.003266	0.016811	0.022938	0.003076	0	1.35E-05	0.00309	0.013063	0.048032	0.064185	2037.756	0	0.479432
Statewide Totals	2017	MH	Aggregate	Aggregate	Diesel	34637.83	331543.0231	331543	0	3463.783	0	1.958466	0	0	1.958466	0.055935	0	0	0.055935	0.001462	0.005624	0.063021	0.058464	0	0	0.058464	0.005847	0.016068	0.08038	382.1523	0	0
Statewide Totals	2017	MHDT	Aggregate	Aggregate	Gasoline	56515.3	2690514.453	2690514	0	1130758	0	3.633339	0.005425	0.618673	4.257437	0.005306	0	0.001807	0.007112	0.008897	0.045653	0.061663	0.00573	0	0.001929	0.00766	0.035589	0.130437	0.173686	5378.137	34.93189	69.99551
Statewide Totals	2017	MHDT	Aggregate	Aggregate	Diesel	275936.3	11695011.31	11695011	0	3294422	0	69.12591	9.571837	2.18408	80.88182	1.980754	0.071013	0	2.051767	0.038675	0.199993	2.290435	2.070315	0.074224	0	2.144539	0.154699	0.571409	2.870647	14833.96	754.2857	0
Statewide Totals	2017	MHDT	Aggregate	Aggregate	Natural Ga:	1245.79	66148.50148	66148.5	0	12267.49	0	0.01353	0.008944	0	0.022474	4.49E-05	1.71E-05	0	6.2E-05	0.000219	0.001129	0.00141	4.88E-05	1.86E-05	0	6.74E-05	0.000875	0.003226	0.004169	66.47121	6.715672	0
Statewide Totals	2017	OBUS	Aggregate	Aggregate	Gasoline	17228.35	853062.9651	853063	0	344704.9	0	0.87011	0.001228	0.161354	1.032692	0.000792	0	0.000165	0.000956	0.002821	0.014586	0.018364	0.000859	0	0.000177	0.001035	0.011284	0.041676	0.053995	1713.218	7.422376	13.18333
Statewide Totals	2017	OBUS	Aggregate	Aggregate	Diesel	11023.14	739810.9208	739810.9	0	131433.3	0	5.874453	0.369376	0.090731	6.33456	0.250725	0.003823	0	0.254548	0.002447	0.017662	0.274656	0.262062	0.003996	0	0.266057	0.009786	0.050462	0.326305	1143.857	35.98161	0
Statewide Totals	2017	OBUS	Aggregate	Aggregate	Natural Ga:	409.8004	27512.40731	27512.41	0	3647.223	0	0.006563	0.000714	0	0.007278	1.56E-05	1.28E-06	0	1.68E-05	9.1E-05	0.000472	0.00058	1.69E-05	1.4E-06	0	1.83E-05	0.000364	0.001349	0.001731	28.60386	0.538664	0
Statewide Totals	2017	SBUS	Aggregate	Aggregate	Gasoline	5541.309	272388.1589	272388.2	0	22165.24	0	0.417045	0.005517	0.014967	0.437528	0.001188	0	4.7E-05	0.001235	0.000601	0.004801	0.006636	0.001274	0	5.03E-05	0.001324	0.002402	0.013717	0.017444	270.8297	16.42339	1.656975
Statewide Totals	2017	SBUS	Aggregate	Aggregate	Diesel	19823.56	471124.7313	471124.7	0	287045.1	0	4.148071	0.669485	0.072802	4.890358	0.025323	0.001102	0	0.026426	0.001558	0.008263	0.036247	0.026468	0.001152	0	0.027621	0.006232	0.02361	0.057462	629.1494	50.49525	0
Statewide Totals	2017	SBUS	Aggregate	Aggregate	Natural Ga:	2797.441	74874.85085	74874.85	0	40506.95	0	0.083223	0.016417	0	0.09964	0.000328	3.11E-05	0	0.000359	0.000248	0.001342	0.001948	0.000356	3.38E-05	0	0.00039	0.00099	0.003834	0.005215	139.8296	12.49676	0
Statewide Totals	2017	UBUS	Aggregate	Aggregate	Gasoline	2798.583	241668.398	241668.4	0	11194.33	0	0.046994	0	0.010935	0.057929	0.000156	0	3.05E-06	0.000159	0.000674	0.009426	0.01026	0.000169	0	3.32E-06	0.000173	0.002698	0.026933	0.029803	403.3199	0	1.055017
Statewide Totals	2017	UBUS	Aggregate	Aggregate	Diesel	3981.042	400479.8869	400479.9	0	15924.17	0	2.716466	0	0	2.716466	0.005157	0	0	0.005157	0.003462	0.016926	0.025545	0.005391	0	0	0.005391	0.013847	0.048359	0.067597	649.2528	0	0
Statewide Totals	2017	UBUS	Aggregate	Aggregate	Electricity	95.99696	5140.267284	0	5140.267	383.9878	10091.08	0	0	0	0	0	0	0	0	3.48E-05	9.62E-05	0.000131	0	0	0	0	0.000139	0.000275	0.000414	0	0	0
Statewide Totals	2017	UBUS	Aggregate	Aggregate	Natural Ga:	7228.345	806282.3452	806282.3	0	28913.38	0	2.806705	0	0	2.806705	0.002714	0	0	0.002714	0.007129	0.034099	0.043942	0.002836	0	0	0.002836	0.028516	0.097427	0.128779	1911.333	0	0
Statewide Totals	2018	HHDT	Aggregate	Aggregate	Gasoline	572.9556	19463.62777	19463.63	0	11463.7	0	0.249413	0	0.008422	0.257835	0.000194	0	8.45E-05	0.000279	0.000107	0.000801	0.001187	0.000206	0	8.92E-05	0.000296	0.000429	0.002289	0.003014	55.71824	0	1.252476
Statewide Totals	2018	HHDT	Aggregate	Aggregate	Diesel	283895.6	39174308.03	39174308	0	4484968	0	220.3201	25.63125	7.692249	253.6436	4.375748	0.076772	0	4.45252	0.382955	1.265211	6.100686	4.5736	0.080243	0	4.653843	1.531821	3.614889	9.800553	71729.91	4463.789	0
Statewide Totals	2018	HHDT	Aggregate	Aggregate	Natural Ga:	10970.99	812391.0513	812391.1	0	80762.12	0	1.812116	0.152639	0	1.964755	0.003135	0.000175	0	0.00331	0.00806	0.046185	0.057554	0.00341	0.00019	0	0.0036	0.032238	0.131956	0.167794	1280.902	110.8093	0
Statewide Totals	2018	LDA	Aggregate	Aggregate	Gasoline	13941722	518760540.9	5.19E+08	0	65176046	0	51.14149	0	25.17749	76.31898	0.869524	0	0.170124	1.040048	1.143672	1.539758	3.723478	0.945864	0	0.184882	1.130746	4.574688	4.399309	10.10474	177659.3	0	5629.907
Statewide Totals	2018	LDA	Aggregate	Aggregate	Diesel	61467.66	1934626.84	1934627	0	268007	0	0.917137	0	0	0.917137	0.06762	0	0	0.06762	0.004265	0.005685	0.07757	0.070677	0	0	0.070677	0.017061	0.016243	0.10398	543.2866	0	0
Statewide Totals	2018	LDA	Aggregate	Aggregate	Electricity	215329	7904341.645	0	7904342	1093103	3051728	0	0	0	0	0	0	0	0	0.017426	0.013295	0.030721	0	0	0	0	0.069704	0.037985	0.107689	0	0	0
Statewide Totals	2018	LDA	Aggregate	Aggregate	Plug-in Hyb	170226.3	7961284.548	4313993	3647292	703885.9	1101591	0.031633	0	0.087863	0.119496	0.007989	0	0.001932	0.009921	0.017552	0.011947	0.039421	0.008689	0	0.002102	0.01079	0.070207	0.034136	0.115133	1369.319	0	53.38507
Statewide Totals	2018	LDT1	Aggregate	Aggregate	Gasoline	1489629	49263752.23	49263752	0	6627586	0	14.60076	0	4.083729	18.68448	0.157564	0	0.029921	0.187484	0.108608	0.177002	0.473094	0.171211	0	0.032502	0.203712	0.434432	0.505719	1.143864	19820.28	0	719.458
Statewide Totals	2018	LDT1	Aggregate	Aggregate	Diesel	2393.401	45628.07032	45628.07	0	8378.822	0	0.068746	0	0	0.068746	0.008473	0	0	0.008473	0.000101	0.000186	0.00876	0.008856	0	0	0.008856	0.000402	0.00053	0.009789	23.13822	0	0
Statewide Totals	2018	LDT1	Aggregate	Aggregate	Electricity	2045.201	57179.57203	0	57179.57	9482.319	22076.03	0	0	0	0	0	0	0	0	0.000126	9.71E-05	0.000223	0	0	0	0	0.000504	0.000277	0.000782	0	0	0
Statewide Totals	2018	LDT1	Aggregate	Aggregate	Plug-in Hyb	19.73876	945.9266195	512.5706	433.356	81.61978	130.8864	3.78E-06	0	1.02E-05	1.4E-05	1.12E-06	0	2.72E-07	1.39E-06	2.09E-06	1.42E-06	4.89E-06	1.22E-06	0	2.96E-07	1.51E-06	8.34E-06	4.05E-06	1.39E-05	0.16259	0	0.007067
Statewide Totals	2018	LDT2	Aggregate	Aggregate	Gasoline	5563437	202680869.1	2.03E+08	0	25889043	0	42.29674	0	17.14366	59.4404	0.372668	0	0.069179	0.441847	0.446835	0.710212	1.598894	0.405083	0	0.075182	0.480265	1.787341	2.029177	4.296782	89359.38	0	2922.122
Statewide Totals	2018	LDT2	Aggregate	Aggregate	Diesel	18603.81	785585.1202	785585.1	0	90804.35	0	0.086669	0	0	0.086669	0.010375	0	0	0.010375	0.001732	0.002543	0.01465	0.010844	0	0	0.010844	0.006928	0.007265	0.025037	296.7089	0	0
Statewide Totals	2018	LDT2	Aggregate	Aggregate	Electricity	575.8118	15369.65083	0	15369.65	2717.022	5933.954	0	0	0	0	0	0	0

Statewide Totals	2018	LDT2	Aggregate	Aggregate	Plug-in Hyb	2049.865	99024.14738	53658.36	45365.79	8476.193	13701.82	0.000395	0	0.001059	0.001454	0.000117	0	2.8E-05	0.000145	0.000218	0.000148	0.000512	0.000127	0	3.05E-05	0.000158	0.000873	0.000424	0.001455	17.05576	0	0.794506
Statewide Totals	2018	LHDT1	Aggregate	Aggregate	Gasoline	552302.4	19542010.86	19542011	0	8228482	0	7.28893	0.025073	6.469034	13.78304	0.04005	0	0.005238	0.045288	0.043083	0.58808	0.67645	0.04348	0	0.005667	0.049147	0.172331	1.680228	1.901706	18283.84	75.32219	233.1737
Statewide Totals	2018	LHDT1	Aggregate	Aggregate	Diesel	397993.4	14475025.3	14475025	0	5006256	0	50.99393	1.097155	0	52.09109	0.846789	0.012074	0	0.858863	0.047868	0.435598	1.34233	0.885077	0.01262	0	0.897697	0.191472	1.244567	2.333736	9555.364	61.63811	0
Statewide Totals	2018	LHDT2	Aggregate	Aggregate	Gasoline	78487.76	2702307.125	2702307	0	1169351	0	0.93452	0.003592	0.922516	1.860628	0.004466	0	0.000533	0.004999	0.005958	0.094874	0.105831	0.004856	0	0.000579	0.005435	0.02383	0.271069	0.300335	2836.043	12.38314	34.25525
Statewide Totals	2018	LHDT2	Aggregate	Aggregate	Diesel	131187	4974951.363	4974951	0	1650167	0	13.48276	0.359495	0	13.84225	0.244155	0.003887	0	0.248042	0.016452	0.174664	0.439157	0.255194	0.004063	0	0.259257	0.065807	0.499039	0.824103	4012.489	32.44197	0
Statewide Totals	2018	MCY	Aggregate	Aggregate	Gasoline	695309.6	4057325.912	4057326	0	1390619	0	3.165533	0	0.287096	3.45263	0.008518	0	0.006472	0.01499	0.004472	0.018784	0.038247	0.00905	0	0.006832	0.015881	0.01789	0.053669	0.08744	882.8494	0	88.18065
Statewide Totals	2018	MDV	Aggregate	Aggregate	Gasoline	4268475	149661300.7	1.5E+08	0	19878720	0	42.26802	0	16.74469	59.01271	0.281939	0	0.058996	0.340935	0.329947	0.531172	1.202054	0.306178	0	0.064049	0.370226	1.319788	1.517634	3.207648	79369	0	2697.664
Statewide Totals	2018	MDV	Aggregate	Aggregate	Diesel	53592.44	2201750.153	2201750	0	260697.6	0	0.274336	0	0	0.274336	0.020619	0	0	0.020619	0.004854	0.007169	0.032642	0.021551	0	0	0.021551	0.019416	0.020482	0.061449	1080.535	0	0
Statewide Totals	2018	MDV	Aggregate	Aggregate	Electricity	389.4634	7659.822652	0	7659.823	1669.966	2957.324	0	0	0	0	0	0	0	0	1.69E-05	1.31E-05	3E-05	0	0	0	0	6.75E-05	3.75E-05	0.000105	0	0	0
Statewide Totals	2018	MDV	Aggregate	Aggregate	Plug-in Hyb	10002.96	477765.9435	258887.7	218878.2	41362.22	66107.75	0.00189	0	0.005168	0.007058	0.000563	0	0.000138	0.000701	0.001053	0.000712	0.002466	0.000612	0	0.00015	0.000762	0.004213	0.002034	0.007009	81.82915	0	4.703959
Statewide Totals	2018	MH	Aggregate	Aggregate	Gasoline	117354.4	989500.075	989500.1	0	11740.13	0	0.822385	0	0.004877	0.827262	0.002472	0	9.94E-06	0.002482	0.003272	0.01684	0.022593	0.002676	0	1.07E-05	0.002686	0.013089	0.048113	0.063888	2036.034	0	0.448006
Statewide Totals	2018	MH	Aggregate	Aggregate	Diesel	36044.03	347874.0342	347874	0	3604.403	0	1.921505	0	0	1.921505	0.053262	0	0	0.053262	0.001534	0.005901	0.060696	0.05567	0	0	0.05567	0.006135	0.016859	0.078665	401.4293	0	0
Statewide Totals	2018	MHDT	Aggregate	Aggregate	Gasoline	55429.3	2648242.906	2648243	0	1109029	0	3.235761	0.005336	0.592464	3.83356	0.004796	0	0.001514	0.006309	0.008758	0.044943	0.06001	0.005187	0	0.001621	0.006808	0.03503	0.12841	0.170249	5253.314	34.10176	66.00297
Statewide Totals	2018	MHDT	Aggregate	Aggregate	Diesel	276404.7	11405353.87	11405354	0	3292792	0	61.14776	9.103494	2.52979	72.78104	1.713554	0.062348	0	1.775902	0.037717	0.194981	2.0086	1.791033	0.065168	0	1.856201	0.150867	0.557089	2.564157	14441.97	750.8424	0
Statewide Totals	2018	MHDT	Aggregate	Aggregate	Natural Ga:	1601.917	86866.14156	86866.14	0	15097.63	0	0.01484	0.011643	0	0.026483	7.8E-05	2.53E-05	0	0.000103	0.000287	0.001489	0.001879	8.49E-05	2.75E-05	0	0.000112	0.001149	0.004253	0.005515	88.84856	9.03323	0
Statewide Totals	2018	OBUS	Aggregate	Aggregate	Gasoline	16298.82	791703.8255	791703.8	0	326106.8	0	0.722618	0.001163	0.150779	0.874559	0.000723	0	0.000146	0.000869	0.002618	0.013534	0.017022	0.000785	0	0.000157	0.000942	0.010472	0.03867	0.050084	1578.978	6.991935	12.21547
Statewide Totals	2018	OBUS	Aggregate	Aggregate	Diesel	10796.97	719269.3424	719269.3	0	130011.7	0	5.188707	0.333277	0.110384	5.632368	0.226238	0.00317	0	0.229408	0.002379	0.016916	0.248703	0.236467	0.003314	0	0.239781	0.009514	0.048332	0.297627	1119.507	35.83357	0
Statewide Totals	2018	OBUS	Aggregate	Aggregate	Natural Ga:	473.0343	30521.82211	30521.82	0	4210.005	0	0.006715	0.000822	0	0.007537	2.07E-05	1.56E-06	0	2.22E-05	0.000101	0.000524	0.000648	2.25E-05	1.69E-06	0	2.42E-05	0.000404	0.001498	0.001926	31.83305	0.625076	0
Statewide Totals	2018	SBUS	Aggregate	Aggregate	Gasoline	7125.176	356985.3603	356985.4	0	28500.71	0	0.534079	0.007099	0.019117	0.560294	0.001633	0	6.6E-05	0.001699	0.000787	0.006291	0.008777	0.001749	0	7.05E-05	0.001819	0.003148	0.017974	0.022942	352.5178	20.96234	2.077138
Statewide Totals	2018	SBUS	Aggregate	Aggregate	Diesel	19788.59	444889.0815	444889.1	0	286538.8	0	3.440775	0.624637	0.094198	4.15961	0.020521	0.000912	0	0.021433	0.001471	0.0078	0.030704	0.021449	0.000953	0	0.022402	0.005885	0.022287	0.050574	589.8412	50.2359	0
Statewide Totals	2018	SBUS	Aggregate	Aggregate	Natural Ga:	3450.251	88711.26224	88711.26	0	49959.64	0	0.088879	0.020159	0	0.109037	0.000385	4.05E-05	0	0.000425	0.000293	0.001587	0.002305	0.000418	4.41E-05	0	0.000462	0.001173	0.004533	0.006169	161.0279	15.55073	0
Statewide Totals	2018	UBUS	Aggregate	Aggregate	Gasoline	2722.663	236499.7884	236499.8	0	10890.65	0	0.047603	0	0.010642	0.058245	0.000192	0	3.47E-06	0.000195	0.000669	0.009284	0.010148	0.000209	0	3.77E-06	0.000212	0.002675	0.026525	0.029412	408.2405	0	1.028516
Statewide Totals	2018	UBUS	Aggregate	Aggregate	Diesel	4065.703	404503.7707	404503.8	0	16262.81	0	2.085822	0	0	2.085822	0.004507	0	0	0.004507	0.003494	0.017118	0.025119	0.004711	0	0	0.004711	0.013975	0.048909	0.067595	633.619	0	0
Statewide Totals	2018	UBUS	Aggregate	Aggregate	Electricity	129.4599	6549.819887	0	6549.82	517.8397	12855.68	0	0	0	0	0	0	0	0	4.94E-05	0.00013	0.00018	0	0	0	0	0.000198	0.000372	0.00057	0	0	0
Statewide Totals	2018	UBUS	Aggregate	Aggregate	Natural Ga:	7288.064	827479.9184	827479.9	0	29152.26	0	2.474173	0	0	2.474173	0.002398	0	0	0.002398	0.007287	0.03496	0.044645	0.002507	0	0	0.002507	0.029147	0.099886	0.13154	1962.645	0	0
Statewide Totals	2019	HHDT	Aggregate	Aggregate	Gasoline	548.3253	17123.86217	17123.86	0	10970.89	0	0.253839	0	0.012809	0.266648	0.000158	0	6.55E-05	0.000223	9.44E-05	0.000707	0.001025	0.000168	0	6.95E-05	0.000238	0.000378	0.002021	0.002636	48.98904	0	1.03843
Statewide Totals	2019	HHDT	Aggregate	Aggregate	Diesel	270487.7	39244411.55	39244412	0	4305247	0	189.9676	24.8403	8.411813	223.2197	3.51859	0.063599	0	3.582189	0.383631	1.244806	5.210626	3.677685	0.066475	0	3.744159	1.534525	3.55659	8.835274	71902.01	4446.354	0
Statewide Totals	2019	HHDT	Aggregate	Aggregate	Natural Ga:	11888.24	882259.9965	882260	0	85885.47	0	1.784166	0.157223	0	1.881389	0.003065	0.000193	0	0.003258	0.008753	0.049943	0.061953	0.003333	0.00021	0	0.003543	0.035011	0.142694	0.181247	1364.029	118.8441	0
Statewide Totals	2019	LDA	Aggregate	Aggregate	Gasoline	13805991	513542901.4	5.14E+08	0	64465682	0	43.89692	0	23.41578	67.31271	0.859137	0	0.164746	1.023883	1.132169	1.522679	3.67873	0.93434	0	0.179148	1.113488	4.528676	4.350511	9.992675	174107.7	0	5470.097
Statewide Totals	2019	LDA	Aggregate	Aggregate	Diesel	61677.77	1970022.528	1970023	0	270318.5	0	0.775647	0	0	0.775647	0.057226	0	0	0.057226	0.004343	0.005784	0.067353	0.059813	0	0	0.059813	0.017373	0.016527	0.093712	545.0605	0	0
Statewide Totals	2019	LDA	Aggregate	Aggregate	Electricity	298490.2	10042318.67	0	10042319	1515443	3877164	0	0	0	0	0	0	0	0	0.02214	0.016891	0.039031	0	0	0	0	0.088558	0.048261	0.136819	0	0	0
Statewide Totals	2019	LDA	Aggregate	Aggregate	Plug-in Hyb	199593.4	9159191.962	4942175	4217016	825318.8	1273665	0.036193	0	0.103034	0.139227	0.00945	0	0.002355	0.011805	0.020193	0.01375	0.045748	0.010278	0	0.002561	0.012839	0.08077	0.039286	0.132895	1568.184	0	62.4305
Statewide Totals	2019	LDT1	Aggregate	Aggregate	Gasoline	1540249	49062094.83	49062095	0	6750703	0	15.07621	0	4.343943	19.42015	0.15883	0	0.03075	0.18958	0.108163	0.178059	0.475802	0.172695	0	0.033431	0.206126	0.432654	0.50874	1.14752	19744.23	0	737.0302
Statewide Totals	2019	LDT1	Aggregate	Aggregate	Diesel	1159.942	17322.60451	17322.6	0	3632.449	0	0.030691	0	0	0.030691	0.004726	0	0	0.004726	3.82E-05	7.15E-05	0.004836	0.00494	0	0	0.00494	0.000153	0.000204	0.005297	8.179199	0	0
Statewide Totals	2019	LDT1	Aggregate	Aggregate	Electricity	1927.156	48925.30975	0	48925.31	8931.632	18889.21	0	0	0	0	0	0	0	0	0.000108	8.31E-05	0.000191	0	0	0	0	0.000431	0.000237	0.000669	0	0	0
Statewide Totals	2019	LDT1	Aggregate	Aggregate	Plug-in Hyb	13.04135	603.2056686	326.8599	276.3457	53.92598	83.46465	2.42E-06	0	6.77E-06	9.19E-06	7.13E-07	0	1.8E-07	8.93E-07	1.33E-06	9.05E-07	3.13E-06	7.76E-07	0	1.96E-07	9.71E-07	5.32E-06	2.58E-06	8.88E-06	0.103682	0	0.004673
Statewide Totals	2019	LDT2	Aggregate	Aggregate	Gasoline	5806444	215050597.7	2.15E+08	0	27151190	0	34.26621	0	15.48995	49.75616	0.381207	0	0.068959	0.450165	0.474106	0.749906	1.674177	0.414523	0	0.07498	0.489502	1.896423	2.142588	4.528514	92643.35	0	2958.361
Statewide Totals	2019	LDT2	Aggregate	Aggregate	Diesel	16976.18	695892.3618	695892.4	0	82400.53	0	0.070996	0	0	0.070996	0.007219	0	0	0.007219	0.001534	0.002325	0.011078	0.007545	0	0	0.007545	0.006137	0.006642	0.020324	263.3738	0	0
Statewide Totals	2019	LDT2	Aggregate	Aggregate	Electricity	791.1012	25990.59856	0	25990.6	3983.135	10034.52	0	0	0	0	0	0	0	0	5.73E-05	4.37E-05	0.000101	0	0	0	0	0.000229	0.000125	0.000354	0	0	0
Statewide Totals	2019	LDT2	Aggregate	Aggregate	Plug-in Hyb	76.05391	3334.542792	1739.634	1594.908	314.4829	481.7099	1.28E-05	0	3.93E-05	5.21E-05	2.87E-06	0	7.95E-07	3.67E-06	7.35E-06	5.02E-06	1.6E-05	3.12E-06	0	8.65E-07	3.99E-06	2.94E-05	1.44E-05	4.77E-05	0.554215	0	0.026397
Statewide Totals	2020	LDT2	Aggregate	Aggregate	Gasoline	5815850	191758272.6	1.92E+08	0	27160595	0	26.83232	0	14.24525	41.07757	0.333772	0	0.067516	0.401288	0.422755	0.670805	1.494848	0.362993	0	0.073426	0.436419	1.69102	1.916586	4.044024	81336	0	2900.651
Statewide Totals	2020	LDT2	Aggregate	Aggregate	Diesel	17642.69	636167.7575	636167.8	0	85291.53	0	0.0579	0	0	0.0579	0.00577	0	0	0.00577	0.001403	0.00215	0.009322	0.006031	0	0	0.006031	0.00561	0.006142	0.017783	238.5517	0	0
Statewide Totals	2020	LHDT1	Aggregate	Aggregate	Gasoline	575267.6	19677545.68	19677546	0	8570631	0	7.205443	0.025982	6.740196	13.97162	0.038301	0	0.004899	0.0432	0.043382	0.592158	0.67874	0.041612	0	0.005311	0.046923	0.173526	1.691881	1.91233	18474.45	78.39304	242.034
Statewide Totals	2020	LHDT1	Aggregate	Aggregate	Diesel	397713.8	14323724.75	14323725	0	5002740	0	47.67494	1.073311	0	48.74825	0.794913	0.012055	0	0.806968	0.047368	0.431045	1.28538	0.830855	0.0126	0	0.843455	0.18947	1.231558	2.264483	9443.381	61.12097	0
Statewide Totals	2020	LHDT2	Aggregate	Aggregate	Gasoline	81302.73	2839781.994	2839782	0	1211290	0	0.860538	0.00367	0.942338	1.806546	0.004415	0	0.000492	0.004907	0.006261	0.099701	0.110869	0.004801	0	0.000535	0.005337	0.025043	0.284859	0.315239	2917.656	12.76806	35.23953
Statewide Totals	2020	LHDT2	Aggregate	Aggregate	Diesel	138980.6	5312960.113	5312960	0	1748201	0	12.7	0.369138	0	13.06914	0.236576	0.004082	0	0.240658	0.01757	0.186531	0.444759	0.247273	0.004267	0	0.25154	0.070278	0.532945	0.854763	4264.361	34.02834	0
Statewide Totals	2020	MCY	Aggregate	Aggregate	Gasoline	691332.9	4003124.24	4003124	0	1382666	0	3.03007	0	0.273447	3.303517	0.008388	0	0.006073	0.014461	0.004413	0.018533	0.037407	0.008923	0	0.006418	0.015342	0.017651	0.052952	0.085945	868.0198	0	85.61793
Statewide Totals	2020	MDV	Aggregate	Aggregate	Gasoline	4248475	148031807.6	1.48E+08	0	19528150	0	36.99604	0	15.14733	52.14337	0.27771	0	0.057225	0.334935	0.326354	0.522942	1.184232	0.301679	0	0.062147	0.363826	1.305418	1.49412	3.163364	77114.51	0	2595.31
Statewide Totals	2020	MDV	Aggregate	Aggregate	Diesel	64326.54	2601267.4	2601267	0	310926.7	0	0.413339	0	0	0.413339	0.026086	0	0	0.026086	0.005735	0.008575	0.040396	0.027266	0	0	0.027266	0.022939	0.024499	0.074705	1274.317	0	0
Statewide Totals	2020	MDV	Aggregate	Aggregate	Electricity	173.7758	3967.14109	0	3967.141	766.8841	1531.644	0	0	0	0	0	0	0	0	8.75E-06	6.76E-06	1.55E-05	0	0	0	0	3.5E-05	1.93E-05	5.43E-05	0	0	0
Statewide Totals	2020	MDV	Aggregate	Aggregate	Plug-in Hyb	11811.49	552852.9777	298597.3	254255.6	48840.5	76792.78	0.002174	0	0.006104	0.008278	0.000648	0	0.000164	0.000812	0.001219	0.000824	0.002854	0.000705	0	0.000178	0.000883	0.004875	0.002353	0.008111	94.2493	0	5.531466
Statewide Totals	2020	MH	Aggregate	Aggregate	Gasoline	113280.7	960857.2345	960857.2	0	11332.6	0	0.72493	0	0.004785	0.729715	0.002185	0	8.31E-06	0.002193	0.003177	0.016345	0.021716	0.002368	0	8.96E-06	0.002377	0.01271	0.0467	0.061787	1977.721	0	0.42201
Statewide Totals	2020	MH	Aggregate	Aggregate	Diesel	35851.86	338280.4186	338280.4	0	3585.186	0	1.833488	0	0	1.833488	0.050515	0	0	0.050515	0.001492	0.005736	0.057742	0.052799	0	0	0.052799	0.005966	0.016389	0.075154	390.1215	0	0
Statewide Totals	2020	MHDT	Aggregate	Aggregate	Gasoline	59029.3	2833588.979	2833589	0	1181058	0	3.014882	0.005701	0.613334	3.633916	0.004644	0	0.001355	0.005999	0.00937	0.048066	0.063435	0.00503	0	0.001456	0.006486	0.037482	0.137331	0.181299	5591.2	36.23857	67.75397
Statewide Totals	2020	MHDT	Aggregate	Aggregate	Diesel	276258.4	11442537.44	11442537	0	3265874	0	53.53498	8.559144	2.941341	65.03546	1.411497	0.053151	0	1.464648	0.03784	0.195537	1.698024	1.475319	0.055554	0	1.530872	0.151359	0.558676	2.240908	14454.36	747.7016	0
Statewide Totals	2020	MHDT	Aggregate	Aggregate	Natural Ga:	1765.568	89908.56703	89908.57	0	16375.37	0	0.014557	0.012872	0	0.027429	8.44E-05	2.95E-05	0	0.000114	0.000297	0.001541	0.001952	9.17E-05	3.21E-05	0	0.000124	0.001189	0.004402	0.005715	92.07747	10.16608	0
Statewide Totals	2020	OBUS	Aggregate	Aggregate	Gasoline	15836.48	762289.1291	762289.1	0	316856.3	0	0.628727	0.001131	0.144351	0.774208	0.000697	0	0.000125	0.000822	0.002521	0.013029	0.016372	0.000757	0	0.000135	0.000892	0.010083	0.037225	0.048201	1512.362	6.774849	11.63579
Statewide Totals	2020	OBUS	Aggregate	Aggregate	Diesel	10405.25	717602.7801	717602.8	0	120963.8	0	4.602099	0.269848	0.113007	4.984953	0.194152	0.00241	0	0.196562	0.002373	0.016711	0.215647	0.202931	0.002519	0	0.20545	0.009492	0.047747	0.262689	1120.121	30.68567	0
Statewide Totals	2020	OBUS	Aggregate	Aggregate	Natural Ga:	517.7037	34449.68963	34449.69	0	4607.563	0	0.007241	0.000898	0	0.008139	2.46E-05	1.74E-06	0	2.64E-05	0.000114	0.000591	0.000731	2.68E-05	1.89E-06	0	2.87E-05	0.000456	0.001688	0.002172	35.66549	0.684432	0
Statewide Totals	2020	SBUS	Aggregate	Aggregate	Gasoline	6993.405	351270.7201	351270.7	0	27973.62	0	0.508466	0.006983	0.018805	0.534254	0.001347	0	5.25E-05	0.001399	0.000774	0.006191	0.008365	0.00145	0	5.64E-05	0.001506	0.003098	0.017689	0.022293	343.6745	20.49879	1.992712
Statewide Totals	2020	SBUS	Aggregate	Aggregate	Diesel	19655.93	442821.4563	442821.5	0	284617.8	0	3.301434	0.604477	0.099198	4.00511	0.019481	0.000913	0	0.020394	0.001464	0.007762	0.029621	0.020361	0.000955	0	0.021316	0.005858	0.022178	0.049352	586.2098	49.55493	0
Statewide Totals	2020	SBUS	Aggregate	Aggregate	Natural Ga:	3581.074	92654.09991	92654.1	0	51853.95	0	0.086756	0.020803	0	0.107559	0.000402	4.49E-05	0	0.000447	0.000306	0.001658	0.002411	0.000438	4.88E-05	0	0.000486	0.001226	0.004736	0.006448	166.8605	16.36098	0
Statewide Totals	2020	UBUS	Aggregate	Aggregate	Gasoline	2718.338	233743.2583	233743.3	0	10873.35	0	0.040426	0	0.01015	0.050576	0.00019	0	3.4E-06	0.000194	0.000629	0.008962	0.009784	0.000207	0	3.69E-06	0.000211	0.002515	0.025604	0.028331	348.629	0	0.936652
Statewide Totals	2020	UBUS	Aggregate	Aggregate	Diesel	3856.541	382199.7338	382199.7	0	15426.16	0	1.347144	0	0	1.347144	0.003551	0	0	0.003551	0.003303	0.016202	0.023057	0.003712	0	0	0.003712	0.013213	0.046291	0.063216	578.1144	0	0
Statewide Totals	2020	UBUS	Aggregate	Aggregate	Electricity	199.805	9703.630511	0	9703.631	799.22	19096.85	0	0	0	0	0	0	0	0	8.16E-05	0.000203	0.000284	0	0	0	0	0.000327	0.000579	0.000906	0	0	0
Statewide Totals	2020	UBUS	Aggregate	Aggregate	Natural Ga:	7135.633	842516.6455	842516.6	0	28542.53	0	2.184147	0	0	2.184147	0.001978	0	0	0.001978	0.007584	0.035658	0.045219	0.002067	0	0	0.002067	0.030336	0.101879	0.134282	2043.305	0	0

Statewide Totals	2020	LDT2	Aggregate	Aggregate	Electricity	1418.488	42582.70558	0	42582.71	7205.089	16440.44	0	0	0	0	0	0	0	0	9.39E-05	7.16E-05	0.000165	0	0	0	0	0.000376	0.000205	0.00058	0	0	0
Statewide Totals	2020	LDT2	Aggregate	Aggregate	Plug-in Hyb	11538.88	496463.6927	261279.7	235184	47713.25	71032.56	0.001921	0	0.005961	0.007882	0.00051	0	0.000142	0.000652	0.001095	0.000748	0.002494	0.000554	0	0	0.000155	0.000709	0.004378	0.002136	0.007223	83.20063	0	0	4.316013
Statewide Totals	2020	LHDT1	Aggregate	Aggregate	Gasoline	561742	17084289.35	17084289	0	8369119	0	5.74868	0.025083	6.512483	12.28625	0.03128	0	0.004218	0.035497	0.037664	0.514119	0.587281	0.03401	0	0.004583	0.038593	0.150658	1.468912	1.658163	15790.95	76.31892	237.5813
Statewide Totals	2020	LHDT1	Aggregate	Aggregate	Diesel	393958	12430567.32	12430567	0	4955496	0	38.91484	1.043409	0	39.95824	0.666062	0.011843	0	0.677905	0.041107	0.374074	1.093086	0.696178	0.012378	0	0.708556	0.164428	1.068784	1.941768	8163.257	60.16969	0	0
Statewide Totals	2020	LHDT2	Aggregate	Aggregate	Gasoline	80150.95	2466937.474	2466937	0	1194130	0	0.686263	0.003571	0.920304	1.610137	0.003674	0	0.000448	0.004122	0.005439	0.086611	0.096172	0.003996	0	0.000487	0.004483	0.021755	0.247459	0.273697	2499.534	12.5516	34.57645
Statewide Totals	2020	LHDT2	Aggregate	Aggregate	Diesel	140951.3	4705516.762	4705517	0	1772991	0	10.4988	0.365565	0	10.86436	0.202184	0.004132	0	0.206316	0.015561	0.165204	0.387081	0.211326	0.004319	0	0.215645	0.062243	0.472012	0.7499	3750.498	34.27427	0	0
Statewide Totals	2020	MCY	Aggregate	Aggregate	Gasoline	687073	3460608.325	3460608	0	1374146	0	2.578174	0	0.262957	2.841131	0.007267	0	0.005799	0.013065	0.003815	0.016022	0.032902	0.007737	0	0.006134	0.013871	0.015259	0.045776	0.074906	749.9925	0	83.68254
Statewide Totals	2020	MDV	Aggregate	Aggregate	Gasoline	4210868	129955428	1.3E+08	0	19309995	0	29.23972	0	13.93921	43.17893	0.238817	0	0.054955	0.293772	0.286503	0.460903	1.041178	0.259494	0	0.059699	0.319193	1.146011	1.316867	2.782071	66895.51	0	2527.323
Statewide Totals	2020	MDV	Aggregate	Aggregate	Diesel	64658.28	2266982.386	2266982	0	310001.8	0	0.336439	0	0	0.336439	0.022086	0	0	0.022086	0.004998	0.007608	0.034692	0.023085	0	0	0.023085	0.019991	0.021736	0.064812	1104.246	0	0	0
Statewide Totals	2020	MDV	Aggregate	Aggregate	Electricity	1934.124	59770.35346	0	59770.35	9916.462	23076.29	0	0	0	0	0	0	0	0	0.000132	0.0001	0.000232	0	0	0	0	0.000527	0.000287	0.000814	0	0	0
Statewide Totals	2020	MDV	Aggregate	Aggregate	Plug-in Hyb	13353.97	542758.0767	291580.6	251177.5	55218.65	75863.09	0.002125	0	0.006902	0.009027	0.000611	0	0.000179	0.00079	0.001197	0.000811	0.002797	0.000664	0	0.000195	0.000859	0.004786	0.002317	0.007962	92.14946	0	6.22981
Statewide Totals	2020	MH	Aggregate	Aggregate	Gasoline	106435.6	797947.4509	797947.5	0	10647.82	0	0.556167	0	0.004545	0.560713	0.001653	0	6.49E-06	0.001659	0.002639	0.013573	0.017871	0.001795	0	7.02E-06	0.001802	0.010555	0.03878	0.051136	1641.998	0	0.386023
Statewide Totals	2020	MH	Aggregate	Aggregate	Diesel	35765.27	293682.8741	293682.9	0	3576.527	0	1.557882	0	0	1.557882	0.042489	0	0	0.042489	0.001295	0.004979	0.048763	0.04441	0	0	0.04441	0.00518	0.014227	0.063817	338.4207	0	0	0
Statewide Totals	2020	MHDT	Aggregate	Aggregate	Gasoline	55656.99	2427237.2	2427237	0	1113585	0	2.250945	0.0054	0.567071	2.823415	0.003371	0	0.000813	0.004184	0.008027	0.041163	0.053374	0.003666	0	0.000885	0.004551	0.032107	0.117609	0.154266	4763.293	34.09554	60.2239
Statewide Totals	2020	MHDT	Aggregate	Aggregate	Diesel	271763.6	11585754.25	11585754	0	3221070	0	34.78748	6.607566	4.110847	45.50589	0.731831	0.027412	0	0.759244	0.038313	0.197929	0.995486	0.764921	0.028652	0	0.793573	0.153253	0.565511	1.512338	14362.19	721.9888	0	0
Statewide Totals	2020	MHDT	Aggregate	Aggregate	Natural Ga	2138.985	106294.3429	106294.3	0	19557.73	0	0.015901	0.015597	0	0.031498	0.000105	3.84E-05	0	0.000144	0.000352	0.00182	0.002315	0.000115	4.17E-05	0	0.000156	0.001406	0.005199	0.006762	108.9831	12.60877	0	0
Statewide Totals	2020	OBUS	Aggregate	Aggregate	Gasoline	15203.77	633793.8345	633793.8	0	304196.9	0	0.493501	0.001086	0.137711	0.632298	0.000574	0	0.000102	0.000676	0.002096	0.010832	0.013604	0.000624	0	0.000111	0.000735	0.008384	0.030949	0.040068	1253.684	6.497183	10.97871
Statewide Totals	2020	OBUS	Aggregate	Aggregate	Diesel	9759.428	713789.4429	713789.4	0	114409	0	2.555652	0.206573	0.156725	2.91895	0.064073	0.000707	0	0.06478	0.00236	0.016424	0.083565	0.06697	0.000739	0	0.067709	0.009442	0.046927	0.124078	1088.223	29.40335	0	0
Statewide Totals	2020	OBUS	Aggregate	Aggregate	Natural Ga	661.1598	41136.59804	41136.6	0	5884.322	0	0.008178	0.001141	0	0.009318	3.15E-05	2.36E-06	0	3.39E-05	0.000136	0.000705	0.000875	3.43E-05	2.57E-06	0	3.69E-05	0.000544	0.002014	0.002595	42.70037	0.887933	0	0
Statewide Totals	2020	SBUS	Aggregate	Aggregate	Gasoline	6177.615	273770.1174	273770.1	0	24710.46	0	0.229522	0.006257	0.018428	0.254206	0.000422	0	1.79E-05	0.00044	0.000604	0.00483	0.005874	0.000459	0	1.94E-05	0.000479	0.002414	0.0138	0.016693	262.3801	18.05365	1.669598
Statewide Totals	2020	SBUS	Aggregate	Aggregate	Diesel	19505.23	439830.0535	439830.1	0	282435.7	0	3.129918	0.592319	0.103885	3.826122	0.017692	0.000818	0	0.01851	0.001454	0.007709	0.027673	0.018492	0.000855	0	0.019347	0.005818	0.022026	0.04719	580.1635	49.16727	0	0
Statewide Totals	2020	SBUS	Aggregate	Aggregate	Natural Ga	3681.665	95645.50264	95645.5	0	53310.51	0	0.086514	0.021355	0	0.107869	0.000415	4.7E-05	0	0.000462	0.000316	0.001711	0.00249	0.000452	5.11E-05	0	0.000503	0.001265	0.004889	0.006657	171.381	16.86993	0	0
Statewide Totals	2020	UBUS	Aggregate	Aggregate	Gasoline	2745.123	236020.2255	236020.2	0	10980.49	0	0.034681	0	0.009447	0.044128	0.000223	0	4.27E-06	0.000228	0.000635	0.00905	0.009913	0.000243	0	4.64E-06	0.000248	0.002541	0.025857	0.028645	350.2712	0	0.942471
Statewide Totals	2020	UBUS	Aggregate	Aggregate	Diesel	3621.709	361783.5742	361783.6	0	14486.84	0	0.481379	0	0	0.481379	0.002783	0	0	0.002783	0.00311	0.015337	0.02123	0.002909	0	0	0.002909	0.012438	0.043819	0.059167	517.1798	0	0	0
Statewide Totals	2020	UBUS	Aggregate	Aggregate	Electricity	194.7265	9517.787961	0	9517.788	778.9062	18709.7	0	0	0	0	0	0	0	0	8.11E-05	0.000201	0.000283	0	0	0	0	0.000325	0.000575	0.0009	0	0	0
Statewide Totals	2020	UBUS	Aggregate	Aggregate	Natural Ga	7487.993	875471.4235	875471.4	0	29951.97	0	1.0453	0	0	1.0453	0.000759	0	0	0.000759	0.00789	0.037053	0.045701	0.000793	0	0	0.000793	0.03156	0.105866	0.138218	2125.777	0	0	0
Statewide Totals	2021	HHDT	Aggregate	Aggregate	Gasoline	297.3703	12525.04866	12525.05	0	5949.786	0	0.154345	0	0.00631	0.160655	5.19E-05	0	1.3E-05	6.49E-05	6.9E-05	0.000494	0.000628	5.64E-05	0	1.42E-05	7.06E-05	0.000276	0.001411	0.001758	33.61093	0	0.356275
Statewide Totals	2021	HHDT	Aggregate	Aggregate	Diesel	280809.4	40518102.46	40518102	0	4535953	0	120.9866	25.64796	11.3497	157.9843	1.74722	0.023254	0	1.770474	0.396146	1.234609	3.40123	1.826222	0.024306	0	1.850527	1.584585	3.527455	6.962568	73353.67	4824.118	0	0
Statewide Totals	2021	HHDT	Aggregate	Aggregate	Natural Ga	15132.1	1070718.216	1070718	0	110511.5	0	1.60695	0.184741	0	1.791691	0.002989	0.000275	0	0.003263	0.010622	0.060554	0.07444	0.00325	0.000299	0	0.003549	0.04249	0.173013	0.219051	1597.632	151.837	0	0
Statewide Totals	2021	LDA	Aggregate	Aggregate	Gasoline	13261741	508431764.6	5.08E+08	0	61620786	0	34.19421	0	20.2287	54.42292	0.807646	0	0.148052	0.955699	1.120901	1.510795	3.587395	0.878365	0	0.161007	1.039372	4.483604	4.316557	9.839533	168585.6	0	5064.561
Statewide Totals	2021	LDA	Aggregate	Aggregate	Diesel	55460.92	1751915.894	1751916	0	238653.6	0	0.593441	0	0	0.593441	0.046273	0	0	0.046273	0.003862	0.005189	0.055324	0.048365	0	0	0.048365	0.015449	0.014827	0.078641	479.4331	0	0	0
Statewide Totals	2021	LDA	Aggregate	Aggregate	Electricity	426202.6	18018951.17	0	18018951	2143579	6956802	0	0	0	0	0	0	0	0	0.039725	0.030349	0.070074	0	0	0	0	0.1589	0.08671	0.24561	0	0	0
Statewide Totals	2021	LDA	Aggregate	Aggregate	Plug-in Hyb	250952.6	11746558.21	6243355	5503203	1037689	1662131	0.045756	0	0.129622	0.175378	0.01088	0	0.002732	0.013612	0.025897	0.017683	0.057191	0.011833	0	0.002971	0.014804	0.103587	0.050522	0.168913	1982.213	0	77.39149	0
Statewide Totals	2021	LDT1	Aggregate	Aggregate	Gasoline	1431765	47246754.96	47246755	0	6242429	0	12.26295	0	3.661028	15.92398	0.137173	0	0.025642	0.162815	0.104161	0.172646	0.439622	0.149169	0	0.027883	0.177052	0.416645	0.493274	1.086972	18664.65	0	658.34	0
Statewide Totals	2021	LDT1	Aggregate	Aggregate	Diesel	929.8843	13811.26075	13811.26	0	2807.695	0	0.024359	0	0	0.024359	0.003762	0	0	0.003762	3.04E-05	5.71E-05	0.003849	0.003932	0	0	0.003932	0.000122	0.000163	0.004217	6.519728	0	0	0
Statewide Totals	2021	LDT1	Aggregate	Aggregate	Electricity	1861.372	59159.25246	0	59159.25	8529.175	22840.35	0	0	0	0	0	0	0	0	0.00013	0.000101	0.000231	0	0	0	0	0.000522	0.000287	0.000809	0	0	0
Statewide Totals	2021	LDT1	Aggregate	Aggregate	Plug-in Hyb	249.6842	12838.65615	6537.294	6301.362	1032.444	1903.199	4.81E-05	0	0.000129	0.000177	7.73E-06	0	1.87E-06	9.6E-06	2.83E-05	1.94E-05	5.73E-05	8.4E-06	0	2.03E-06	1.04E-05	0.000113	5.54E-05	0.000179	2.083842	0	0.084356	0
Statewide Totals	2021	LDT2	Aggregate	Aggregate	Gasoline	5866045	226498420.2	2.26E+08	0	27380953	0	27.72282	0	13.16651	40.88933	0.377314	0	0.065445	0.442759	0.499344	0.792666	1.734769	0.410353	0	0.071175	0.481529	1.997376	2.264759	4.743664	94189.5	0	2856.373	0
Statewide Totals	2021	LDT2	Aggregate	Aggregate	Diesel	18603.36	775449.3284	775449.3	0	89565.66	0	0.063535	0	0	0.063535	0.006433	0	0	0.006433	0.00171	0.002639	0.010782	0.006723	0	0	0.006723	0.006838	0.007541	0.021103	286.98	0	0	0
Statewide Totals	2021	LDT1	Aggregate	Aggregate	Electricity	2056.446	71368.05233	0	71368.05	9517.803	27553.96	0	0	0	0	0	0	0	0	0.000157	0.000121	0.000278	0	0	0	0	0.000629	0.000346	0.000975	0	0	0
Statewide Totals	2021	LDT1	Aggregate	Aggregate	Plug-in Hyb	562.6718	29065.96212	13923.21	15142.75	2326.648	4573.562	0.000102	0	0.00029	0.000393	1.48E-05	0	3.76E-06	1.85E-05	6.41E-05	4.43E-05	0.000127	1.61E-05	0	4.09E-06	2.02E-05	0.000256	0.000126	0.000403	4.436842	0	0.185572	0
Statewide Totals	2021	LDT2	Aggregate	Aggregate	Gasoline	5974705	234480220.8	2.34E+08	0	27900440	0	25.01555	0	12.26888	37.28443	0.373309	0	0.064233	0.437542	0.516941	0.819766	1.774249	0.406	0	0.069858	0.475858	2.067763	2.342189	4.88581	95283.81	0	2835.771	0
Statewide Totals	2021	LDT2	Aggregate	Aggregate	Diesel	5636.924	205522.9121	0	205522.9	29031.74	79348.81	0	0	0	0	0	0	0	0	0.000453	0.000345	0.000798	0	0	0	0	0.001812	0.000986	0.002798	0	0	0
Statewide Totals	2021	LDT2	Aggregate	Aggregate	Plug-in Hyb	18983.4	948639.7119	490471.3	458168.4	78496.37	138380.5	0.003605	0	0.009806	0.013411	0.000763	0	0.000188	0.00095	0.002091	0.001432	0.004473	0.00083	0	0.000204	0.001034	0.008366	0.004091	0.01349	156.1883	0	0	6.942341
Statewide Totals	2021	LHDT1	Aggregate	Aggregate	Gasoline	551145.4	19675740.94	19675741	0	8211246	0	6.052077	0.024209	6.287498	12.36378	0.03444	0	0.003798	0.038239	0.043378	0.592104	0.67372	0.037457	0	0.004131	0.041588	0.17351	1.691726	1.906824	17851.4	74.50393	234.0167	0
Statewide Totals	2021	LHDT1	Aggregate	Aggregate	Diesel	390871.3	14355664.17	14355664	0	4916670	0	41.74261	1.010492	0	42.7531	0.734784	0.011673	0	0.746456	0.047473	0.432006	1.225936	0.768007	0.012201	0	0.780208	0.189893	1.234304	2.204405	9385.921	59.32203	0	0
Statewide Totals	2021	LHDT2	Aggregate	Aggregate	Gasoline	78747.06	2814534.973	2814535	0	1173214	0	0.716788	0.003451	0.892262	1.6125	0.00403	0	0.000407	0.004436	0.006205	0.098814	0.109456	0.004382	0	0.000442	0.004825	0.02482	0.282327	0.311972	2810.55	12.28016	33.76446	0
Statewide Totals	2021	LHDT2	Aggregate	Aggregate	Diesel	143030.6	5537001.156	5537001	0	1799145	0	11.41972	0.360126	0	11.77984	0.228068	0.004189	0	0.232258	0.01831	0.194396	0.444965	0.23838	0.004379	0	0.242759	0.073242	0.555418	0.87142	4378.097	34.53671	0	0
Statewide Totals	2021	MCY	Aggregate	Aggregate	Gasoline	685404.8	3984080.095	3984080	0	1370810	0	2.898794	0	0.253379	3.152173	0.008415	0	0.005622	0.014037	0.004392	0.018445	0.036874	0.008967	0	0.005953	0.01492	0.017567	0.0527	0.085187	861.1563	0	81.90786	0
Statewide Totals	2021	MDV	Aggregate	Aggregate	Gasoline	4190533	151246828.8	1.51E+08	0	19190249	0	30.08821	0	12.7931	42.88132	0.265863	0	0.0522	0.318062	0.333442	0.537271	1.188776	0.288949	0	0.056722	0.345671	1.33377	1.535061	3.214502	76597.93	0	2463.054	0
Statewide Totals	2021	MDV	Aggregate	Aggregate	Diesel	65072.29	2611473.537	2611474	0	309642.3	0	0.358107	0	0	0.358107	0.024337	0	0	0.024337	0.005757	0.008895	0.038989	0.025437	0	0	0.025437	0.023029	0.025414	0.073881	1262.706	0	0	0
Statewide Totals	2021	MDV	Aggregate	Aggregate	Electricity	5940.702	216576.5827	0	216576.6	30589.7	83616.44	0	0	0	0	0	0	0	0	0.000477	0.000363	0.000841	0	0	0	0	0.00191	0.001039	0.002948	0	0	0
Statewide Totals	2021	MDV	Aggregate	Aggregate	Plug-in Hyb	15475.14	722212.8124	384153.6	338059.2	63989.71	102104	0.002804	0	0.007999	0.010803	0.000739	0	0.000191	0.000931	0.001592	0.001082	0.003605	0.000804	0	0.000208	0.001012	0.006369	0.003092	0.010473	121.4949	0	7.137042	0
Statewide Totals	2021	MH	Aggregate	Aggregate	Gasoline	100319.7	877900.8489	877900.8	0	10035.99	0	0.561117	0	0.004343	0.56546	0.001664	0	5.14E-06	0.001669	0.002903	0.014932	0.019504	0.001809	0	5.59E-06	0.001815	0.011613	0.042662	0.056089	1804.913	0	0.355812	0
Statewide Totals	2021	MH	Aggregate	Aggregate	Diesel	35718.1	337610.2483	337610.2	0	3571.81	0	1.749951	0	0	1.749951	0.047283	0	0	0.047283	0.001489	0.005723	0.054495	0.049421	0	0	0.049421	0.005954	0.016353	0.071728	389.0843	0	0	0
Statewide Totals	2021	MHDT	Aggregate	Aggregate	Gasoline	53467.09	2746553.128	2746553	0	1069769	0	2.21118	0.005203	0.534908	2.751291	0.003616	0	0.000717	0.004333	0.009083	0.046576	0.059991	0.003933	0	0.00078	0.004713	0.036331	0.133073	0.174117	5337.588	32.57273	57.05183	0
Statewide Totals	2021	MHDT	Aggregate	Aggregate	Diesel	268011	11734361.35	11734361	0	3180879	0	23.63049	4.867546	4.990366	33.4884	0.285675	0.014299	0	0.299974	0.038805	0.200461	0.539239	0.298591	0.014946	0	0.313537	0.155219	0.572746	1.041502	14564.69	692.2458	0	0
Statewide Totals	2021	MHDT	Aggregate	Aggregate	Natural Ga	2446.806	119909.7504	119909.8	0	22356.8	0	0.017321	0.017799	0	0.03512	0.000122	4.51E-05	0	0.000167	0.000397	0.002053	0.002616	0.000133	4.9E-05	0	0.000182	0.001586	0.005865	0.007633	122.151	14.41918	0	0
Statewide Totals	2021	OBUS	Aggregate	Aggregate	Gasoline	14659.93	693577.9256	693577.9	0	293315.9	0	0.510747	0.001047	0.132619	0.644413	0.000635	0	9.41E-05	0.000729	0.002294	0.011853	0.014875	0.00069	0	0.000102	0.000793	0.009174	0.033865	0.043832	1362.913	6.242808	10.48171	0
Statewide Totals	2021	OBUS	Aggregate	Aggregate	Diesel	9623.847	712971.807	712971.8	0	112541.8	0	1.866065	0.168194	0.173483	2.207743	0.039144	0.000361	0	0.039505	0.002358	0.016293	0.058155	0.040914	0.000377	0	0.041291	0.009431	0.04655	0.097272	1084.721	28.49312	0	0
Statewide Totals	2021	OBUS	Aggregate	Aggregate	Natural Ga	746.8969	44802.67849	44802.68	0	6647.383	0	0.008758	0.001287	0	0.010045	3.48E-05	2.71E-06	0	3.75E-05	0.000148	0.000767	0.000953	3.78E-05	2.94E-06	0	4.07E-05	0.000593	0.002193	0.002826	46.36847	1.005403	0	0
Statewide Totals	2021	SBUS	Aggregate	Aggregate	Gasoline	6233.8	323255.3912	323255.4	0	24935.2	0	0.261666	0.006324	0.018782	0.286772	0.000454	0	1.67E-05	0.000471	0.000713	0.005704	0.006887	0.000494	0	1.82E-05	0.000512	0.002851	0.016297	0.019659	308.5956	18.15274	1.668267	0
Statewide Totals	2021	SBUS	Aggregate	Aggregate	Diesel	19483.18	436716.2457	436716.2	0	282116.4	0	2.963146	0.581061	0.110184	3.654391	0.01642	0.000743	0	0.017163	0.001444	0.007653	0.026261	0.017163	0.000777	0	0.017939	0.005777	0.021866	0.045582	573.4678	49.01572	0	0
Statewide Totals	2021	SBUS	Aggregate	Aggregate	Natural Ga	3842.419	98759.31043	98759.31	0	55638.23	0	0.086279	0.022235	0	0.108514	0.000429	5.03E-05	0	0.000479	0.000327	0.001767	0.002573	0.000466	5.47E-05	0	0.000521	0.001306	0.005048	0.006876	175.6534	17.63945	0	0
Statewide Totals	2021	UBUS	Aggregate	Aggregate	Gasoline	2766.632	237775.1406	237775.1	0	11066.53	0	0.036897	0	0.009651	0.046549	0.00023	0	4.46E-06	0.000235	0.00064	0.009118	0.009993	0.00025	0	4.85E-06	0.000255	0.00256	0.026051	0.028867	352.6787	0	0.949558	0
Statewide Totals	2021	UBUS	Aggregate	Aggregate	Diesel	3606.232	361214.0732	361214.1	0	14424.93	0	0.415954	0	0	0.415954	0.00274	0	0	0.00274	0.003116	0.015312	0.021168	0.002864	0	0	0.002864	0.012464	0.04375	0.059078	513.5775	0	0	0
Statewide Totals	2021	UBUS	Aggregate	Aggregate	Electricity	194.6433	9509.746024	0	9509.746	778.5731	18695.44	0	0	0	0	0	0	0	0	8.11E-05	0.000201	0.000282	0	0	0	0	0.000324	0.000575	0.000899	0	0	0
Statewide Totals	2021	UBUS	Aggregate	Aggregate	Natural Ga	7587.414	885375.8348	885375.8	0	30349.66	0	0.611465	0	0	0.611465	0.00041	0	0	0.00041	0.007967	0.037473	0.045849	0.000428	0	0	0.000428	0.031869	0.107065	0.139361	2154.096	0	0	0
Statewide Totals	2022	HHDT	Aggregate	Aggregate	Gasoline	235.5107	11307.09268	11307.09	0	4712.098	0	0.114391	0	0.003113	0.117503	3.96E-05	0	9.48E-06	4.91E-05	6.23E-05	0.000435	0.000546	4.31E-05	0	1.03E-05	5.34E-05	0.000249	0.001242	0.001545	29.55704	0	0.281845	0
Statewide Totals	2022	HHDT	Aggregate	Aggregate	Diesel	289296.3	41279363.01	41279363	0	4687045	0	105.7867	26.14852	12.62802	144.5632	1.320833	0.012835	0	1.333668	0.403618	1.24267	2.979956	1.380555	0.013416	0	1.393971	1.614471	3.550485	6.558927	73941.38	4948.229	0	0
Statewide Totals	2022	HHDT	Aggregate	Aggregate	Natural Ga	16256.35	1128074.17	1128074	0	119081.8	0	1.534225	0.193564	0	1.727789	0.002919	0.000309	0	0.003228	0.011191	0.063951	0.07837	0.003175	0.000336	0	0.003511	0.044766	0.182716	0.230992	1656.531	162.6335	0	0
Statewide Totals	2022	LDA	Aggregate	Aggregate	Gasoline	13143383	510193142.8	5.1E+08	0	61016807	0	30.35824	0	18.96884	49.32708	0.778693	0	0.140947	0.91964	1.124784	1.515757	3.56018	0.846885	0	0.153284	1.00017	4.499136	4.330734	9.83004	166466.3	0	4916.56	0
Statewide Totals	2022	LDA	Aggregate	Aggregate	Diesel	52549.89	1638915.898	1638916	0	224018.3	0	0.511769	0	0	0.511769	0.041166	0	0	0.041166	0.003613	0.004873	0.049652	0.043027	0	0	0.043027	0.014453	0.013922	0.071402	445.8747	0	0	0
Statewide Totals	2022	LDA	Aggregate	Aggregate	Electricity	514826	22671752.72	0	22671753	2581275	8753168	0	0	0	0	0	0	0	0	0.049983	0.038199	0.088182	0	0	0	0	0.199931	0.10914	0.309071	0	0	0
Statewide Totals	2022	LDA	Aggregate	Aggregate	Plug-in Hyb	286134.2	13453824.58	6983076	6470749	1183165	1954359	0.05117	0	0.147822	0.198992	0.011342	0	0.002913	0.014255	0.029661	0.020316	0.064232	0.012335	0	0.003168	0.015503	0.118642	0.058046	0.192192	2216.104	0	87.0665	0
Statewide Totals	2022	LDT1	Aggregate	Aggregate	Gasoline	1390472	46559751.09	46559751	0	6056811	0	10.9647	0	3.363926	14.32862	0.126531	0	0.023425	0.149956	0.102647	0.17019	0.422792	0.137601	0	0.025473	0.163074	0.410

Statewide Totals	2022	LDT2	Aggregate	Aggregate	Diesel	19744.24	825357.1672	825357.2	0	94698.92	0	0.061447	0	0	0.061447	0.006438	0	0	0.006438	0.00182	0.002824	0.011081	0.006729	0	0	0.006729	0.007278	0.008069	0.022076	300.6021	0	0
Statewide Totals	2022	LDT2	Aggregate	Aggregate	Electricity	14292.26	527979.6753	0	527979.7	73625.96	203843.7	0	0	0	0	0	0	0	0	0.001164	0.000887	0.002051	0	0	0	0	0.004656	0.002533	0.007189	0	0	0
Statewide Totals	2022	LDT2	Aggregate	Aggregate	Plug-in Hyb	28288.06	1415176.803	701739.6	713437.2	116971.1	215479.3	0.005155	0	0.014613	0.019768	0.000951	0	0.000242	0.001194	0.00312	0.002147	0.006461	0.001034	0	0.000264	0.001298	0.01248	0.006135	0.019913	223.339	0	10.11201
Statewide Totals	2022	LHDT1	Aggregate	Aggregate	Gasoline	544428.9	19918185.31	19918185	0	8111179	0	5.507017	0.023363	6.073305	11.60368	0.033499	0	0.003497	0.036995	0.043912	0.5994	0.680307	0.036433	0	0.003803	0.040236	0.175648	1.712571	1.928455	17660.44	73.09471	231.3403
Statewide Totals	2022	LHDT1	Aggregate	Aggregate	Diesel	389745.9	14556630.88	14556631	0	4902513	0	38.71576	0.975411	0	39.69117	0.703236	0.011563	0	0.714799	0.048138	0.438054	1.200991	0.735034	0.012086	0	0.747119	0.192551	1.251583	2.191254	9457.101	58.67358	0
Statewide Totals	2022	LHDT2	Aggregate	Aggregate	Gasoline	77809.99	2819605.111	2819605	0	1159253	0	0.648812	0.00333	0.865052	1.517194	0.003882	0	0.000369	0.004251	0.006216	0.098992	0.10946	0.004222	0	0.000401	0.004623	0.024865	0.282836	0.312324	2766.276	12.06448	33.14875
Statewide Totals	2022	LHDT2	Aggregate	Aggregate	Diesel	146007.3	5721386.57	5721387	0	1836589	0	10.76615	0.353629	0	11.11977	0.223772	0.004275	0	0.228047	0.01892	0.20087	0.447837	0.23389	0.004468	0	0.238358	0.075681	0.573914	0.887953	4477.189	34.94392	0
Statewide Totals	2022	MCY	Aggregate	Aggregate	Gasoline	688600.8	4045590.915	4045591	0	1377202	0	2.854007	0	0.244712	3.09872	0.008608	0	0.005512	0.01412	0.00446	0.01873	0.03731	0.009181	0	0.005842	0.015022	0.017838	0.053514	0.086374	870.9139	0	80.49857
Statewide Totals	2022	MDV	Aggregate	Aggregate	Gasoline	4194606	153878564.3	1.54E+08	0	19210125	0	26.35456	0	11.7273	38.08186	0.255663	0	0.04936	0.305023	0.339244	0.546451	1.190718	0.278014	0	0.053673	0.331686	1.356977	1.561288	3.249951	76389.19	0	2408.209
Statewide Totals	2022	MDV	Aggregate	Aggregate	Diesel	65562.93	2614655.725	2614656	0	309843	0	0.328435	0	0	0.328435	0.023128	0	0	0.023128	0.005764	0.009015	0.037907	0.024173	0	0	0.024173	0.023057	0.025758	0.072989	1252.407	0	0
Statewide Totals	2022	MDV	Aggregate	Aggregate	Electricity	14432.6	532367.6994	0	532367.7	74304.77	205537.9	0	0	0	0	0	0	0	0	0.001174	0.000894	0.002067	0	0	0	0	0.004695	0.002554	0.007248	0	0	0
Statewide Totals	2022	MDV	Aggregate	Aggregate	Plug-in Hyb	19497.13	913414.9003	469582.9	443832	80620.62	134050.5	0.003431	0	0.010077	0.013508	0.000806	0	0.000214	0.00102	0.002014	0.001376	0.00441	0.000877	0	0.000233	0.001109	0.008055	0.003932	0.013096	148.6208	0	8.796865
Statewide Totals	2022	MH	Aggregate	Aggregate	Gasoline	94610.42	842891.6435	842891.6	0	9464.827	0	0.485364	0	0.004186	0.48955	0.001499	0	4.54E-06	0.001504	0.002787	0.014335	0.018627	0.001631	0	4.93E-06	0.001636	0.01115	0.040958	0.053743	1731.713	0	0.333148
Statewide Totals	2022	MH	Aggregate	Aggregate	Diesel	35746.93	339063.7117	339063.7	0	3574.693	0	1.710434	0	0	1.710434	0.045748	0	0	0.045748	0.001495	0.005747	0.05299	0.047817	0	0	0.047817	0.00598	0.016421	0.070217	390.818	0	0
Statewide Totals	2022	MHDT	Aggregate	Aggregate	Gasoline	51781.25	2721967.294	2721967	0	1036039	0	1.874817	0.005053	0.508166	2.388036	0.00344	0	0.000643	0.004083	0.009001	0.046159	0.059243	0.003742	0	0.000699	0.004441	0.036005	0.131883	0.172329	5229.841	31.32963	54.37556
Statewide Totals	2022	MHDT	Aggregate	Aggregate	Diesel	269999.8	11888586.82	11888587	0	3210829	0	21.32226	4.60538	5.196791	31.12443	0.227931	0.011792	0	0.239723	0.039315	0.203088	0.482126	0.238237	0.012326	0	0.250562	0.157259	0.580252	0.988074	14726.24	691.9275	0
Statewide Totals	2022	MHDT	Aggregate	Aggregate	Natural Ga:	2682.505	130841.2014	130841.2	0	24275.95	0	0.017974	0.019535	0	0.037509	0.000138	5.12E-05	0	0.00019	0.000433	0.00224	0.002863	0.00015	5.57E-05	0	0.000206	0.001731	0.006401	0.008338	132.6671	15.90223	0
Statewide Totals	2022	OBUS	Aggregate	Aggregate	Gasoline	14156.38	662542.8815	662542.9	0	283240.9	0	0.456245	0.001012	0.127871	0.585128	0.00062	0	9.1E-05	0.000711	0.002191	0.011321	0.014223	0.000674	0	9.9E-05	0.000773	0.008764	0.032345	0.041882	1290.585	6.000156	10.04872
Statewide Totals	2022	OBUS	Aggregate	Aggregate	Diesel	9619.51	714733.6466	714733.6	0	112668.2	0	1.632651	0.147583	0.184918	1.965153	0.029325	0.000201	0	0.029525	0.002364	0.016252	0.04814	0.03065	0.00021	0	0.03086	0.009454	0.046433	0.086748	1089.674	28.25897	0
Statewide Totals	2022	OBUS	Aggregate	Aggregate	Natural Ga:	785.017	46358.22531	46358.23	0	6986.651	0	0.009073	0.001352	0	0.010425	3.62E-05	2.85E-06	0	3.9E-05	0.000153	0.000794	0.000987	3.93E-05	3.1E-06	0	4.24E-05	0.000613	0.00227	0.002926	47.97119	1.055733	0
Statewide Totals	2022	SBUS	Aggregate	Aggregate	Gasoline	6320.118	332566.391	332566.4	0	25280.47	0	0.258091	0.00642	0.01929	0.283801	0.00043	0	1.6E-05	0.000446	0.000733	0.005869	0.007048	0.000468	0	1.74E-05	0.000485	0.002933	0.016768	0.020186	316.1102	18.33239	1.674504
Statewide Totals	2022	SBUS	Aggregate	Aggregate	Diesel	19453.89	433547.7509	433547.8	0	281692.3	0	2.793233	0.568614	0.116595	3.478442	0.01521	0.000679	0	0.015889	0.001434	0.007596	0.024919	0.015898	0.000709	0	0.016607	0.005735	0.021704	0.044046	566.4898	48.80455	0
Statewide Totals	2022	SBUS	Aggregate	Aggregate	Natural Ga:	4005.238	101927.8052	101927.8	0	57995.84	0	0.085887	0.023125	0	0.109012	0.000443	5.36E-05	0	0.000496	0.000337	0.001824	0.002657	0.000481	5.83E-05	0	0.00054	0.001348	0.00521	0.007098	179.8133	18.40684	0
Statewide Totals	2022	UBUS	Aggregate	Aggregate	Gasoline	2788.073	239525.6947	239525.7	0	11152.29	0	0.036164	0	0.009476	0.045639	0.000252	0	5.15E-06	0.000257	0.000645	0.009186	0.010088	0.000274	0	5.6E-06	0.00028	0.002579	0.026246	0.029105	354.7719	0	0.95509
Statewide Totals	2022	UBUS	Aggregate	Aggregate	Diesel	3556.206	356650.3672	356650.4	0	14224.83	0	0.34285	0	0	0.34285	0.002673	0	0	0.002673	0.003079	0.015118	0.02087	0.002794	0	0	0.002794	0.012317	0.043195	0.058305	500.8795	0	0
Statewide Totals	2022	UBUS	Aggregate	Aggregate	Electricity	194.5299	9498.305625	0	9498.306	778.1197	18675.05	0	0	0	0	0	0	0	0	8.11E-05	0.000201	0.000282	0	0	0	0	0.000324	0.000574	0.000899	0	0	0
Statewide Totals	2022	UBUS	Aggregate	Aggregate	Natural Ga:	7721.321	899268.9507	899269	0	30885.28	0	0.557222	0	0	0.557222	0.000441	0	0	0.000441	0.008088	0.038062	0.04659	0.000461	0	0	0.000461	0.032351	0.108748	0.14156	2154.644	0	0
Statewide Totals	2023	HHDT	Aggregate	Aggregate	Gasoline	189.0791	10317.75033	10317.75	0	3783.095	0	0.09335	0	0.003757	0.097107	3.05E-05	0	6.83E-06	3.73E-05	5.69E-05	0.000387	0.000481	3.32E-05	0	7.43E-06	4.06E-05	0.000227	0.001106	0.001374	26.26915	0	0.22852
Statewide Totals	2023	HHDT	Aggregate	Aggregate	Diesel	296921.7	42074958.62	42074959	0	4821966	0	85.71613	25.2184	14.49003	125.4246	1.289313	0.012169	0	1.301482	0.411444	1.247138	2.960063	1.34761	0.012719	0	1.360329	1.645775	3.563251	6.569355	74442.26	4893.694	0
Statewide Totals	2023	HHDT	Aggregate	Aggregate	Electricity	239.3567	17275.84091	0	17275.84	4122.884	31347.02	0	0	0	0	0	0	0	0	0.000169	0.000253	0.000422	0	0	0	0	0.000675	0.000722	0.001398	0	0	0
Statewide Totals	2023	HHDT	Aggregate	Aggregate	Natural Ga:	17070.81	1143013.93	1143014	0	122957.8	0	1.435068	0.19544	0	1.630509	0.002818	0.000333	0	0.003151	0.01134	0.065885	0.080375	0.003065	0.000362	0	0.003427	0.045358	0.188243	0.237028	1646.271	167.8743	0
Statewide Totals	2023	LDA	Aggregate	Aggregate	Gasoline	13036208	510256808.6	5.1E+08	0	60476336	0	27.02733	0	17.855	44.88234	0.750647	0	0.134706	0.885354	1.124924	1.516665	3.526943	0.816389	0	0.1465	0.96289	4.499698	4.333328	9.795915	163510.7	0	4772.946
Statewide Totals	2023	LDA	Aggregate	Aggregate	Diesel	49454.89	1518369.794	1518370	0	209056.5	0	0.434496	0	0	0.434496	0.035786	0	0	0.035786	0.003347	0.004533	0.043666	0.037404	0	0	0.037404	0.01339	0.012951	0.063744	410.2041	0	0
Statewide Totals	2023	LDA	Aggregate	Aggregate	Electricity	606057.4	27655354.17	0	27655354	3028420	10677249	0	0	0	0	0	0	0	0	0.06097	0.046615	0.107584	0	0	0	0	0	0	0.243878	0.133185	0.377063	0	0
Statewide Totals	2023	LDA	Aggregate	Aggregate	Plug-in Hyb	320429.2	15076548.37	7636700	7439848	1324975	2247056	0.055958	0	0.165568	0.221525	0.011693	0	0.003085	0.014777	0.033238	0.022847	0.070863	0.012717	0	0.003355	0.016072	0.132952	0.065278	0.214302	2422.846	0	96.09198
Statewide Totals	2023	LDT1	Aggregate	Aggregate	Gasoline	1352185	45737125.5	45737126	0	5886607	0	9.724748	0	3.091171	12.81592	0.11621	0	0.021407	0.137617	0.100833	0.167296	0.405746	0.126382	0	0.023281	0.149663	0.403333	0.477987	1.030983	17558.67	0	594.8146
Statewide Totals	2023	LDT1	Aggregate	Aggregate	Diesel	750.0103	10858.45515	10858.46	0	2181.39	0	0.019033	0	0	0.019033	0.002941	0	0	0.002941	2.39E-05	4.49E-05	0.00301	0.003074	0	0	0.003074	9.58E-05	0.000128	0.003298	5.12392	0	0
Statewide Totals	2023	LDT1	Aggregate	Aggregate	Electricity	2390.36	91017.42167	0	91017.42	11216.68	35140.24	0	0	0	0	0	0	0	0	0.000201	0.000154	0.000355	0	0	0	0	0.000803	0.00044	0.001243	0	0	0
Statewide Totals	2023	LDT1	Aggregate	Aggregate	Plug-in Hyb	1000.889	51641.57594	23797.04	27844.53	4138.674	8409.879	0.000175	0	0.000517	0.000692	2.42E-05	0	6.42E-06	3.06E-05	0.000114	7.9E-05	0.000223	2.63E-05	0	6.98E-06	3.33E-05	0.000455	0.000226	0.000714	7.581456	0	0.322735
Statewide Totals	2023	LDT2	Aggregate	Aggregate	Gasoline	6085859	241447853.3	2.41E+08	0	28427214	0	22.59349	0	11.51314	34.10663	0.369274	0	0.063355	0.432628	0.532302	0.844183	1.809113	0.401615	0	0.068903	0.470519	2.129207	2.411951	5.011677	95779.07	0	2814.023
Statewide Totals	2023	LDT2	Aggregate	Aggregate	Diesel	20752.73	867791.8579	867791.9	0	99255.56	0	0.057865	0	0	0.057865	0.006085	0	0	0.006085	0.001913	0.002985	0.010983	0.00636	0	0	0.00636	0.007653	0.008529	0.022541	310.4064	0	0
Statewide Totals	2023	LDT2	Aggregate	Aggregate	Electricity	24333.42	895821.3357	0	895821.3	124904.6	345861	0	0	0	0	0	0	0	0	0.001975	0.001505	0.00348	0	0	0	0	0.0079	0.004301	0.012201	0	0	0
Statewide Totals	2023	LDT2	Aggregate	Aggregate	Plug-in Hyb	38200.55	1902625.986	912437.3	990188.7	157959.3	299066.5	0.006701	0	0.019735	0.026435	0.00114	0	0.000302	0.001441	0.004195	0.0029	0.008536	0.00124	0	0.000328	0.001568	0.016778	0.008285	0.026631	290.2837	0	13.36989
Statewide Totals	2023	LHDT1	Aggregate	Aggregate	Gasoline	539256.9	20090803.94	20090804	0	8034124	0	4.969435	0.022549	5.869257	10.86124	0.032582	0	0.003224	0.035806	0.044293	0.604595	0.684693	0.035436	0	0.003506	0.038942	0.177171	1.727413	1.943526	17385.29	71.81242	228.8792
Statewide Totals	2023	LHDT1	Aggregate	Aggregate	Diesel	388878.7	14676625.81	14676626	0	4891605	0	35.56237	0.939524	0	36.5019	0.666651	0.011475	0	0.678126	0.048535	0.441665	1.168325	0.696794	0.011994	0	0.708788	0.194139	1.2619	2.164827	9461.182	58.00267	0
Statewide Totals	2023	LHDT2	Aggregate	Aggregate	Gasoline	76955.76	2814627.274	2814627	0	1146526	0	0.580932	0.003207	0.837038	1.421178	0.003737	0	0.000334	0.004071	0.006205	0.098818	0.109094	0.004064	0	0.000364	0.004428	0.024821	0.282336	0.311585	2708.079	11.84942	32.55597
Statewide Totals	2023	LHDT2	Aggregate	Aggregate	Diesel	148912.6	5867400.094	5867400	0	1873134	0	10.06171	0.346251	0	10.40796	0.217796	0.004359	0	0.222155	0.019403	0.205996	0.447555	0.227644	0.004556	0	0.2322	0.077612	0.588561	0.898373	4538.252	35.2879	0
Statewide Totals	2023	MCY	Aggregate	Aggregate	Gasoline	691728.1	4087441.342	4087441	0	1383456	0	2.800819	0	0.23542	3.036239	0.008696	0	0.005273	0.013969	0.004506	0.018924	0.037398	0.009283	0	0.005595	0.014878	0.018023	0.054068	0.086968	876.5502	0	78.98516
Statewide Totals	2023	MDV	Aggregate	Aggregate	Gasoline	4197951	155724580.2	1.56E+08	0	19227799	0	23.28018	0	10.77067	34.05085	0.245618	0	0.046829	0.292447	0.343314	0.553296	1.189058	0.267106	0	0.050925	0.318031	1.373257	1.580847	3.272134	75671.51	0	2353.76
Statewide Totals	2023	MDV	Aggregate	Aggregate	Diesel	65867.56	2599891.912	2599892	0	309207.4	0	0.297298	0	0	0.297298	0.021789	0	0	0.021789	0.005732	0.009067	0.036588	0.022774	0	0	0.022774	0.022927	0.025906	0.071607	1231.535	0	0
Statewide Totals	2023	MDV	Aggregate	Aggregate	Electricity	26135.37	962892.3313	0	962892.3	134177.1	371755.9	0	0	0	0	0	0	0	0	0.002123	0.001617	0.00374	0	0	0	0	0.008491	0.004621	0.013113	0	0	0
Statewide Totals	2023	MDV	Aggregate	Aggregate	Plug-in Hyb	23912.36	1118719.665	556974.2	561745.4	98877.62	169663.9	0.004072	0	0.012359	0.016431	0.000873	0	0.000239	0.001112	0.002466	0.001694	0.005272	0.000949	0	0.00026	0.001209	0.009865	0.004841	0.015916	176.375	0	10.55466
Statewide Totals	2023	MH	Aggregate	Aggregate	Gasoline	89319.86	806575.8756	806575.9	0	8935.559	0	0.41528	0	0.004041	0.419322	0.001343	0	4E-06	0.001347	0.002667	0.013715	0.01773	0.001461	0	4.35E-06	0.001465	0.010669	0.039186	0.051321	1655.66	0	0.31231
Statewide Totals	2023	MH	Aggregate	Aggregate	Diesel	35755.26	338930.5392	338930.5	0	3575.526	0	1.661372	0	0	1.661372	0.043943	0	0	0.043943	0.001494	0.005744	0.051181	0.04593	0	0	0.04593	0.005978	0.016411	0.068318	390.6641	0	0
Statewide Totals	2023	MHDT	Aggregate	Aggregate	Gasoline	50417.15	2694425.773	2694426	0	1008746	0	1.576546	0.004931	0.486883	2.068361	0.003305	0	0.000585	0.00389	0.00891	0.045687	0.058487	0.003595	0	0.000636	0.004231	0.035641	0.130535	0.170407	5117.481	30.28345	52.11752
Statewide Totals	2023	MHDT	Aggregate	Aggregate	Diesel	273233.3	12042683.62	12042684	0	3255560	0	16.40557	4.136614	5.788263	26.33045	0.188069	0.009901	0	0.19797	0.039824	0.205694	0.443489	0.196573	0.010349	0	0.206922	0.159297	0.587697	0.953917	14851.41	681.0071	0
Statewide Totals	2023	MHDT	Aggregate	Aggregate	Electricity	140.7839	3172.906362	0	3172.906	1743.929	3374.733	0	0	0	0	0	0	0	0	1.05E-05	2.71E-05	3.76E-05	0	0	0	0	4.2E-05	7.74E-05	0.000119	0	0	0
Statewide Totals	2023	MHDT	Aggregate	Aggregate	Natural Ga:	2886.251	141697.1144	141697.1	0	25731.04	0	0.017926	0.021041	0	0.038968	0.000159	5.78E-05	0	0.000216	0.000469	0.002427	0.003112	0.000173	6.29E-05	0	0.000235	0.001874	0.006934	0.009043	142.7534	17.2308	0
Statewide Totals	2023	OBUS	Aggregate	Aggregate	Gasoline	13662.36	631183.225	631183.2	0	273356.5	0	0.405569	0.000977	0.12285	0.529396	0.000601	0	8.67E-05	0.000688	0.002087	0.010783	0.013559	0.000654	0	9.43E-05	0.000748	0.008349	0.03081	0.039907	1218.097	5.762044	9.634171
Statewide Totals	2023	OBUS	Aggregate	Aggregate	Diesel	9734.29	721872.4661	721872.5	0	113900.7	0	1.376111	0.133869	0.202342	1.712322	0.028259	0.000189	0	0.028448	0.002387	0.016287	0.047123	0.029537	0.000198	0	0.029735	0.009549	0.046535	0.085818	1099.621	27.8232	0
Statewide Totals	2023	OBUS	Aggregate	Aggregate	Natural Ga:	698.4803	42569.08851	42569.09	0	6216.475	0	0.008095	0.0012	0	0.009295	3.51E-05	2.62E-06	0	3.77E-05	0.000141	0.00073	0.000909	3.82E-05	2.85E-06	0	4.1E-05	0.000563	0.002086	0.002691	43.86601	0.936012	0
Statewide Totals	2023	SBUS	Aggregate	Aggregate	Gasoline	6403.731	339813.0891	339813.1	0	25614.92	0	0.254366	0.006512	0.019972	0.28085	0.000409	0	1.55E-05	0.000425	0.000749	0.005997	0.007171	0.000445	0	1.69E-05	0.000462	0.002997	0.017135	0.020594	321.6418	18.50448	1.68119
Statewide Totals	2023	SBUS	Aggregate	Aggregate	Diesel	19414.91	430279.1865	430279.2	0	281127.9	0	2.624215	0.555175	0.122982	3.302371	0.014092	0.000622	0	0.014714	0.001423	0.007538	0.023675	0.014729	0.00065	0	0.015379	0.005692	0.021537	0.042608	559.4635	48.54663	0
Statewide Totals	2023	SBUS	Aggregate	Aggregate	Electricity	11.11701	129.1349043	0	129.1349	160.9744	141.657	0	0	0	0	0	0	0	0	4.27E-07	1.14E-06	1.57E-06	0	0	0	0	1.71E-06	3.25E-06	4.96E-06	0	0	0
Statewide Totals	2023	SBUS	Aggregate	Aggregate	Natural Ga:	4168.045	105067.2347	105067.2	0	60353.29	0	0.085443	0.024015	0	0.109459	0.000456	5.7E-05	0	0.000513	0.000347	0.00188	0.002741	0.000496	6.2E-05	0	0.000558	0.00139	0.005371	0.007319	183.9127	19.17418	0
Statewide Totals	2023	UBUS	Aggregate	Aggregate	Gasoline	2809.41	241270.1909	241270.2	0	11237.64	0	0.036036	0	0.009387	0.045424	0.000271	0	5.67E-06	0.000276	0.00065	0.009254	0.01018	0.000294	0	6.16E-06	0.0003	0.002599	0.026439	0.029338	356.4943	0	0.960782
Statewide Totals	2023	UBUS	Aggregate	Aggregate	Diesel	3568.888	358275.8377	358275.8	0	14275.55	0	0.310931	0	0	0.310931	0.002673	0	0	0.002673	0.003091	0.015187	0.020951	0.002794	0	0	0.002794	0.012363	0.043391	0.058548	499.411	0	0
Statewide Totals	2023	UBUS	Aggregate	Aggregate	Electricity	194.4701	9492.540803	0	9492.541	777.8803	18663.86	0	0	0	0	0	0	0	0	8.1E-05	0.000201	0.000282	0	0	0	0	0.000324	0.000574	0.000898	0	0	0
Statewide Totals	2023	UBUS	Aggregate	Aggregate	Natural Ga:	7792.238	906946.2194	906946.2	0	31168.95	0	0.51948	0	0	0.51948	0.00047	0	0	0.00047	0.00816	0.038387	0.047017	0.000491	0	0	0.000491	0.032639	0.109678	0.142808	2149.247	0	0
Statewide Totals	2024	HHDT	Aggregate	Aggregate	Gasoline	150.1222	9389.358933	9389.359	0	3003.645	0	0.079921	0	0.002624	0.082545	2.24E-05	0	4.63E-06	2.7E-05	5.17E-05	0.000343	0.000421	2.43E-05	0	5.03E-06	2.94E-05	0.000207	0.000979	0.001215	23.21137	0	0.181106
Statewide Totals	2024	HHDT	Aggregate	Aggregate	Diesel	307158.3	42799671.17	42799671	0	4993670	0	83.68647	25.65034	15.2435	124.5803	1.29903	0.01202	0	1.31105	0.418577	1.264842	2.994469	1.357767	0.012563	0	1.37033	1.674306	3.613834	6.658471	74657.32	4955.324	0
Statewide Totals	2024	HHDT	Aggregate	Aggregate	Electricity	918.0862	104803.1987	0	104803.2	13920.56	190780.1	0	0	0	0	0	0	0	0	0.001011	0.001579	0.002591	0	0	0	0	0.004046	0.004512	0.008558	0	0	0
Statewide Totals	2024	HHDT	Aggregate	Aggregate	Natural Ga:	17975.31	1182489.028	1182489	0	129220.4	0	1.349618	0.199683	0	1.549301	0.00275	0.000361	0	0.003111	0.011731	0.068612	0.083455	0.002991	0.000393	0	0.003383	0.046925	0.196036	0.246344	1675.765	175.8829	0
Statewide Totals	2024	LDA	Aggregate	Aggregate	Gasoline	12932359	508129292.9	5.08E+08	0	59956651	0	24.16913	0	16.87067	41.0398	0.721321	0	0.129196	0.850516	1.120234	1.506025	3.476775	0.784502	0	0.140512	0.925014	4.480936	4.302928	9.708878	159617.2	0	4630.758
Statewide Totals	2024	LDA	Aggregate	Aggregate	Diesel	46051.86	1393608.456	1393608	0	193568.4	0	0.360682	0	0	0.360682	0.029534	0	0	0.029534	0.003072	0.004164	0.036771	0.03087	0	0	0.03087	0.01229	0.011897	0.055056	373.2551	0	0
Statewide Totals	2024	LDA	Aggregate	Aggregate	Electricity	698861	32845574.25	0	32845574	3479885	12681103	0	0	0	0	0	0	0	0	0.072412	0.055386	0.127798	0	0	0	0	0.289648	0.158245	0.447894	0	0	0
Statewide Totals	2024	LDA	Aggregate	Aggregate	Plug-in Hyb	352849.7	16532073.19	8174940	8357133	1459034	2524103	0.059784	0	0.182349	0.242133	0.01189	0	0.003242	0.015132	0.036447	0.025108	0.076688	0.012931	0	0.003526	0.016458	0.145788	0.071738	0.233984	2588.904	0	104.2021

Statewide Totals	2024	LDT1	Aggregate	Aggregate	Gasoline	1316922	44795753.09	44795753	0	5731283	0	8.594696	0	2.843147	11.43784	0.106275	0	0.019594	0.125869	0.098758	0.163406	0.388034	0.115581	0	0.02131	0.136891	0.395031	0.466875	0.998798	16908.48	0	566.2977
Statewide Totals	2024	LDT1	Aggregate	Aggregate	Diesel	676.7857	9607.209403	9607.209	0	1931.286	0	0.016783	0	0	0.016783	0.002591	0	0	0.002591	2.12E-05	3.97E-05	0.002651	0.002708	0	0	0.002708	8.47E-05	0.000113	0.002906	4.528503	0	0
Statewide Totals	2024	LDT1	Aggregate	Aggregate	Electricity	2849.747	117980.0806	0	117980.1	13553.72	45550.05	0	0	0	0	0	0	0	0	0.00026	0.0002	0.00046	0	0	0	0	0.00104	0.00057	0.00161	0	0	0
Statewide Totals	2024	LDT1	Aggregate	Aggregate	Plug-in Hyb	1560.429	79994.38415	35736.68	44257.7	6452.374	13367.14	0.000262	0	0.000806	0.001068	3.55E-05	0	9.81E-06	4.53E-05	0.000176	0.000123	0.000344	3.86E-05	0	1.07E-05	4.92E-05	0.000705	0.000351	0.001105	11.36378	0	0.492054
Statewide Totals	2024	LDT2	Aggregate	Aggregate	Gasoline	6196168	247080529.8	2.47E+08	0	28942872	0	20.49462	0	10.88476	31.37938	0.36405	0	0.062756	0.426806	0.54472	0.861421	1.832947	0.395937	0	0.068253	0.46419	2.178879	2.461204	5.104272	95585.04	0	2789.632
Statewide Totals	2024	LDT2	Aggregate	Aggregate	Diesel	21611.88	901223.1187	901223.1	0	103163	0	0.052806	0	0	0.052806	0.005379	0	0	0.005379	0.001987	0.003104	0.01047	0.005623	0	0	0.005623	0.007947	0.008868	0.022438	315.937	0	0
Statewide Totals	2024	LDT2	Aggregate	Aggregate	Electricity	35461.74	1293238.061	0	1293238	181272.4	499296.6	0	0	0	0	0	0	0	0	0.002851	0.002175	0.005026	0	0	0	0	0.011404	0.006213	0.017617	0	0	0
Statewide Totals	2024	LDT2	Aggregate	Aggregate	Plug-in Hyb	47478.44	2337538.051	1091736	1245802	196323.3	376269.5	0.007999	0	0.024531	0.03253	0.001294	0	0.000357	0.001651	0.005153	0.003572	0.010376	0.001408	0	0.000388	0.001796	0.020614	0.010205	0.032614	346.6135	0	16.3035
Statewide Totals	2024	LHDT1	Aggregate	Aggregate	Gasoline	533444	20083806.48	20083806	0	7947521	0	4.454073	0.021734	5.659367	10.13517	0.031559	0	0.002968	0.034528	0.044277	0.604384	0.683189	0.034324	0	0.003228	0.037552	0.177109	1.726811	1.941472	16986.23	70.45167	226.1084
Statewide Totals	2024	LHDT1	Aggregate	Aggregate	Diesel	387023.5	14655800.96	14655801	0	4868269	0	32.3735	0.90263	0	33.27614	0.626548	0.011363	0	0.63791	0.048466	0.441038	1.127415	0.654877	0.011876	0	0.666754	0.193863	1.26011	2.120727	9378.892	57.19366	0
Statewide Totals	2024	LHDT1	Aggregate	Aggregate	Electricity	1635.665	123189.2944	0	123189.3	22849.2	74239.79	0	0	0	0	0	0	0	0	0.000272	0.001854	0.002125	0	0	0	0	0.001086	0.005296	0.006382	0	0	0
Statewide Totals	2024	LHDT2	Aggregate	Aggregate	Gasoline	76015.03	2788467.09	2788467	0	1132511	0	0.517988	0.003086	0.807372	1.328446	0.003598	0	0.000305	0.003903	0.006148	0.097899	0.10795	0.003914	0	0.000331	0.004245	0.02459	0.279712	0.308547	2632.668	11.62224	31.93345
Statewide Totals	2024	LHDT2	Aggregate	Aggregate	Diesel	151207.2	5947359.815	5947360	0	1901996	0	9.335175	0.337941	0	9.673116	0.210004	0.004428	0	0.214432	0.019668	0.208804	0.442903	0.219499	0.004628	0	0.224128	0.07867	0.596582	0.899379	4550.864	35.48906	0
Statewide Totals	2024	LHDT2	Aggregate	Aggregate	Electricity	423.3612	30210.37351	0	30210.37	5604.02	18069.62	0	0	0	0	0	0	0	0	6.66E-05	0.00053	0.000597	0	0	0	0	0.000266	0.001515	0.001782	0	0	0
Statewide Totals	2024	MCY	Aggregate	Aggregate	Gasoline	694600.9	4105358.564	4105359	0	1389202	0	2.740083	0	0.226535	2.966617	0.008715	0	0.005035	0.01375	0.004525	0.019007	0.037282	0.00931	0	0.005351	0.014661	0.018102	0.054305	0.087067	877.1475	0	77.5431
Statewide Totals	2024	MDV	Aggregate	Aggregate	Gasoline	4197181	156615967.6	1.57E+08	0	19226777	0	20.39704	0	9.883717	30.28076	0.234636	0	0.044483	0.279119	0.345279	0.555102	1.179501	0.25518	0	0.048377	0.303557	1.381117	1.586007	3.270681	74374.91	0	2295.878
Statewide Totals	2024	MDV	Aggregate	Aggregate	Diesel	65919.21	2563762.706	2563763	0	307396.5	0	0.268296	0	0	0.268296	0.020486	0	0	0.020486	0.005652	0.009006	0.035144	0.021412	0	0	0.021412	0.022609	0.025731	0.069752	1199.138	0	0
Statewide Totals	2024	MDV	Aggregate	Aggregate	Electricity	38622.03	1409204.243	0	1409204	197450.8	544069.1	0	0	0	0	0	0	0	0	0.003107	0.002369	0.005476	0	0	0	0	0.012427	0.006769	0.019196	0	0	0
Statewide Totals	2024	MDV	Aggregate	Aggregate	Plug-in Hyb	29857.22	1395121.492	669668.5	725453	123459.6	219108.4	0.00489	0	0.015431	0.020321	0.000958	0	0.000272	0.00123	0.003076	0.002122	0.006428	0.001042	0	0.000296	0.001338	0.012303	0.006063	0.019704	211.8657	0	12.82572
Statewide Totals	2024	MH	Aggregate	Aggregate	Gasoline	84519.02	770352.3129	770352.3	0	8455.283	0	0.358835	0	0.003908	0.362744	0.001218	0	3.59E-06	0.001222	0.002548	0.013095	0.016865	0.001325	0	3.9E-06	0.001329	0.01019	0.037415	0.048934	1580.849	0	0.293749
Statewide Totals	2024	MH	Aggregate	Aggregate	Diesel	35749.86	337480.3941	337480.4	0	3574.986	0	1.607655	0	0	1.607655	0.04211	0	0	0.04211	0.001488	0.005718	0.049316	0.044014	0	0	0.044014	0.005952	0.016336	0.066302	388.931	0	0
Statewide Totals	2024	MHDT	Aggregate	Aggregate	Gasoline	49136.2	2647286.254	2647286	0	983117.1	0	1.329173	0.004816	0.463373	1.797362	0.00319	0	0.000541	0.003731	0.008754	0.044872	0.057357	0.00347	0	0.000588	0.004058	0.035018	0.128205	0.167281	4976.102	29.30065	50.03658
Statewide Totals	2024	MHDT	Aggregate	Aggregate	Diesel	277729.4	12176258.56	12176259	0	3314941	0	15.23975	4.058646	5.955458	25.25385	0.168451	0.008391	0	0.176842	0.040266	0.207909	0.425017	0.176068	0.00877	0	0.184838	0.161064	0.594026	0.939929	14960.3	687.0363	0
Statewide Totals	2024	MHDT	Aggregate	Aggregate	Electricity	845.6621	47203.33616	0	47203.34	10926.66	50979.04	0	0	0	0	0	0	0	0	0.000156	0.000403	0.000559	0	0	0	0	0.000624	0.001151	0.001775	0	0	0
Statewide Totals	2024	MHDT	Aggregate	Aggregate	Natural Ga:	3069.098	148297.3761	148297.4	0	27145.41	0	0.017959	0.022405	0	0.040364	0.00017	6.31E-05	0	0.000233	0.00049	0.002539	0.003263	0.000185	6.87E-05	0	0.000253	0.001962	0.007256	0.009471	148.62	18.41299	0
Statewide Totals	2024	OBUS	Aggregate	Aggregate	Gasoline	13168.72	597323.1986	597323.2	0	263479.8	0	0.358595	0.000942	0.118731	0.478268	0.000583	0	8.33E-05	0.000666	0.001975	0.010211	0.012853	0.000634	0	9.06E-05	0.000725	0.007901	0.029175	0.037801	1142.871	5.526333	9.224805
Statewide Totals	2024	OBUS	Aggregate	Aggregate	Diesel	9912.905	724559.1469	724559.1	0	116162.5	0	1.375859	0.136154	0.207084	1.719097	0.028235	0.000183	0	0.028418	0.002396	0.016357	0.047171	0.029512	0.000191	0	0.029703	0.009584	0.046735	0.086022	1099.178	28.24725	0
Statewide Totals	2024	OBUS	Aggregate	Aggregate	Electricity	25.1136	2191.950299	0	2191.95	502.4729	2370.847	0	0	0	0	0	0	0	0	7.25E-06	1.87E-05	2.59E-05	0	0	0	0	2.9E-05	5.34E-05	8.24E-05	0	0	0
Statewide Totals	2024	OBUS	Aggregate	Aggregate	Natural Ga:	719.5198	43318.57774	43318.58	0	6403.726	0	0.007962	0.001233	0	0.009195	3.76E-05	2.77E-06	0	4.04E-05	0.000143	0.000744	0.000928	4.09E-05	3.01E-06	0	4.39E-05	0.000573	0.002126	0.002743	44.50784	0.963965	0
Statewide Totals	2024	SBUS	Aggregate	Aggregate	Gasoline	6487.546	345599.5183	345599.5	0	25950.18	0	0.246014	0.006603	0.020649	0.273267	0.000403	0	1.57E-05	0.000419	0.000762	0.0061	0.007281	0.000439	0	1.7E-05	0.000456	0.003048	0.017428	0.020932	325.887	18.68163	1.684178
Statewide Totals	2024	SBUS	Aggregate	Aggregate	Diesel	19340.78	426182.5409	426182.5	0	280054.5	0	2.456633	0.539742	0.128802	3.125178	0.013069	0.000571	0	0.01364	0.001409	0.007465	0.022514	0.01366	0.000596	0	0.014256	0.005637	0.021329	0.041222	551.5071	48.18731	0
Statewide Totals	2024	SBUS	Aggregate	Aggregate	Electricity	70.00474	2045.092783	0	2045.093	869.3358	2237.458	0	0	0	0	0	0	0	0	5.99E-06	1.8E-05	2.4E-05	0	0	0	0	2.4E-05	5.15E-05	7.54E-05	0	0	0
Statewide Totals	2024	SBUS	Aggregate	Aggregate	Natural Ga:	4326.797	107950.3757	107950.4	0	62652.02	0	0.084916	0.024883	0	0.109799	0.000469	6.03E-05	0	0.000529	0.000357	0.001931	0.002818	0.00051	6.56E-05	0	0.000576	0.001428	0.005519	0.007522	187.6298	19.92242	0
Statewide Totals	2024	UBUS	Aggregate	Aggregate	Gasoline	2828.539	242804.0638	242804.1	0	11314.15	0	0.033579	0	0.008982	0.042561	0.000311	0	6.34E-06	0.000317	0.000654	0.009312	0.010283	0.000338	0	6.9E-06	0.000345	0.002615	0.026607	0.029567	354.6929	0	0.963002
Statewide Totals	2024	UBUS	Aggregate	Aggregate	Diesel	3498.152	350115.7745	350115.8	0	13992.61	0	0.145421	0	0	0.145421	0.002546	0	0	0.002546	0.003016	0.014837	0.0204	0.002661	0	0	0.002661	0.012066	0.042392	0.05712	472.6904	0	0
Statewide Totals	2024	UBUS	Aggregate	Aggregate	Electricity	313.7353	24321.75384	0	24321.75	1254.941	46816.64	0	0	0	0	0	0	0	0	0.00022	0.000516	0.000735	0	0	0	0	0.000878	0.001473	0.002351	0	0	0
Statewide Totals	2024	UBUS	Aggregate	Aggregate	Natural Ga:	7829.208	909762.2065	909762.2	0	31316.83	0	0.481057	0	0	0.481057	0.000464	0	0	0.000464	0.008181	0.038509	0.047154	0.000485	0	0	0.000485	0.032725	0.110026	0.143236	2132.111	0	0
Statewide Totals	2025	HHDT	Aggregate	Aggregate	Gasoline	126.6604	8734.328026	8734.328	0	2534.221	0	0.066097	0	0.001825	0.067922	1.81E-05	0	3.45E-06	2.15E-05	4.81E-05	0.000312	0.000382	1.97E-05	0	3.75E-06	2.34E-05	0.000193	0.000892	0.001108	21.0604	0	0.153339
Statewide Totals	2025	HHDT	Aggregate	Aggregate	Diesel	315961.6	43487031.15	43487031	0	5139397	0	81.88764	25.82029	15.84766	123.5556	1.301437	0.011872	0	1.31331	0.425361	1.285225	3.023895	1.360283	0.012409	0	1.372692	1.701442	3.672071	6.746204	74649.07	4989.487	0
Statewide Totals	2025	HHDT	Aggregate	Aggregate	Natural Ga:	18819.84	1219353.786	1219354	0	135122.5	0	1.269296	0.20322	0	1.472516	0.00269	0.000389	0	0.003079	0.012097	0.07117	0.086346	0.002925	0.000423	0	0.003348	0.048388	0.203342	0.255079	1706.423	183.2992	0
Statewide Totals	2025	LDA	Aggregate	Aggregate	Gasoline	12837663	503812695	5.04E+08	0	59480990	0	21.78249	0	15.97934	37.76183	0.694046	0	0.124743	0.818789	1.110718	1.492202	3.421709	0.754838	0	0.135669	0.890508	4.442871	4.263434	9.596813	154977.9	0	4491.924
Statewide Totals	2025	LDA	Aggregate	Aggregate	Diesel	42627.75	1266876.471	1266876	0	178260.3	0	0.296086	0	0	0.296086	0.024901	0	0	0.024901	0.002793	0.003794	0.031488	0.026027	0	0	0.026027	0.011172	0.010841	0.04804	336.1906	0	0
Statewide Totals	2025	LDA	Aggregate	Aggregate	Electricity	792351.3	38110990.41	0	38110990	3931211	14713988	0	0	0	0	0	0	0	0	0.08402	0.064291	0.148312	0	0	0	0	0.336081	0.183689	0.519771	0	0	0
Statewide Totals	2025	LDA	Aggregate	Aggregate	Plug-in Hyb	383663.1	17814254.34	8595793	9218461	1586447	2784250	0.062849	0	0.198304	0.261153	0.011977	0	0.003386	0.015363	0.039274	0.02714	0.081777	0.013026	0	0.003683	0.016709	0.157095	0.077542	0.251345	2721.071	0	111.4725
Statewide Totals	2025	LDT1	Aggregate	Aggregate	Gasoline	1284222	43707488.99	43707489	0	5587632	0	7.577018	0	2.616372	10.19339	0.097434	0	0.018045	0.115479	0.096359	0.159348	0.371186	0.105968	0	0.019626	0.125594	0.385434	0.455281	0.966309	16205.92	0	539.5178
Statewide Totals	2025	LDT1	Aggregate	Aggregate	Diesel	610.9429	8457.802623	8457.803	0	1710.135	0	0.014708	0	0	0.014708	0.002271	0	0	0.002271	1.86E-05	3.49E-05	0.002325	0.002374	0	0	0.002374	7.46E-05	9.97E-05	0.002548	3.984422	0	0
Statewide Totals	2025	LDT1	Aggregate	Aggregate	Electricity	3472.828	154253.7054	0	154253.7	16713.3	59554.66	0	0	0	0	0	0	0	0	0.00034	0.000261	0.000601	0	0	0	0	0.00136	0.000744	0.002105	0	0	0
Statewide Totals	2025	LDT1	Aggregate	Aggregate	Plug-in Hyb	2255.843	114380.1735	49613.65	64766.53	9327.91	19561.42	0.000364	0	0.001165	0.001528	4.86E-05	0	1.4E-05	6.27E-05	0.000252	0.000176	0.000491	5.29E-05	0	1.52E-05	6.82E-05	0.001009	0.000503	0.00158	15.77097	0	0.695256
Statewide Totals	2025	LDT2	Aggregate	Aggregate	Gasoline	6307224	251275667.7	2.51E+08	0	29454216	0	18.68909	0	10.36782	29.05691	0.358823	0	0.062371	0.421194	0.553968	0.876119	1.851281	0.390253	0	0.067834	0.458087	2.215874	2.503196	5.177156	94786.08	0	2763.38
Statewide Totals	2025	LDT2	Aggregate	Aggregate	Diesel	22395.21	926401.2108	926401.2	0	106650.1	0	0.048693	0	0	0.048693	0.005102	0	0	0.005102	0.002042	0.003201	0.010345	0.005333	0	0	0.005333	0.008169	0.009146	0.022648	318.0267	0	0
Statewide Totals	2025	LDT2	Aggregate	Aggregate	Electricity	47977.69	1724693.602	0	1724694	244230.9	665874.1	0	0	0	0	0	0	0	0	0.003802	0.002902	0.006704	0	0	0	0	0.015209	0.008291	0.0235	0	0	0
Statewide Totals	2025	LDT2	Aggregate	Aggregate	Plug-in Hyb	57212.96	2772425.406	1261716	1510709	236575.6	456279.2	0.009242	0	0.029564	0.038806	0.001441	0	0.000414	0.001856	0.006112	0.00425	0.012218	0.001568	0	0.000451	0.002019	0.024449	0.012143	0.03861	400.3858	0	19.2592
Statewide Totals	2025	LHDT1	Aggregate	Aggregate	Gasoline	527137.6	19931916.9	19931917	0	7853565	0	3.946329	0.020924	5.436326	9.403579	0.030366	0	0.002716	0.033082	0.043942	0.599813	0.676838	0.033026	0	0.002954	0.03598	0.175769	1.713752	1.925501	16512.57	69.05067	223.0748
Statewide Totals	2025	LHDT1	Aggregate	Aggregate	Diesel	384627.7	14526241.97	14526242	0	4838133	0	29.22327	0.865577	0	30.08884	0.584378	0.01125	0	0.595628	0.048037	0.43714	1.080805	0.610801	0.011759	0	0.62256	0.192149	1.24897	2.063679	9236.446	56.32389	0
Statewide Totals	2025	LHDT1	Aggregate	Aggregate	Electricity	4531.776	316257.0674	0	316257.1	63376.29	190691.6	0	0	0	0	0	0	0	0	0.000697	0.004759	0.005456	0	0	0	0	0.002789	0.013596	0.016385	0	0	0
Statewide Totals	2025	LHDT2	Aggregate	Aggregate	Gasoline	74953.44	2743021.41	2743021	0	1116695	0	0.459186	0.002963	0.775797	1.237946	0.003462	0	0.000279	0.003741	0.006047	0.096304	0.106092	0.003765	0	0.000304	0.004069	0.024189	0.275153	0.303412	2545.185	11.38034	31.27185
Statewide Totals	2025	LHDT2	Aggregate	Aggregate	Diesel	153118.8	5976481.729	5976482	0	1926042	0	8.605494	0.329133	0	8.934627	0.201233	0.004489	0	0.205722	0.019764	0.209826	0.435312	0.210332	0.004692	0	0.215024	0.079055	0.599503	0.893582	4529.551	35.60768	0
Statewide Totals	2025	LHDT2	Aggregate	Aggregate	Electricity	1164.199	77205.83207	0	77205.83	15438.42	46194.57	0	0	0	0	0	0	0	0	0.00017	0.001355	0.001526	0	0	0	0	0.000681	0.003872	0.004553	0	0	0
Statewide Totals	2025	MCY	Aggregate	Aggregate	Gasoline	697353.7	4101196.767	4101197	0	1394707	0	2.67134	0	0.217601	2.888941	0.008784	0	0.00502	0.013804	0.004521	0.018987	0.037312	0.00939	0	0.005339	0.014728	0.018083	0.05425	0.087061	873.7689	0	76.18971
Statewide Totals	2025	MDV	Aggregate	Aggregate	Gasoline	4198402	156680570.6	1.57E+08	0	19230832	0	19.90432	0	9.083029	26.98735	0.225681	0	0.042813	0.268494	0.345422	0.555317	1.169233	0.245447	0	0.046563	0.29201	1.381687	1.586621	3.260318	72663.49	0	2239.024
Statewide Totals	2025	MDV	Aggregate	Aggregate	Diesel	65690.95	2509511.049	2509511	0	304580.2	0	0.238782	0	0	0.238782	0.018829	0	0	0.018829	0.005533	0.008883	0.033245	0.019681	0	0	0.019681	0.02213	0.02538	0.067191	1157.314	0	0
Statewide Totals	2025	MDV	Aggregate	Aggregate	Electricity	51965.81	1867218.688	0	1867219	264486.3	720900.5	0	0	0	0	0	0	0	0	0.004117	0.003142	0.007258	0	0	0	0	0.016466	0.008976	0.025442	0	0	0
Statewide Totals	2025	MDV	Aggregate	Aggregate	Plug-in Hyb	36338.1	1684033.635	781746.1	902287.6	150258	272517.7	0.00571	0	0.01878	0.02449	0.001044	0	0.000309	0.001353	0.003713	0.002573	0.007638	0.001135	0	0.000336	0.001471	0.014851	0.00735	0.023672	247.367	0	15.2072
Statewide Totals	2025	MH	Aggregate	Aggregate	Gasoline	80354.92	735820.0839	735820.1	0	8038.706	0	0.312837	0	0.003792	0.316629	0.001117	0	3.28E-06	0.001121	0.002433	0.012507	0.016061	0.001215	0	3.57E-06	0.001219	0.009733	0.035735	0.046687	1509.166	0	0.277762
Statewide Totals	2025	MH	Aggregate	Aggregate	Diesel	35686.68	334282.7873	334282.8	0	3568.668	0	1.547715	0	0	1.547715	0.040023	0	0	0.040023	0.001474	0.005663	0.047159	0.041832	0	0	0.041832	0.005896	0.016179	0.063907	385.2881	0	0
Statewide Totals	2025	MHDT	Aggregate	Aggregate	Gasoline	47979.48	2589381.432	2589381	0	959973.4	0	1.120606	0.004621	0.440357	1.565584	0.003094	0	0.000507	0.003601	0.008563	0.043893	0.056057	0.003365	0	0.000551	0.003916	0.034252	0.125407	0.163575	4815.788	28.39855	48.16081
Statewide Totals	2025	MHDT	Aggregate	Aggregate	Diesel	283391.9	12272299.68	12272300	0	3387538	0	14.00337	3.936493	6.094554	24.03442	0.149214	0.007058	0	0.156272	0.040584	0.209542	0.406397	0.155961	0.007377	0	0.163338	0.162335	0.59869	0.924363	14993.93	694.6095	0
Statewide Totals	2025	MHDT	Aggregate	Aggregate	Electricity	2457.805	136285.2157	0	136285.2	31554.2	146451.6	0	0	0	0	0	0	0	0	0.000451	0.001163	0.001614	0	0	0	0	0.001803	0.003322	0.005125	0	0	0
Statewide Totals	2025	MHDT	Aggregate	Aggregate	Natural Ga:	3268.742	154575.5549	154575.6	0	28802.85	0	0.01788	0.023847	0	0.041727	0.000182	6.88E-05	0	0.000251	0.000511	0.002647	0.003409	0.000198	7.49E-05	0	0.000272	0.002045	0.007564	0.009881	154.2185	19.66339	0
Statewide Totals	2025	OBUS	Aggregate	Aggregate	Gasoline	12688.14	562871.6385	562871.6	0	253864.3	0	0.317506	0.000896	0.113957	0.43236	0.000563	0	8.03E-05	0.000643	0.001861	0.009621	0.012125	0.000612	0	8.73E-05	0.000699	0.007446	0.027488	0.035633	1066.555	5.297397	8.832418
Statewide Totals	2025	OBUS	Aggregate	Aggregate	Diesel	10199.29	727468.079	727468.1	0	120075.9	0	1.335519	0.136205	0.213092	1.684816	0.02738	0.000176	0	0.027557	0.002406	0.016433	0.046396	0.028618	0.000184	0	0.028803	0.009623	0.046952	0.085378	1092.699	29.0576	0
Statewide Totals	2025	OBUS	Aggregate	Aggregate	Electricity	61.64718	5272.884086	0	5272.884	1233.437	5703.46	0	0	0	0	0	0	0	0	1.74E-05	4.5E-05	6.24E-05	0	0	0	0	6.97E-05	0.000128	0.000198	0	0	0
Statewide Totals	2025	OBUS	Aggregate	Aggregate	Natural Ga:	755.5383	44530.78426	44530.78	0	6724.291	0	0.007575	0.001289	0	0.008864	4.18E-05	3.05E-06	0	4.48E-05	0.000147	0.000765	0.000957	4.55E-05	3.31E-06	0	4.88E-05	0.000589	0.002185	0.002823	45.10853	1.009095	0
Statewide Totals	2025	SBUS	Aggregate	Aggregate	Gasoline	6558.351	348706.6724	348706.7	0	26233.4	0	0.232549	0.006589	0.021207	0.260344	0.000392	0	1.57E-05	0.000408	0.000769	0.006156	0.007332	0.000427	0	1.71E-05	0.000444	0.003075	0.017587	0.021106	327.5916	18.8198	1.68328
Statewide Totals	2025	SBUS	Aggregate	Aggregate	Diesel	19238.84	421680.3185	421680.3	0	278578.5	0	2.289389	0.521008	0.13364	2.944038	0.012127	0.000523	0	0.01265	0.001394	0.007385	0.02143	0.012676	0.000546	0	0.013222	0.005578	0.0211	0.0399	543.1055	47.73781	0
Statewide Totals	2025	SBUS	Aggregate	Aggregate	Electricity	151.4873	4630.488753	0	4630.489	1878.889	5066.355	0	0	0	0	0	0	0	0	1.36E-05	4.08E-05	5.44E-05	0	0	0	0	5.45E-05	0.000117	0.000171	0	0	0

Statewide Totals	2025	SBUS	Aggregate	Aggregate	Natural Ga:	4484.09	110694.4559	110694.5	0	64929.62	0	0.084326	0.025743	0	0.11007	0.000481	6.35E-05	0	0.000544	0.000366	0.001981	0.002891	0.000523	6.91E-05	0	0.000592	0.001464	0.005659	0.007715	191.1301	20.66377	0
Statewide Totals	2025	UBUS	Aggregate	Aggregate	Gasoline	2845.621	244141.1428	244141.1	0	11382.49	0	0.033457	0	0.008779	0.042236	0.000332	0	6.72E-06	0.000339	0.000657	0.009363	0.010359	0.000361	0	7.3E-06	0.000368	0.002629	0.026751	0.029749	353.3199	0	0.965426
Statewide Totals	2025	UBUS	Aggregate	Aggregate	Diesel	3484.198	348958.0094	348958	0	13936.79	0	0.144571	0	0	0.144571	0.002539	0	0	0.002539	0.003001	0.014786	0.020326	0.002654	0	0	0.002654	0.012002	0.042247	0.056903	471.1033	0	0
Statewide Totals	2025	UBUS	Aggregate	Aggregate	Electricity	395.5557	35355.34247	0	35355.34	1582.223	68611.1	0	0	0	0	0	0	0	0	0.000317	0.00075	0.001067	0	0	0	0	0.001268	0.002142	0.00341	0	0	0
Statewide Totals	2025	UBUS	Aggregate	Aggregate	Natural Ga:	7848.692	909542.8261	909542.8	0	31394.77	0	0.453127	0	0	0.453127	0.000472	0	0	0.000472	0.008187	0.038501	0.047159	0.000493	0	0	0.000493	0.032746	0.110002	0.143242	2110.718	0	0
Statewide Totals	2026	HHDT	Aggregate	Aggregate	Gasoline	102.1698	8117.226111	8117.226	0	2044.214	0	0.046717	0	0.000517	0.047235	1.35E-05	0	2.16E-06	1.56E-05	4.47E-05	0.000285	0.000346	1.47E-05	0	2.35E-06	1.7E-05	0.000179	0.000815	0.001011	18.99201	0	0.122818
Statewide Totals	2026	HHDT	Aggregate	Aggregate	Diesel	323622.8	44147347.53	44147348	0	5266387	0	80.36823	25.85841	16.34897	122.5756	1.313826	0.011707	0	1.325532	0.431887	1.311603	3.069023	1.373231	0.012236	0	1.385467	1.727548	3.747438	6.860453	74562.4	5007.23	0
Statewide Totals	2026	HHDT	Aggregate	Aggregate	Electricity	3519.608	425340.4079	0	425340.4	52038.79	774421.8	0	0	0	0	0	0	0	0	0.004094	0.006721	0.010815	0	0	0	0	0.016377	0.019202	0.035579	0	0	0
Statewide Totals	2026	HHDT	Aggregate	Aggregate	Natural Ga:	19576.3	1252668.279	1252668	0	140280.1	0	1.189501	0.205494	0	1.394995	0.002634	0.000415	0	0.003049	0.012427	0.073549	0.089025	0.002865	0.000451	0	0.003316	0.04971	0.210139	0.263164	1732.772	189.6642	0
Statewide Totals	2026	LDA	Aggregate	Aggregate	Gasoline	12771098	500207112.7	5E+08	0	59152857	0	19.86115	0	15.21853	35.07968	0.664233	0	0.120636	0.784869	1.102769	1.478121	3.365759	0.722414	0	0.131202	0.853617	4.411075	4.223203	9.487894	150638.1	0	4367.68
Statewide Totals	2026	LDA	Aggregate	Aggregate	Diesel	38753.58	1143624.674	1143625	0	162077.9	0	0.235621	0	0	0.235621	0.01992	0	0	0.01992	0.002521	0.003424	0.025865	0.02082	0	0	0.02082	0.010085	0.009782	0.040687	299.9251	0	0
Statewide Totals	2026	LDA	Aggregate	Aggregate	Electricity	870559.2	41201804.22	0	41201804	4299875	15907297	0	0	0	0	0	0	0	0	0.090834	0.069543	0.160377	0	0	0	0	0.363338	0.198694	0.562032	0	0	0
Statewide Totals	2026	LDA	Aggregate	Aggregate	Plug-in Hyb	409333.9	18705424.72	8848460	9856964	1692595	2977097	0.064631	0	0.211605	0.276236	0.011776	0	0.003464	0.015241	0.041238	0.028556	0.085035	0.012807	0	0.003768	0.016575	0.164954	0.081588	0.263117	2798.271	0	117.262
Statewide Totals	2026	LDT1	Aggregate	Aggregate	Gasoline	1253937	42656830.63	42656831	0	5456153	0	6.688779	0	2.412918	9.101697	0.08944	0	0.01669	0.106129	0.094042	0.155136	0.355307	0.097274	0	0.018152	0.115425	0.376169	0.443245	0.934839	15531.96	0	514.7663
Statewide Totals	2026	LDT1	Aggregate	Aggregate	Diesel	518.9082	7018.170847	7018.171	0	1429.139	0	0.012025	0	0	0.012025	0.001857	0	0	0.001857	1.55E-05	2.88E-05	0.001901	0.001941	0	0	0.001941	6.19E-05	8.24E-05	0.002085	3.291924	0	0
Statewide Totals	2026	LDT1	Aggregate	Aggregate	Electricity	4237.206	192705.142	0	192705.1	20575.31	74400.09	0	0	0	0	0	0	0	0	0.000425	0.000325	0.00075	0	0	0	0	0.001699	0.000929	0.002629	0	0	0
Statewide Totals	2026	LDT1	Aggregate	Aggregate	Plug-in Hyb	2993.044	149253.9306	63631.08	85622.86	12376.24	25860.65	0.000466	0	0.001546	0.002011	5.98E-05	0	1.79E-05	7.76E-05	0.000329	0.00023	0.000637	6.5E-05	0	1.94E-05	8.45E-05	0.001316	0.000658	0.002058	20.20768	0	0.907971
Statewide Totals	2026	LDT2	Aggregate	Aggregate	Gasoline	6421310	254927112.9	2.55E+08	0	29974810	0	17.16018	0	9.951558	27.11174	0.350244	0	0.061635	0.411879	0.562018	0.88773	1.861627	0.380922	0	0.067034	0.447956	2.248074	2.536371	5.232401	93878.62	0	2740.63
Statewide Totals	2026	LDT2	Aggregate	Aggregate	Diesel	23123.46	946334.4932	946334.5	0	109779.1	0	0.046022	0	0	0.046022	0.005007	0	0	0.005007	0.002086	0.003273	0.010367	0.005234	0	0	0.005234	0.008345	0.009351	0.02293	318.3892	0	0
Statewide Totals	2026	LDT2	Aggregate	Aggregate	Electricity	60082.44	2125562.725	0	2125563	304367.6	820642.6	0	0	0	0	0	0	0	0	0.004686	0.003579	0.008265	0	0	0	0	0.018744	0.010225	0.028969	0	0	0
Statewide Totals	2026	LDT2	Aggregate	Aggregate	Plug-in Hyb	66397.59	3154315.371	1409311	1745004	274554	527043.3	0.010312	0	0.034315	0.044627	0.001538	0	0.000461	0.001999	0.006954	0.004845	0.013798	0.001673	0	0.000501	0.002174	0.027816	0.013843	0.043833	446.756	0	22.00969
Statewide Totals	2026	LHDT1	Aggregate	Aggregate	Gasoline	521613	19776450.43	19776450	0	7771256	0	3.511954	0.020172	5.221635	8.753762	0.029451	0	0.002515	0.031966	0.0436	0.595135	0.6707	0.032031	0	0.002735	0.034766	0.174398	1.700385	1.909549	16080.6	67.78633	220.2515
Statewide Totals	2026	LHDT1	Aggregate	Aggregate	Diesel	381362.9	14367442.99	14367443	0	4797065	0	26.2514	0.827497	0	27.07889	0.544706	0.011125	0	0.555831	0.047512	0.432361	1.035704	0.569335	0.011628	0	0.580963	0.190049	1.235317	2.006329	9090.356	55.34332	0
Statewide Totals	2026	LHDT1	Aggregate	Aggregate	Electricity	8665.64	577819.8459	0	577819.8	121229.6	348649.3	0	0	0	0	0	0	0	0	0.001274	0.008694	0.009968	0	0	0	0	0.005095	0.024841	0.029936	0	0	0
Statewide Totals	2026	LHDT2	Aggregate	Aggregate	Gasoline	73861.92	2697682.938	2697683	0	1100432	0	0.402293	0.002843	0.744675	1.149811	0.003329	0	0.000254	0.003583	0.005947	0.094712	0.104242	0.003621	0	0.000276	0.003897	0.023789	0.270605	0.298292	2463.037	11.13821	30.60697
Statewide Totals	2026	LHDT2	Aggregate	Aggregate	Diesel	154585.8	5988412.496	5988412	0	1944495	0	7.923938	0.319705	0	8.243642	0.192678	0.004539	0	0.197216	0.019803	0.210245	0.427265	0.20139	0.004744	0	0.206134	0.079213	0.6007	0.886046	4503.23	35.63004	0
Statewide Totals	2026	LHDT2	Aggregate	Aggregate	Electricity	2220.937	140970.4011	0	140970.4	29461.59	84383.84	0	0	0	0	0	0	0	0	0.000311	0.002475	0.002785	0	0	0	0	0.001243	0.00707	0.008314	0	0	0
Statewide Totals	2026	MCY	Aggregate	Aggregate	Gasoline	700014.8	4099379.526	4099380	0	1400030	0	2.609878	0	0.208997	2.818874	0.008842	0	0.005001	0.013843	0.004519	0.018979	0.037341	0.009456	0	0.005323	0.014779	0.018075	0.054226	0.08708	870.9426	0	74.89659
Statewide Totals	2026	MDV	Aggregate	Aggregate	Gasoline	4204929	156640983.8	1.57E+08	0	19259444	0	15.82118	0	8.393793	24.21497	0.216555	0	0.041355	0.257909	0.345334	0.554358	1.157602	0.235522	0	0.044977	0.280499	1.381338	1.583881	3.245718	70968.41	0	2187.485
Statewide Totals	2026	MDV	Aggregate	Aggregate	Diesel	65283.43	2448103.62	2448104	0	301015.7	0	0.211938	0	0	0.211938	0.017263	0	0	0.017263	0.005397	0.008706	0.031365	0.018043	0	0	0.018043	0.021589	0.024873	0.064505	1112.453	0	0
Statewide Totals	2026	MDV	Aggregate	Aggregate	Electricity	64706.91	2287087.487	0	2287087	327700.7	883004.5	0	0	0	0	0	0	0	0	0.005042	0.003851	0.008893	0	0	0	0	0.020169	0.011003	0.031172	0	0	0
Statewide Totals	2026	MDV	Aggregate	Aggregate	Plug-in Hyb	42277.36	1931382.074	875768.6	1055613	174816.9	318826.7	0.006393	0	0.021851	0.028243	0.001093	0	0.000337	0.00143	0.004258	0.002958	0.008646	0.001189	0	0.000366	0.001555	0.017032	0.008452	0.027039	276.9496	0	17.3453
Statewide Totals	2026	MH	Aggregate	Aggregate	Gasoline	76490.35	705607.6077	705607.6	0	7652.094	0	0.272111	0	0.003689	0.2758	0.00103	0	3.01E-06	0.001033	0.002333	0.011993	0.015359	0.00112	0	3.27E-06	0.001123	0.009334	0.034266	0.044723	1446.518	0	0.263053
Statewide Totals	2026	MH	Aggregate	Aggregate	Diesel	35579.5	331268.2017	331268.2	0	3557.95	0	1.490545	0	0	1.490545	0.037953	0	0	0.037953	0.001461	0.005611	0.045024	0.039669	0	0	0.039669	0.005843	0.016032	0.061543	381.8867	0	0
Statewide Totals	2026	MHDT	Aggregate	Aggregate	Gasoline	46911.62	2534575.211	2534575	0	938607.6	0	0.949769	0.004424	0.417374	1.371567	0.003028	0	0.000482	0.003509	0.008382	0.04297	0.054861	0.003293	0	0.000524	0.003817	0.033527	0.12277	0.160114	4666.192	27.55791	46.42256
Statewide Totals	2026	MHDT	Aggregate	Aggregate	Diesel	288372.5	12351100.12	12351100	0	3451074	0	12.831	3.800149	6.194135	22.82528	0.132621	0.005893	0	0.138515	0.040844	0.210893	0.390252	0.138618	0.00616	0	0.144778	0.163377	0.602552	0.910707	15004.61	700.4243	0
Statewide Totals	2026	MHDT	Aggregate	Aggregate	Electricity	4528.83	248001.2211	0	248001.2	58038.19	266048.2	0	0	0	0	0	0	0	0	0.00082	0.002116	0.002936	0	0	0	0	0.00328	0.006046	0.009326	0	0	0
Statewide Totals	2026	MHDT	Aggregate	Aggregate	Natural Ga:	3462.308	160559.3354	160559.3	0	30435.34	0	0.017756	0.025231	0	0.042987	0.000193	7.44E-05	0	0.000268	0.000531	0.00275	0.003549	0.00021	8.1E-05	0	0.000291	0.002124	0.007858	0.010273	159.6005	20.87482	0
Statewide Totals	2026	OBUS	Aggregate	Aggregate	Gasoline	12243.46	532273.1222	532273.1	0	244967.1	0	0.278129	0.00085	0.108951	0.38793	0.000544	0	7.76E-05	0.000622	0.00176	0.009097	0.011479	0.000592	0	8.44E-05	0.000676	0.007041	0.02599	0.033707	998.6248	5.084963	8.461861
Statewide Totals	2026	OBUS	Aggregate	Aggregate	Electricity	103.3381	8689.381708	0	8689.382	2067.59	9399.347	0	0	0	0	0	0	0	0	2.87E-05	7.41E-05	0.000103	0	0	0	0	0.000115	0.000212	0.000327	0	0	0
Statewide Totals	2026	OBUS	Aggregate	Aggregate	Natural Ga:	788.3341	45677.11762	45677.12	0	7016.173	0	0.007187	0.00134	0	0.008527	4.58E-05	3.3E-06	0	4.91E-05	0.000151	0.000784	0.000984	4.98E-05	3.59E-06	0	5.34E-05	0.000604	0.002241	0.002898	45.64694	1.049912	0
Statewide Totals	2026	SBUS	Aggregate	Aggregate	Gasoline	6624.107	351597.208	351597.2	0	26496.43	0	0.219923	0.006575	0.021931	0.248428	0.000382	0	1.58E-05	0.000398	0.000775	0.006207	0.00738	0.000415	0	1.72E-05	0.000432	0.003101	0.017735	0.021268	329.1096	18.94402	1.681561
Statewide Totals	2026	SBUS	Aggregate	Aggregate	Diesel	19101.17	416834.1622	416834.2	0	276584.9	0	2.121891	0.499823	0.1382	2.759913	0.011292	0.000477	0	0.011769	0.001378	0.007299	0.020446	0.011803	0.000498	0	0.012301	0.005514	0.020854	0.038668	534.3531	47.17943	0
Statewide Totals	2026	SBUS	Aggregate	Aggregate	Electricity	256.4759	7814.459589	0	7814.46	3196.046	8550.601	0	0	0	0	0	0	0	0	2.31E-05	6.89E-05	9.19E-05	0	0	0	0	9.23E-05	0.000197	0.000289	0	0	0
Statewide Totals	2026	SBUS	Aggregate	Aggregate	Natural Ga:	4640.348	113342.526	113342.5	0	67192.24	0	0.083683	0.026597	0	0.110281	0.000493	6.68E-05	0	0.000559	0.000375	0.002028	0.002962	0.000536	7.26E-05	0	0.000608	0.001499	0.005795	0.007902	194.4774	21.40025	0
Statewide Totals	2026	UBUS	Aggregate	Aggregate	Gasoline	2866.615	245862.3347	245862.3	0	11466.46	0	0.032883	0	0.008615	0.041498	0.000343	0	6.95E-06	0.00035	0.000662	0.00943	0.010442	0.000373	0	7.56E-06	0.000381	0.002648	0.026942	0.029971	353.9684	0	0.970275
Statewide Totals	2026	UBUS	Aggregate	Aggregate	Diesel	3446.208	345145.9405	345145.9	0	13784.83	0	0.143217	0	0	0.143217	0.002519	0	0	0.002519	0.002971	0.014625	0.020115	0.002633	0	0	0.002633	0.011884	0.041786	0.056303	465.4938	0	0
Statewide Totals	2026	UBUS	Aggregate	Aggregate	Electricity	442.4493	40601.23967	0	40601.24	1769.797	78601.1	0	0	0	0	0	0	0	0	0.000368	0.000861	0.001229	0	0	0	0	0.001471	0.00246	0.003931	0	0	0
Statewide Totals	2026	UBUS	Aggregate	Aggregate	Natural Ga:	7923.085	917370.5012	917370.5	0	31692.34	0	0.437643	0	0	0.437643	0.000482	0	0	0.000482	0.008249	0.038832	0.047562	0.000503	0	0	0.000503	0.032995	0.110948	0.144446	2107.083	0	0
Statewide Totals	2027	HHDT	Aggregate	Aggregate	Gasoline	90.74515	7752.555127	7752.555	0	1815.629	0	0.040917	0	0.000464	0.04138	1.19E-05	0	1.67E-06	1.36E-05	4.27E-05	0.000269	0.000326	1.3E-05	0	1.81E-06	1.48E-05	0.000171	0.000769	0.000955	17.7424	0	0.108327
Statewide Totals	2027	HHDT	Aggregate	Aggregate	Diesel	330234.7	44752670.6	44752671	0	5376907	0	79.03278	25.82761	16.67923	121.5396	1.32907	0.011571	0	1.34064	0.437893	1.338146	3.11668	1.389164	0.012094	0	1.401258	1.751572	3.823275	6.976105	74279.71	5012.574	0
Statewide Totals	2027	HHDT	Aggregate	Aggregate	Electricity	5656.524	687472.2337	0	687472.2	83337.72	1251949	0	0	0	0	0	0	0	0	0.006618	0.011068	0.017686	0	0	0	0	0.026472	0.031622	0.058094	0	0	0
Statewide Totals	2027	HHDT	Aggregate	Aggregate	Natural Ga:	20221.61	1280254.21	1280254	0	144752.3	0	1.108909	0.206773	0	1.315682	0.002576	0.000439	0	0.003015	0.012701	0.075475	0.091191	0.002802	0.000478	0	0.003279	0.050805	0.215643	0.269727	1747.151	195.0125	0
Statewide Totals	2027	LDA	Aggregate	Aggregate	Gasoline	12713197	497958751.9	4.98E+08	0	58870071	0	18.33474	0	14.56801	32.90275	0.632563	0	0.115863	0.748426	1.097812	1.469654	3.315893	0.68797	0	0.126012	0.813982	4.391248	4.199013	9.404242	147062.3	0	4254.026
Statewide Totals	2027	LDA	Aggregate	Aggregate	Diesel	34811	1027855.35	1027855	0	146035.5	0	0.182651	0	0	0.182651	0.015259	0	0	0.015259	0.002266	0.003083	0.020608	0.015948	0	0	0.015948	0.009064	0.00881	0.033822	266.3242	0	0
Statewide Totals	2027	LDA	Aggregate	Aggregate	Electricity	945896.6	44182412.22	0	44182412	4651606	17058058	0	0	0	0	0	0	0	0	0.097406	0.074611	0.172016	0	0	0	0	0.389622	0.213173	0.602795	0	0	0
Statewide Totals	2027	LDA	Aggregate	Aggregate	Plug-in Hyb	432800	19519039.91	9073044	10445996	1789628	3155002	0.066296	0	0.223765	0.290061	0.011457	0	0.003487	0.014944	0.043032	0.029859	0.087835	0.012461	0	0.003792	0.016253	0.172128	0.085312	0.273693	2869.52	0	122.4309
Statewide Totals	2027	LDT1	Aggregate	Aggregate	Gasoline	1225903	41758052.73	41758053	0	5335952	0	5.910033	0	2.231009	8.141043	0.082123	0	0.015397	0.09752	0.092061	0.151761	0.341342	0.089316	0	0.016746	0.106062	0.368243	0.433603	0.907909	14944.46	0	492.021
Statewide Totals	2027	LDT1	Aggregate	Aggregate	Diesel	249.3117	3462.722922	3462.723	0	693.1231	0	0.005056	0	0	0.005056	0.000803	0	0	0.000803	7.63E-06	1.41E-05	0.000824	0.000839	0	0	0.000839	3.05E-05	4.02E-05	0.00091	1.568068	0	0
Statewide Totals	2027	LDT1	Aggregate	Aggregate	Electricity	5171.971	239464.3737	0	239464.4	25277.92	92453.01	0	0	0	0	0	0	0	0	0.000528	0.000404	0.000932	0	0	0	0	0.002112	0.001154	0.003266	0	0	0
Statewide Totals	2027	LDT1	Aggregate	Aggregate	Plug-in Hyb	3840.471	189145.5041	79691.28	109454.2	15880.35	33058.44	0.000584	0	0.001983	0.002567	6.97E-05	0	2.14E-05	9.11E-05	0.000417	0.000292	0.0008	7.58E-05	0	2.33E-05	9.9E-05	0.001668	0.000835	0.002602	25.30737	0	1.15217
Statewide Totals	2027	LDT2	Aggregate	Aggregate	Gasoline	6533170	258779163.7	2.59E+08	0	30476806	0	15.89455	0	9.614331	25.50888	0.339493	0	0.060329	0.399822	0.570511	0.901622	1.871955	0.369229	0	0.065613	0.434843	2.282043	2.576064	5.29295	93278.55	0	2721.177
Statewide Totals	2027	LDT2	Aggregate	Aggregate	Diesel	23723.73	964704.5217	964704.5	0	112405.8	0	0.042857	0	0	0.042857	0.004789	0	0	0.004789	0.002127	0.003345	0.010261	0.005006	0	0	0.005006	0.008507	0.009556	0.023069	318.7653	0	0
Statewide Totals	2027	LDT2	Aggregate	Aggregate	Electricity	73247.28	2552568.148	0	2552568	369377.4	985502	0	0	0	0	0	0	0	0	0.005627	0.0043	0.009928	0	0	0	0	0.02251	0.012287	0.034797	0	0	0
Statewide Totals	2027	LDT2	Aggregate	Aggregate	Plug-in Hyb	75958.15	3551639.766	1563720	1987920	314086.9	600411	0.011444	0	0.03926	0.050703	0.001608	0	0.000497	0.002106	0.00783	0.005465	0.0154	0.001749	0	0.000541	0.00229	0.03132	0.015614	0.049224	495.6652	0	24.869
Statewide Totals	2027	LHDT1	Aggregate	Aggregate	Gasoline	515800.2	19563402.48	19563402	0	7684654	0	3.134463	0.019443	5.001477	8.155383	0.02863	0	0.002339	0.030968	0.04313	0.588723	0.662822	0.031138	0	0.002543	0.033681	0.17252	1.682067	1.888268	15632.95	66.52153	217.2596
Statewide Totals	2027	LHDT1	Aggregate	Aggregate	Diesel	377439.8	14165043.26	14165043	0	4747717	0	23.53545	0.789661	0	24.32511	0.504736	0.010979	0	0.515715	0.046843	0.42627	0.988828	0.527558	0.011475	0	0.539033	0.187371	1.217914	1.944319	8903.921	54.29573	0
Statewide Totals	2027	LHDT1	Aggregate	Aggregate	Electricity	14810.89	959412.2452	0	959412.2	207222.3	579422.5	0	0	0	0	0	0	0	0	0.002115	0.014436	0.016551	0	0	0	0	0.008461	0.041245	0.049706	0	0	0
Statewide Totals	2027	LHDT2	Aggregate	Aggregate	Gasoline	72643.67	2645395.809	2645396	0	1082283	0	0.35133	0.002724	0.712334	1.066388	0.003207	0	0.000232	0.003439	0.005832	0.092876	0.102147	0.003488	0	0.000252	0.00374	0.023328	0.265361	0.292429	2378.094	10.88191	29.90726
Statewide Totals	2027	LHDT2	Aggregate	Aggregate	Diesel	155656.6	5976084.345	5976084	0	1957964	0	7.3023	0.310124	0	7.612424	0.183412	0.004576	0	0.187988	0.019763	0.209812	0.417563	0.191706	0.004783	0	0.196488	0.07905	0.599463	0.875001	4453.303	35.577	0
Statewide Totals	2027	LHDT2	Aggregate	Aggregate	Electricity	3795.237	234252.3775	0	234252.4	50342.55	140299.6	0	0	0	0	0	0	0	0	0.000516	0.004112	0.004629	0	0	0	0	0.002066	0.011749	0.013815	0	0	0
Statewide Totals	2027	MCY	Aggregate	Aggregate	Gasoline	702186.4	4096806.252	4096806	0	1404373	0	2.554263	0	0.200737	2.755	0.008905	0	0.00496	0.013865	0.004516	0.018967	0.037348	0.009528	0	0.005284	0.014811	0.018064	0.054191	0.087067	868.8633	0	73.55048
Statewide Totals	2027	MDV	Aggregate	Aggregate	Gasoline	4213979	156922734.9	1.57E+08	0	19298599	0	14.08437	0	7.812569	21.89693	0.207117	0	0.039766	0.246882	0.345956	0.555251	1.148089	0.225258	0	0.043249	0.268507	1.383822	1.586433	3.238762	69586.19	0	2140.934
Statewide Totals	2027	MDV	Aggregate	Aggregate	Diesel	64514.98	2389254.994	2389255	0	296435.4	0	0.182564	0	0	0.182564	0.015078	0	0	0.015078	0.005267	0.00854	0.028886	0.01576	0	0	0.01576	0.02107	0.024401	0.06123	1070.402	0	0
Statewide Totals	2027	MDV	Aggregate	Aggregate	Electricity	77879.3	2708503.116	0	2708503	392489.7	1045706	0	0	0	0	0	0	0	0	0.005971	0.004564	0.010536	0	0	0	0	0.023885	0.013041	0.036926	0	0	0
Statewide Totals	2027	MDV	Aggregate	Aggregate	Plug-in Hyb	48332.79	2181542.854	971366.4	1210176	199856.1	365509.4	0.007094	0	0.024982	0.032076	0.001125	0	0.000358	0.001483	0.004809	0.003349	0.009641	0.001223	0	0.000389	0.001612	0.019238	0.009569	0.030419	307.2759	0	19.52153

Statewide Totals	2027	MH	Aggregate	Aggregate	Gasoline	72996.97	678874.0196	678874	0	7302.616	0	0.236951	0	0.003596	0.240547	0.000955	0	2.77E-06	0.000957	0.002245	0.011536	0.014738	0.001038	0	3.01E-06	0.001041	0.00898	0.03296	0.042981	1391.549	0	0.249881
Statewide Totals	2027	MH	Aggregate	Aggregate	Diesel	35422.29	328111.4572	328111.5	0	3542.229	0	1.432763	0	0	1.432763	0.035943	0	0	0.035943	0.001447	0.005556	0.042945	0.037568	0	0	0.037568	0.005787	0.015874	0.059229	378.2132	0	0
Statewide Totals	2027	MHDT	Aggregate	Aggregate	Gasoline	45832.05	2474908.325	2474908	0	917007.7	0	0.807494	0.004232	0.396142	1.207868	0.002963	0	0.00046	0.003423	0.008184	0.04195	0.053557	0.003222	0	0.000501	0.003723	0.032737	0.119856	0.156316	4513.045	26.72012	44.73415
Statewide Totals	2027	MHDT	Aggregate	Aggregate	Diesel	292488.2	12389015.59	12389016	0	3503647	0	11.73918	3.665594	6.250824	21.6556	0.118607	0.004928	0	0.123535	0.04097	0.211494	0.375998	0.12397	0.00515	0	0.129121	0.163879	0.604267	0.897266	14970.87	704.0604	0
Statewide Totals	2027	MHDT	Aggregate	Aggregate	Electricity	7633.639	413802.662	0	413802.7	97714.79	443707.9	0	0	0	0	0	0	0	0	0.001368	0.00353	0.004898	0	0	0	0	0.005474	0.010085	0.015558	0	0	0
Statewide Totals	2027	MHDT	Aggregate	Aggregate	Natural Ga:	3639.664	165510.5422	165510.5	0	31986.09	0	0.017553	0.026476	0	0.044029	0.000203	7.96E-05	0	0.000283	0.000547	0.002835	0.003665	0.000221	8.65E-05	0	0.000307	0.002189	0.008099	0.010596	163.7854	21.96616	0
Statewide Totals	2027	OBUS	Aggregate	Aggregate	Gasoline	11791.83	502807.0467	502807	0	235931	0	0.244744	0.000805	0.105712	0.351261	0.000525	0	7.45E-05	0.0006	0.001663	0.008594	0.010857	0.000571	0	8.11E-05	0.000652	0.006651	0.024555	0.031858	933.624	4.871625	8.097241
Statewide Totals	2027	OBUS	Aggregate	Aggregate	Diesel	10737.33	733883.147	733883.1	0	127268.7	0	1.264064	0.134823	0.222587	1.621473	0.025586	0.000162	0	0.025749	0.002427	0.016735	0.044911	0.026743	0.00017	0	0.026913	0.009708	0.047815	0.084435	1078.465	30.46001	0
Statewide Totals	2027	OBUS	Aggregate	Aggregate	Electricity	164.4868	13671.5093	0	13671.51	3291.051	14784.02	0	0	0	0	0	0	0	0	4.52E-05	0.000117	0.000162	0	0	0	0	0.000181	0.000333	0.000514	0	0	0
Statewide Totals	2027	OBUS	Aggregate	Aggregate	Natural Ga:	818.1196	46533.74809	46533.75	0	7281.265	0	0.006835	0.001385	0	0.008221	4.94E-05	3.54E-06	0	5.29E-05	0.000154	0.000799	0.001006	5.37E-05	3.85E-06	0	5.76E-05	0.000616	0.002283	0.002956	45.97754	1.086016	0
Statewide Totals	2027	SBUS	Aggregate	Aggregate	Gasoline	6681.902	354067.488	354067.5	0	26727.61	0	0.206589	0.006557	0.022462	0.235608	0.000374	0	1.59E-05	0.000389	0.000781	0.006252	0.007422	0.000406	0	1.73E-05	0.000424	0.003122	0.017862	0.021408	330.2785	19.04825	1.67856
Statewide Totals	2027	SBUS	Aggregate	Aggregate	Diesel	18906.69	411108.1615	411108.2	0	273768.9	0	1.951756	0.476048	0.14211	2.569914	0.010477	0.000432	0	0.010909	0.00136	0.007197	0.019466	0.010951	0.000452	0	0.011402	0.005438	0.020564	0.037404	524.5396	46.46088	0
Statewide Totals	2027	SBUS	Aggregate	Aggregate	Electricity	417.2776	12701.72836	0	12701.73	5207.624	13897.32	0	0	0	0	0	0	0	0	3.75E-05	0.000112	0.000149	0	0	0	0	0.00015	0.00032	0.00047	0	0	0
Statewide Totals	2027	SBUS	Aggregate	Aggregate	Natural Ga:	4789.579	115717.9033	115717.9	0	69353.1	0	0.082944	0.027413	0	0.110357	0.000503	6.99E-05	0	0.000573	0.000383	0.002071	0.003026	0.000547	7.6E-05	0	0.000623	0.001531	0.005916	0.00807	197.4059	22.10368	0
Statewide Totals	2027	UBUS	Aggregate	Aggregate	Gasoline	2863.033	245427.9607	245428	0	11452.13	0	0.0327	0	0.008393	0.041093	0.000348	0	6.97E-06	0.000355	0.00066	0.009405	0.01042	0.000379	0	7.58E-06	0.000386	0.002638	0.026871	0.029896	348.7	0	0.96137
Statewide Totals	2027	UBUS	Aggregate	Aggregate	Diesel	3401.46	338009.1028	338009.1	0	13605.84	0	0.138079	0	0	0.138079	0.002469	0	0	0.002469	0.002898	0.014321	0.019688	0.002581	0	0	0.002581	0.011592	0.040916	0.055089	451.8876	0	0
Statewide Totals	2027	UBUS	Aggregate	Aggregate	Electricity	724.8727	71813.20029	0	71813.2	2899.491	138292.3	0	0	0	0	0	0	0	0	0.00064	0.001523	0.002163	0	0	0	0	0.00256	0.004352	0.006913	0	0	0
Statewide Totals	2027	UBUS	Aggregate	Aggregate	Natural Ga:	7793.258	904719.7208	904719.7	0	31173.03	0	0.401971	0	0	0.401971	0.000484	0	0	0.000484	0.00814	0.038295	0.04692	0.000506	0	0	0.000506	0.03256	0.109416	0.142482	2058.961	0	0
Statewide Totals	2028	HHDT	Aggregate	Aggregate	Gasoline	81.58781	7435.951794	7435.952	0	1632.409	0	0.036101	0	0.000361	0.036462	1.08E-05	0	1.37E-06	1.22E-05	4.1E-05	0.000256	0.00031	1.18E-05	0	1.49E-06	1.33E-05	0.000164	0.000732	0.00091	16.66475	0	0.096205
Statewide Totals	2028	HHDT	Aggregate	Aggregate	Diesel	335719.6	45293436.24	45293436	0	5470645	0	77.73576	25.75718	16.85065	120.3436	1.340034	0.011432	0	1.351465	0.443292	1.364071	3.158828	1.400624	0.011949	0	1.412573	1.773166	3.897345	7.083084	73811.74	5003.462	0
Statewide Totals	2028	HHDT	Aggregate	Aggregate	Electricity	8585.989	1041454.682	0	1041455	125097.1	1896888	0	0	0	0	0	0	0	0	0.010015	0.016963	0.026978	0	0	0	0	0.040062	0.048464	0.088526	0	0	0
Statewide Totals	2028	HHDT	Aggregate	Aggregate	Natural Ga:	20748.79	1301536.164	1301536	0	148463.9	0	1.036023	0.207267	0	1.243291	0.002523	0.000461	0	0.002984	0.012912	0.077007	0.092903	0.002744	0.000502	0	0.003246	0.051649	0.220019	0.274913	1758.122	199.2652	0
Statewide Totals	2028	LDA	Aggregate	Aggregate	Gasoline	12663213	495970018.1	4.96E+08	0	58628536	0	17.0908	0	14.01274	31.10354	0.595273	0	0.110417	0.70569	1.093427	1.464254	3.263372	0.647413	0	0.120089	0.767502	4.37371	4.183584	9.324796	143721.3	0	4150.775
Statewide Totals	2028	LDA	Aggregate	Aggregate	Diesel	30909.52	919794.8998	919794.9	0	130486	0	0.139498	0	0	0.139498	0.01122	0	0	0.01122	0.002028	0.002765	0.016013	0.011728	0	0	0.011728	0.008111	0.0079	0.027739	234.8271	0	0
Statewide Totals	2028	LDA	Aggregate	Aggregate	Electricity	1019962	47044067.35	0	47044067	4995227	18162893	0	0	0	0	0	0	0	0	0.103714	0.079478	0.183192	0	0	0	0	0.414858	0.227079	0.641937	0	0	0
Statewide Totals	2028	LDA	Aggregate	Aggregate	Plug-in Hyb	454275.4	20224042.29	9255466	10968576	1878429	3312837	0.067633	0	0.234896	0.302529	0.010972	0	0.003459	0.014431	0.044586	0.031012	0.090029	0.011933	0	0.003762	0.015695	0.178346	0.088606	0.282646	2926.933	0	127.0532
Statewide Totals	2028	LDT1	Aggregate	Aggregate	Gasoline	1200266	40926999.05	40926999	0	5226264	0	5.220971	0	2.065078	7.286049	0.075081	0	0.014216	0.089296	0.090229	0.148748	0.328273	0.081657	0	0.015461	0.097118	0.360915	0.424994	0.883027	14393.62	0	471.3117
Statewide Totals	2028	LDT1	Aggregate	Aggregate	Diesel	149.6646	2157.743455	2157.743	0	418.1692	0	0.002849	0	0	0.002849	0.000447	0	0	0.000447	4.76E-06	8.65E-06	0.00046	0.000467	0	0	0.000467	1.9E-05	2.47E-05	0.000511	0.943798	0	0
Statewide Totals	2028	LDT1	Aggregate	Aggregate	Electricity	6281.01	294143.6824	0	294143.7	30836.98	113563.7	0	0	0	0	0	0	0	0	0.000648	0.000496	0.001145	0	0	0	0	0.002594	0.001418	0.004012	0	0	0
Statewide Totals	2028	LDT1	Aggregate	Aggregate	Plug-in Hyb	4797.044	233423.1903	97529.98	135893.2	19835.78	41043.8	0.000714	0	0.002477	0.003192	7.76E-05	0	2.44E-05	0.000102	0.000515	0.000361	0.000978	8.43E-05	0	2.66E-05	0.000111	0.002058	0.001032	0.003201	30.96923	0	1.427713
Statewide Totals	2028	LDT2	Aggregate	Aggregate	Gasoline	6642219	262284437.4	2.62E+08	0	30959234	0	14.79559	0	9.338998	28.13458	0.324662	0	0.058466	0.383128	0.578239	0.915358	1.876724	0.353099	0	0.063587	0.416686	2.312954	2.615308	5.344949	92651.7	0	2704.414
Statewide Totals	2028	LDT2	Aggregate	Aggregate	Diesel	24274.6	980543.7791	980543.8	0	114759.2	0	0.040807	0	0	0.040807	0.004677	0	0	0.004677	0.002162	0.003409	0.010247	0.004888	0	0	0.004888	0.008647	0.00974	0.023275	318.2435	0	0
Statewide Totals	2028	LDT2	Aggregate	Aggregate	Electricity	87629.24	3010196.778	0	3010197	440019.5	1162184	0	0	0	0	0	0	0	0	0.006636	0.005074	0.01171	0	0	0	0	0.026545	0.014498	0.041043	0	0	0
Statewide Totals	2028	LDT2	Aggregate	Aggregate	Plug-in Hyb	85871.42	3954339.217	1720343	2233997	355078.3	674733.6	0.012591	0	0.044387	0.056978	0.001642	0	0.000525	0.002167	0.008718	0.006097	0.016981	0.001786	0	0.000571	0.002356	0.034871	0.017419	0.054647	545.2458	0	27.82988
Statewide Totals	2028	LHDT1	Aggregate	Aggregate	Gasoline	509894.4	19298233.57	19298234	0	7596668	0	2.791159	0.018751	4.788804	7.598713	0.027844	0	0.002189	0.030034	0.042545	0.580744	0.653323	0.030283	0	0.002381	0.032664	0.170181	1.659268	1.862113	15187.62	65.28776	214.1663
Statewide Totals	2028	LHDT1	Aggregate	Aggregate	Diesel	372695.3	13916085.2	13916085	0	4688038	0	21.03211	0.751878	0	21.78399	0.467553	0.010812	0	0.478365	0.04602	0.418778	0.943163	0.488694	0.011301	0	0.499994	0.184078	1.196509	1.880582	8703.311	53.15976	0
Statewide Totals	2028	LHDT1	Aggregate	Aggregate	Electricity	23209.26	1464237.325	0	1464237	324762.2	884589.9	0	0	0	0	0	0	0	0	0.003228	0.022032	0.02526	0	0	0	0	0.012912	0.062948	0.07586	0	0	0
Statewide Totals	2028	LHDT2	Aggregate	Aggregate	Gasoline	71340.36	2586772.614	2586773	0	1062865	0	0.305951	0.002606	0.680461	0.989018	0.003092	0	0.000212	0.003304	0.005703	0.090818	0.099825	0.003362	0	0.000231	0.003593	0.022811	0.25948	0.285885	2293.308	10.61859	29.19169
Statewide Totals	2028	LHDT2	Aggregate	Aggregate	Diesel	156305.8	5939453.553	5939454	0	1966130	0	6.740736	0.300475	0	7.041212	0.174889	0.0046	0	0.179489	0.019641	0.208526	0.407656	0.182796	0.004808	0	0.187605	0.078566	0.595789	0.861959	4393.726	35.44617	0
Statewide Totals	2028	LHDT2	Aggregate	Aggregate	Electricity	5948.165	357828.5371	0	357828.5	78897.01	214340.8	0	0	0	0	0	0	0	0	0.000789	0.006281	0.00707	0	0	0	0	0.003156	0.017947	0.021102	0	0	0
Statewide Totals	2028	MCY	Aggregate	Aggregate	Gasoline	704783.1	4094242.364	4094242	0	1409566	0	2.503096	0	0.193243	2.696339	0.008957	0	0.004942	0.013898	0.004513	0.018955	0.037367	0.009587	0	0.005268	0.014855	0.018053	0.054158	0.087065	866.3358	0	72.36591
Statewide Totals	2028	MDV	Aggregate	Aggregate	Gasoline	4224143	157163701.6	1.57E+08	0	19342263	0	12.63228	0	7.33375	19.96603	0.196144	0	0.038021	0.234166	0.346487	0.556796	1.137449	0.213325	0	0.041352	0.254677	1.385947	1.590846	3.23147	68257.65	0	2098.466
Statewide Totals	2028	MDV	Aggregate	Aggregate	Diesel	63525.2	2327128.372	2327128	0	291046.5	0	0.155959	0	0	0.155959	0.012977	0	0	0.012977	0.00513	0.008361	0.026468	0.013563	0	0	0.013563	0.020522	0.023888	0.057973	1026.533	0	0
Statewide Totals	2028	MDV	Aggregate	Aggregate	Electricity	91567.26	3134876.304	0	3134876	459311.1	1210321	0	0	0	0	0	0	0	0	0.006911	0.005287	0.012198	0	0	0	0	0.027645	0.015104	0.042749	0	0	0
Statewide Totals	2028	MDV	Aggregate	Aggregate	Plug-in Hyb	54425.2	2427080.433	1064794	1362287	225048.2	411451.2	0.007778	0	0.028132	0.035911	0.001129	0	0.000371	0.0015	0.005351	0.003735	0.010586	0.001228	0	0.000404	0.001632	0.021403	0.010672	0.033707	336.8734	0	21.69844
Statewide Totals	2028	MH	Aggregate	Aggregate	Gasoline	69735.15	654125.1704	654125.2	0	6976.305	0	0.206225	0	0.003506	0.209731	0.00089	0	2.56E-06	0.000892	0.002163	0.011114	0.01417	0.000968	0	2.78E-06	0.00097	0.008653	0.031755	0.041378	1340.187	0	0.23771
Statewide Totals	2028	MH	Aggregate	Aggregate	Diesel	35217.89	324772.05	324772	0	3521.789	0	1.376392	0	0	1.376392	0.033929	0	0	0.033929	0.001432	0.005499	0.04086	0.035464	0	0	0.035464	0.005728	0.015711	0.056902	374.4093	0	0
Statewide Totals	2028	MHDT	Aggregate	Aggregate	Gasoline	44664.81	2404708.227	2404708	0	893653.5	0	0.683015	0.004028	0.371447	1.05849	0.002889	0	0.00044	0.003329	0.007952	0.040762	0.052044	0.003142	0	0.000479	0.003621	0.031809	0.116464	0.151894	4343.983	25.84585	43.01046
Statewide Totals	2028	MHDT	Aggregate	Aggregate	Diesel	295113.6	12360647.52	12360648	0	3537773	0	10.70888	3.522881	6.199732	20.43149	0.10617	0.00412	0	0.11029	0.040876	0.211001	0.362167	0.11097	0.004307	0	0.115277	0.163503	0.60286	0.88164	14849.06	704.2886	0
Statewide Totals	2028	MHDT	Aggregate	Aggregate	Electricity	12311.06	664300.4021	0	664300.4	157511.8	711855.6	0	0	0	0	0	0	0	0	0.002197	0.005666	0.007863	0	0	0	0	0.008787	0.01619	0.024977	0	0	0
Statewide Totals	2028	MHDT	Aggregate	Aggregate	Natural Ga:	3793.928	169239.7835	169239.8	0	33370.91	0	0.017297	0.027539	0	0.044836	0.000211	8.41E-05	0	0.000295	0.00056	0.002899	0.003754	0.00023	9.15E-05	0	0.000321	0.002239	0.008282	0.010842	166.9634	22.90807	0
Statewide Totals	2028	OBUS	Aggregate	Aggregate	Gasoline	11380.87	474819.8527	474819.9	0	227708.3	0	0.216008	0.000763	0.100814	0.317585	0.000507	0	7.23E-05	0.000579	0.00157	0.008115	0.010264	0.000551	0	7.86E-05	0.00063	0.006281	0.023185	0.030096	873.522	4.678898	7.764235
Statewide Totals	2028	OBUS	Aggregate	Aggregate	Diesel	10984.62	737222.4761	737222.5	0	130504.8	0	1.236014	0.133439	0.22285	1.592302	0.024633	0.000155	0	0.024788	0.002438	0.016891	0.044118	0.025747	0.000162	0	0.025909	0.009752	0.048261	0.083922	1070.905	31.03065	0
Statewide Totals	2028	OBUS	Aggregate	Aggregate	Electricity	256.962	21176.59316	0	21176.59	5141.296	22901	0	0	0	0	0	0	0	0	7E-05	0.000181	0.000251	0	0	0	0	0.00028	0.000516	0.000796	0	0	0
Statewide Totals	2028	OBUS	Aggregate	Aggregate	Natural Ga:	843.5694	47204.16332	47204.16	0	7507.767	0	0.006516	0.001424	0	0.00794	5.22E-05	3.75E-06	0	5.6E-05	0.000156	0.000811	0.001023	5.68E-05	4.08E-06	0	6.09E-05	0.000624	0.002316	0.003001	46.09043	1.116147	0
Statewide Totals	2028	SBUS	Aggregate	Aggregate	Gasoline	6726.772	355787.2368	355787.2	0	26907.09	0	0.195341	0.006517	0.022764	0.224622	0.000368	0	1.6E-05	0.000384	0.000784	0.006282	0.00745	0.0004	0	1.74E-05	0.000417	0.003138	0.01795	0.021505	330.8378	19.12039	1.675868
Statewide Totals	2028	SBUS	Aggregate	Aggregate	Diesel	18640.9	404000.4482	404000.4	0	269920.2	0	1.776004	0.449384	0.144208	2.369596	0.009651	0.000387	0	0.010039	0.001336	0.007072	0.018446	0.010088	0.000405	0	0.010493	0.005344	0.020205	0.036041	513.0342	45.55118	0
Statewide Totals	2028	SBUS	Aggregate	Aggregate	Electricity	660.6132	20180.34536	0	20180.35	8253.666	22075.89	0	0	0	0	0	0	0	0	5.97E-05	0.000178	0.000238	0	0	0	0	0.000239	0.000508	0.000747	0	0	0
Statewide Totals	2028	SBUS	Aggregate	Aggregate	Natural Ga:	4926.531	117659.6753	117659.7	0	71336.17	0	0.082063	0.028161	0	0.110225	0.000511	7.27E-05	0	0.000584	0.000389	0.002105	0.003079	0.000556	7.91E-05	0	0.000635	0.001556	0.006016	0.008207	199.6693	22.74946	0
Statewide Totals	2028	UBUS	Aggregate	Aggregate	Gasoline	2840.962	243018.5177	243018.5	0	11363.85	0	0.032106	0	0.008186	0.040292	0.000346	0	6.86E-06	0.000352	0.000651	0.009296	0.0103	0.000376	0	7.46E-06	0.000383	0.002603	0.026561	0.029547	340.8351	0	0.943495
Statewide Totals	2028	UBUS	Aggregate	Aggregate	Diesel	3218.207	319778.4739	319778.5	0	12872.83	0	0.129265	0	0	0.129265	0.002324	0	0	0.002324	0.002719	0.013546	0.018589	0.002429	0	0	0.002429	0.010875	0.038703	0.052007	420.7743	0	0
Statewide Totals	2028	UBUS	Aggregate	Aggregate	Electricity	1213.031	130609.1255	0	130609.1	4852.125	250072	0	0	0	0	0	0	0	0	0.001159	0.002771	0.00393	0	0	0	0	0.004635	0.007918	0.012553	0	0	0
Statewide Totals	2028	UBUS	Aggregate	Aggregate	Natural Ga:	7614.639	877549.8095	877549.8	0	30458.56	0	0.34094	0	0	0.34094	0.000461	0	0	0.000461	0.007898	0.037142	0.045501	0.000482	0	0	0.000482	0.031592	0.10612	0.138195	1969.821	0	0
Statewide Totals	2029	HHDT	Aggregate	Aggregate	Gasoline	73.16594	7135.484472	7135.484	0	1463.904	0	0.030673	0	0.00028	0.030954	9.58E-06	0	1.03E-06	1.06E-05	3.93E-05	0.000244	0.000294	1.04E-05	0	1.12E-06	1.15E-05	0.000157	0.000698	0.000867	15.64751	0	0.084256
Statewide Totals	2029	HHDT	Aggregate	Aggregate	Diesel	340009.8	45771754.55	45771755	0	5547523	0	76.5296	25.67652	16.92249	119.1286	1.349747	0.011257	0	1.361004	0.448105	1.388075	3.197184	1.410777	0.011766	0	1.422542	1.792419	3.965928	7.18089	73280.6	4985.457	0
Statewide Totals	2029	HHDT	Aggregate	Aggregate	Electricity	12304.73	1483236.284	0	1483236	176952.2	2702040	0	0	0	0	0	0	0	0	0.014248	0.024359	0.038607	0	0	0	0	0.056993	0.069596	0.12659	0	0	0
Statewide Totals	2029	HHDT	Aggregate	Aggregate	Natural Ga:	21166.62	1317430.381	1317430	0	151532.3	0	0.963975	0.207095	0	1.171071	0.002473	0.000481	0	0.002955	0.01307	0.078141	0.094166	0.00269	0.000524	0	0.003213	0.05228	0.223261	0.278754	1762.595	202.6013	0
Statewide Totals	2029	LDA	Aggregate	Aggregate	Gasoline	12617064	494219801.3	4.94E+08	0	58412991	0	16.05302	0	13.52987	29.58289	0.559049	0	0.104901	0.663951	1.089569	1.458011	3.21153	0.608017	0	0.11409	0.722107	4.358276	4.165745	9.246128	140721.1	0	4055.979
Statewide Totals	2029	LDA	Aggregate	Aggregate	Diesel	27398.56	821290.7172	821290.7	0	116339.6	0	0.107469	0	0	0.107469	0.008354	0	0	0.008354	0.001811	0.00247	0.012635	0.008732	0	0	0.008732	0.007243	0.007058	0.023033	206.7634	0	0
Statewide Totals	2029	LDA	Aggregate	Aggregate	Electricity	1092504	49787926.28	0	49787926	5329746	19222249	0	0	0	0	0	0	0	0	0.109764	0.084146	0.193909	0	0	0	0	0.439054	0.240417	0.679471	0	0	0
Statewide Totals	2029	LDA	Aggregate	Aggregate	Plug-in Hyb	473583.2	20822316.41	9396335	11425981	1958267	3450987	0.068652	0	0.244906	0.313558	0.010462	0	0.003413	0.013875	0.045905	0.031988	0.091768	0.011378	0	0.003712	0.01509	0.183621	0.091393	0.290105	2970.74	0	131.0836
Statewide Totals	2029	LDT1	Aggregate	Aggregate	Gasoline	1175801	40158563.69	40158564	0	5124068	0	4.582801	0	1.912849	6.495651	0.06844	0	0.01309	0.08153	0.088535	0.145807	0.315871	0.074434	0	0.014237	0.088671	0.354138	0.416591	0.8594	13886.88	0	451.9717
Statewide Totals	2029	LDT1	Aggregate	Aggregate	Diesel	78.58128	1212.976454	1212.976	0	224.4894	0	0.001439	0	0	0.001439	0.000225	0	0	0.000225	2.67E-06	4.75E-06	0.000232	0.000235	0	0	0.000235	1.07E-05	1.36E-05	0.000259	0.527811	0	0
Statewide Totals	2029	LDT1	Aggregate	Aggregate	Electricity	7578.589	357151.0954	0	357151.1	37314.27	137889.8	0	0	0	0	0	0	0	0	0.000787	0.000602	0.00139	0	0	0	0	0.00315	0.001721	0.004871	0	0	0
Statewide Totals	2029	LDT1	Aggregate	Aggregate	Plug-in Hyb	5865.768	282135.1293	117169.7	164965.4	24254.95	49824.47	0.000858	0	0.00303	0.003888	8.61E-05	0	2.78E-05	0.000114	0.000622	0.000437	0.001173	9.36E-05	0	3.02E-05	0.000124	0.002488	0.001248	0.00386	37.1965	0	1.735486
Statewide Totals	2029	LDT2	Aggregate	Aggregate	Gasoline	6745634	265424505.8	2.65E+08	0	31410486	0	13.85046	0	9.113253	22.96371	0.309687	0	0.056477	0.366164	0.585161	0.927027	1.878353	0.336813	0	0.061424	0.398237	2.340645	2.648649	5.387531	92058.56	0	2688.987
Statewide Totals	2029	LDT2	Aggregate	Aggregate	Diesel	24780.04	994476.7646	994476.8	0	116873.7	0	0.039631	0	0	0.039631	0.004662	0	0	0.004662	0.002192	0.003463	0.010317	0.004873	0	0	0.004873	0.00877	0.009893	0.023535	317.4943	0	0

Statewide Totals	2029	LDT2	Aggregate	Aggregate	Electricity	103169.3	3495577.831	0	3495578	515940.2	1349582	0	0	0	0	0	0	0	0.007706	0.005895	0.013602	0	0	0	0	0.030826	0.016844	0.047669	0	0	0
Statewide Totals	2029	LDT2	Aggregate	Aggregate	Plug-in Hyb	96050.93	4359300.25	1877627	2481673	397170.6	749539.1	0.01374	0	0.049653	0.063392	0.001673	0	0.000551	0.002224	0.009611	0.006731	0.018565	0.001819	0	0	0.000599	0.002418	0.038442	0.019231	0.060092	594.9412	0	0	30.86258
Statewide Totals	2029	LHDT1	Aggregate	Aggregate	Gasoline	502634.5	18965743.04	18965743	0	7488506	0	2.454885	0.018044	4.581841	7.05477	0.026861	0	0.002015	0.028876	0.041812	0.570738	0.641426	0.029214	0	0.002191	0.031405	0.167249	1.63068	1.829335	14719.43	63.91338	210.0298
Statewide Totals	2029	LHDT1	Aggregate	Aggregate	Diesel	367488	13636000.13	13636000	0	4622537	0	18.81415	0.71523	0	19.52938	0.432427	0.010627	0	0.443054	0.045093	0.410349	0.898497	0.45198	0.011107	0	0.463087	0.180373	1.172427	1.815888	8488.656	51.99211	0	0
Statewide Totals	2029	LHDT1	Aggregate	Aggregate	Electricity	33861.75	2082554.057	0	2082554	473857.9	1258533	0	0	0	0	0	0	0	0	0.004591	0.031335	0.035926	0	0	0	0	0	0.018365	0.089529	0.107894	0	0	0
Statewide Totals	2029	LHDT2	Aggregate	Aggregate	Gasoline	69930.83	2522912.716	2522913	0	1041865	0	0.266376	0.00249	0.649175	0.918041	0.002973	0	0.000193	0.003166	0.005562	0.088576	0.097304	0.003233	0	0.00021	0.003443	0.022248	0.253074	0.278766	2208.093	10.34489	28.4447
Statewide Totals	2029	LHDT2	Aggregate	Aggregate	Diesel	156496.5	5880464.262	5880464	0	1968529	0	6.236057	0.29072	0	6.526777	0.166709	0.004607	0	0.171316	0.019446	0.206455	0.397217	0.174247	0.004815	0	0.179062	0.077785	0.589871	0.846718	4320.995	35.23155	0	0
Statewide Totals	2029	LHDT2	Aggregate	Aggregate	Electricity	8679.131	509360.7544	0	509360.8	115111.3	305147	0	0	0	0	0	0	0	0	0.001123	0.008941	0.010064	0	0	0	0	0	0.004492	0.025547	0.030039	0	0	0
Statewide Totals	2029	MCY	Aggregate	Aggregate	Gasoline	707626.6	4092316.055	4092316	0	1415253	0	2.4573	0	0.186346	2.643645	0.009009	0	0.004934	0.013943	0.004511	0.018946	0.037401	0.009646	0	0.005264	0.01491	0.018044	0.054132	0.087086	864.2333	0	71.30333
Statewide Totals	2029	MDV	Aggregate	Aggregate	Gasoline	4235386	157396042.1	1.57E+08	0	19390458	0	11.40826	0	6.945018	18.35328	0.185599	0	0.036338	0.221936	0.346999	0.557815	1.126751	0.201855	0	0.039521	0.241376	1.387996	1.593758	3.223131	67053.63	0	2059.926
Statewide Totals	2029	MDV	Aggregate	Aggregate	Diesel	62524.11	2267646.667	2267647	0	285658.1	0	0.133705	0	0	0.133705	0.01127	0	0	0.01127	0.004999	0.008171	0.02444	0.01178	0	0	0.01178	0.019997	0.023345	0.055122	985.3252	0	0	0
Statewide Totals	2029	MDV	Aggregate	Aggregate	Electricity	105688.9	3563579.956	0	3563580	527741.7	1375836	0	0	0	0	0	0	0	0	0.007856	0.006013	0.01387	0	0	0	0	0	0.031425	0.017181	0.048606	0	0	0
Statewide Totals	2029	MDV	Aggregate	Aggregate	Plug-in Hyb	60634.41	2671027.793	1157868	1513160	250723.3	457019.5	0.008458	0	0.031344	0.039802	0.001133	0	0.000384	0.001517	0.005889	0.004118	0.011523	0.001232	0	0.000418	0.00165	0.023554	0.011765	0.036969	366.2931	0	23.91791
Statewide Totals	2029	MH	Aggregate	Aggregate	Gasoline	66636.52	631082.1512	631082.2	0	6666.318	0	0.176564	0	0.003422	0.179986	0.000827	0	2.35E-06	0.000829	0.002087	0.010722	0.013638	0.000899	0	2.56E-06	0.000902	0.008348	0.030634	0.039883	1292.345	0	0.226217
Statewide Totals	2029	MH	Aggregate	Aggregate	Diesel	35012.64	321554.9745	321555	0	3501.264	0	1.322035	0	0	1.322035	0.031995	0	0	0.031995	0.001418	0.005444	0.038856	0.033442	0	0	0.033442	0.005671	0.015553	0.054666	370.7495	0	0	0
Statewide Totals	2029	MHDT	Aggregate	Aggregate	Gasoline	43416.29	2324785.851	2324786	0	868673.1	0	0.573875	0.00383	0.349482	0.927187	0.002805	0	0.000422	0.003227	0.007688	0.03941	0.050325	0.00305	0	0.000459	0.003509	0.030752	0.112601	0.146862	4162.342	24.93934	41.26079
Statewide Totals	2029	MHDT	Aggregate	Aggregate	Diesel	295954.7	12259159.84	12259160	0	3549747	0	9.756872	3.378093	6.085065	19.22003	0.095388	0.003444	0	0.098832	0.04054	0.209259	0.348632	0.099701	0.0036	0	0.103301	0.162161	0.597884	0.863346	14640.78	700.5225	0	0
Statewide Totals	2029	MHDT	Aggregate	Aggregate	Electricity	18734.58	1006224.977	0	1006225	239636.5	1077689	0	0	0	0	0	0	0	0	0.003328	0.008583	0.01191	0	0	0	0	0.01331	0.024523	0.037833	0	0	0
Statewide Totals	2029	MHDT	Aggregate	Aggregate	Natural Ga:	3923.091	171777.7578	171777.8	0	34558.32	0	0.017001	0.028415	0	0.045416	0.000217	8.8E-05	0	0.000305	0.000568	0.002942	0.003816	0.000236	9.57E-05	0	0.000332	0.002272	0.008407	0.011011	169.0049	23.68771	0	0
Statewide Totals	2029	OBUS	Aggregate	Aggregate	Gasoline	10952.63	446590.3567	446590.4	0	219140.2	0	0.189877	0.000722	0.09646	0.287059	0.000485	0	6.93E-05	0.000554	0.001477	0.007631	0.009662	0.000527	0	7.53E-05	0.000602	0.005907	0.021804	0.028314	814.3304	4.481858	7.418999
Statewide Totals	2029	OBUS	Aggregate	Aggregate	Diesel	11187.32	740664.5337	740664.5	0	133123	0	1.21176	0.13133	0.220419	1.563508	0.023409	0.000144	0	0.023553	0.002449	0.017045	0.043047	0.024467	0.000151	0	0.024618	0.009797	0.048699	0.083114	1063.859	31.43488	0	0
Statewide Totals	2029	OBUS	Aggregate	Aggregate	Electricity	381.6136	31178.07593	0	31178.08	7635.326	33718.59	0	0	0	0	0	0	0	0.000103	0.000266	0.000369	0	0	0	0	0.000412	0.00076	0.001172	0	0	0	0
Statewide Totals	2029	OBUS	Aggregate	Aggregate	Natural Ga:	864.2463	47699.28803	47699.29	0	7691.792	0	0.006263	0.001456	0	0.007718	5.44E-05	3.93E-06	0	5.83E-05	0.000158	0.000819	0.001035	5.91E-05	4.27E-06	0	6.34E-05	0.000631	0.00234	0.003034	46.1124	1.140198	0	0
Statewide Totals	2029	SBUS	Aggregate	Aggregate	Gasoline	6762.889	357014.4854	357014.5	0	27051.56	0	0.188751	0.006479	0.023408	0.218637	0.000366	0	1.61E-05	0.000383	0.000787	0.006304	0.007474	0.000399	0	1.75E-05	0.000416	0.003148	0.018012	0.021577	331.0318	19.17282	1.674949
Statewide Totals	2029	SBUS	Aggregate	Aggregate	Diesel	18299.44	395483.3054	395483.3	0	264975.9	0	1.598596	0.420415	0.145741	2.164752	0.008818	0.000344	0	0.009162	0.001308	0.006921	0.017391	0.009217	0.000359	0	0.009576	0.005231	0.019775	0.034583	499.8445	44.44307	0	0
Statewide Totals	2029	SBUS	Aggregate	Aggregate	Electricity	991.2162	30372.0923	0	30372.09	12404.84	33218.32	0	0	0	0	0	0	0	0	9E-05	0.000268	0.000358	0	0	0	0	0.00036	0.000765	0.001125	0	0	0	0
Statewide Totals	2029	SBUS	Aggregate	Aggregate	Natural Ga:	5046.888	119061.2488	119061.2	0	73078.93	0	0.081	0.028818	0	0.109818	0.000518	7.52E-05	0	0.000593	0.000394	0.002131	0.003117	0.000563	8.18E-05	0	0.000645	0.001575	0.006087	0.008307	201.1015	23.31743	0	0
Statewide Totals	2029	UBUS	Aggregate	Aggregate	Gasoline	2820.77	242499.2759	242499.3	0	11283.08	0	0.032085	0	0.007862	0.039947	0.000345	0	6.76E-06	0.000352	0.000648	0.009268	0.010268	0.000375	0	7.36E-06	0.000383	0.002592	0.02648	0.029455	338.0709	0	0.926767
Statewide Totals	2029	UBUS	Aggregate	Aggregate	Diesel	3040.169	295882.6843	295882.7	0	12160.67	0	0.117756	0	0	0.117756	0.00215	0	0	0.00215	0.002503	0.012531	0.017184	0.002247	0	0	0.002247	0.010013	0.035804	0.048063	384.3089	0	0	0
Statewide Totals	2029	UBUS	Aggregate	Aggregate	Electricity	1797.605	199181.6846	0	199181.7	7190.421	383105.5	0	0	0	0	0	0	0	0	0.001787	0.004227	0.006013	0	0	0	0	0	0.007147	0.012076	0.019223	0	0	0
Statewide Totals	2029	UBUS	Aggregate	Aggregate	Natural Ga:	7332.492	844376.8279	844376.8	0	29329.97	0	0.261826	0	0	0.261826	0.000446	0	0	0.000446	0.007576	0.035734	0.043757	0.000466	0	0	0.000466	0.030306	0.102098	0.13287	1859.179	0	0	0
Statewide Totals	2030	HHDT	Aggregate	Aggregate	Gasoline	65.91173	6853.576406	6853.576	0	1318.762	0	0.024744	0	0.000254	0.024998	8.68E-06	0	7.61E-07	9.44E-06	3.78E-05	0.000234	0.000281	9.44E-06	0	8.27E-07	1.03E-05	0.000151	0.000668	0.000829	14.75661	0	0.074003
Statewide Totals	2030	HHDT	Aggregate	Aggregate	Diesel	343223	46195496.93	46195497	0	5609765	0	75.50232	25.62884	16.97622	118.1074	1.358078	0.011063	0	1.369141	0.452405	1.410341	3.231888	1.419485	0.011563	0	1.431048	1.809621	4.029545	7.270214	72727.33	4962.422	0	0
Statewide Totals	2030	HHDT	Aggregate	Aggregate	Electricity	16761.12	2006822.496	0	2006822	238383.2	3656458	0	0	0	0	0	0	0	0	0.019263	0.033148	0.052411	0	0	0	0	0	0.077051	0.094708	0.171759	0	0	0
Statewide Totals	2030	HHDT	Aggregate	Aggregate	Natural Ga:	21451.33	1326552.027	1326552	0	153757.9	0	0.899335	0.206094	0	1.105429	0.002435	0.000499	0	0.002934	0.01316	0.078796	0.09489	0.002648	0.000543	0	0.00319	0.052642	0.225132	0.280965	1759.434	204.8259	0	0
Statewide Totals	2030	LDA	Aggregate	Aggregate	Gasoline	12575248	492664868.9	4.93E+08	0	58223663	0	15.19966	0	13.10024	28.2999	0.524524	0	0.099422	0.623946	1.086141	1.452719	3.162806	0.570467	0	0.108131	0.678598	4.344563	4.150626	9.173787	138019.4	0	3969.372
Statewide Totals	2030	LDA	Aggregate	Aggregate	Diesel	24084.43	732019.638	732019.6	0	103149.9	0	0.08112	0	0	0.08112	0.00588	0	0	0.00588	0.001614	0.002203	0.009697	0.006146	0	0	0.006146	0.006455	0.006293	0.018895	181.4423	0	0	0
Statewide Totals	2030	LDA	Aggregate	Aggregate	Electricity	1164061	52461375.57	0	52461376	5658628	20254421	0	0	0	0	0	0	0	0	0.115658	0.088693	0.204351	0	0	0	0	0.46263	0.253409	0.71604	0	0	0	0
Statewide Totals	2030	LDA	Aggregate	Aggregate	Plug-in Hyb	490725	21318733.91	9499152	11819582	2029148	3569866	0.069392	0	0.253794	0.323186	0.009945	0	0.003354	0.013299	0.047	0.032805	0.093104	0.010816	0	0.003647	0.014464	0.187999	0.09373	0.296192	3002.553	0	134.5342	0
Statewide Totals	2030	LDT1	Aggregate	Aggregate	Gasoline	1152397	39443600.95	39443601	0	5028510	0	3.990658	0	1.770188	5.760846	0.062172	0	0.012024	0.074195	0.086958	0.143073	0.304226	0.067617	0	0.013077	0.080694	0.347833	0.408779	0.837306	13418.61	0	433.8924	0
Statewide Totals	2030	LDT1	Aggregate	Aggregate	Diesel	24.68469	511.1963881	511.1964	0	80.22073	0	0.000383	0	0	0.000383	5.73E-05	0	0	5.73E-05	1.13E-06	1.91E-06	6.03E-05	5.98E-05	0	0	5.98E-05	4.51E-06	5.45E-06	6.98E-05	0.216444	0	0	0
Statewide Totals	2030	LDT1	Aggregate	Aggregate	Electricity	9083.711	429317.9483	0	429317.9	44803.09	165752.2	0	0	0	0	0	0	0	0	0.000946	0.000724	0.001671	0	0	0	0	0.003786	0.002069	0.005855	0	0	0	0
Statewide Totals	2030	LDT1	Aggregate	Aggregate	Plug-in Hyb	7050.692	335357.9818	138646.1	196711.9	29154.61	59412.86	0.001015	0	0.003642	0.004657	9.56E-05	0	3.14E-05	0.000127	0.000739	0.00052	0.001386	0.000104	0	3.42E-05	0.000138	0.002957	0.001485	0.00458	44.00421	0	2.076708	0
Statewide Totals	2030	LDT2	Aggregate	Aggregate	Gasoline	6843055	268210579.7	2.68E+08	0	31829792	0	13.04311	0	8.928941	21.97205	0.295105	0	0.054456	0.349561	0.591303	0.93762	1.878484	0.320954	0	0.059226	0.38018	2.365214	2.678913	5.424307	91476.6	0	2674.612	0
Statewide Totals	2030	LDT2	Aggregate	Aggregate	Diesel	25220.65	1006193.467	1006193	0	118695.5	0	0.038766	0	0	0.038766	0.004662	0	0	0.004662	0.002218	0.003508	0.010388	0.004873	0	0	0.004873	0.008873	0.010022	0.023768	316.295	0	0	0
Statewide Totals	2030	LDT2	Aggregate	Aggregate	Electricity	119982.6	4012421.603	0	4012422	597712.9	1549126	0	0	0	0	0	0	0	0	0.008846	0.00677	0.015616	0	0	0	0	0	0.035384	0.019343	0.054726	0	0	0	0
Statewide Totals	2030	LDT2	Aggregate	Aggregate	Plug-in Hyb	106489.2	4766713.476	2035727	2730986	440332.9	824839.2	0.014894	0	0.055052	0.069946	0.001704	0	0.000577	0.002281	0.010509	0.007369	0.020159	0.001853	0	0.000628	0.002481	0.042035	0.021055	0.065571	644.891	0	33.9638	0
Statewide Totals	2030	LHDT1	Aggregate	Aggregate	Gasoline	494523.9	18579164.67	18579165	0	7367669	0	2.118353	0.017346	4.385872	6.52157	0.025768	0	0.001833	0.027601	0.04096	0.559105	0.627666	0.028025	0	0.001993	0.030019	0.16384	1.597442	1.791301	14238.57	62.46998	205.5371	0
Statewide Totals	2030	LHDT1	Aggregate	Aggregate	Diesel	361601.4	13321740.12	13321740	0	4548490	0	16.77403	0.679128	0	17.45316	0.399321	0.010423	0	0.409744	0.044054	0.400892	0.854691	0.417377	0.010894	0	0.428271	0.176216	1.145407	1.749894	8257.305	50.75875	0	0
Statewide Totals	2030	LHDT1	Aggregate	Aggregate	Electricity	46756.35	2806052.741	0	2806053	654341.2	1696273	0	0	0	0	0	0	0	0	0.006186	0.042221	0.048408	0	0	0	0	0.024745	0.120633	0.145378	0	0	0	0
Statewide Totals	2030	LHDT2	Aggregate	Aggregate	Gasoline	68456.67	2454718.171	2454718	0	1019902	0	0.232307	0.002377	0.618561	0.853245	0.002862	0	0.000176	0.003038	0.005412	0.086182	0.094632	0.003113	0	0.000191	0.003305	0.021647	0.246234	0.271185	2123.235	10.06743	27.6934	0
Statewide Totals	2030	LHDT2	Aggregate	Aggregate	Diesel	156171.3	5799017.371	5799017	0	1964438	0	5.762773	0.280716	0	6.043488	0.158932	0.004595	0	0.163527	0.019177	0.203595	0.386299	0.166118	0.004802	0	0.170921	0.076708	0.581701	0.82933	4234.997	34.91951	0	0
Statewide Totals	2030	LHDT2	Aggregate	Aggregate	Electricity	11985.53	686911.2688	0	686911.3	158945.3	411562.3	0	0	0	0	0	0	0	0	0.001514	0.012058	0.013573	0	0	0	0	0.006058	0.034452	0.04051	0	0	0	0
Statewide Totals	2030	MCY	Aggregate	Aggregate	Gasoline	709779.3	4090022.284	4090022	0	1419559	0	2.415126	0	0.179129	2.594255	0.00904	0	0.004889	0.013929	0.004508	0.018936	0.037373	0.009682	0	0.00522	0.014903	0.018034	0.054102	0.087038	862.1458	0	70.17645	0
Statewide Totals	2030	MDV	Aggregate	Aggregate	Gasoline	4248540	157637225.9	1.58E+08	0	19446036	0	10.41758	0	6.628545	17.04613	0.175844	0	0.034757	0.210602	0.347531	0.558998	1.11713	0.191247	0	0.037802	0.229048	1.390123	1.597136	3.216308	65966.81	0	2025.533	0
Statewide Totals	2030	MDV	Aggregate	Aggregate	Diesel	61500.63	2209689.375	2209689	0	280163.8	0	0.115171	0	0	0.115171	0.00988	0	0	0.00988	0.004872	0.007979	0.022731	0.010327	0	0	0.010327	0.019486	0.022797	0.05261	945.8427	0	0	0
Statewide Totals	2030	MDV	Aggregate	Aggregate	Electricity	120321.9	3998042.094	0	3998042	598206.5	1543574	0	0	0	0	0	0	0	0	0.008814	0.00675	0.015565	0	0	0	0	0.035257	0.019287	0.054543	0	0	0	0
Statewide Totals	2030	MDV	Aggregate	Aggregate	Plug-in Hyb	66886.52	2911270.131	1249448	1661823	276575.8	501919.9	0.009127	0	0.034578	0.043704	0.001136	0	0.000396	0.001532	0.006418	0.004495	0.012446	0.001236	0	0.000431	0.001667	0.025673	0.012843	0.040183	395.2291	0	26.14524	0
Statewide Totals	2030	MH	Aggregate	Aggregate	Gasoline	63938.37	611241.4189	611241.4	0	6396.395	0	0.152162	0	0.003346	0.155508	0.000778	0	2.19E-06	0.00078	0.002021	0.010384	0.013185	0.000846	0	2.39E-06	0.000848	0.008085	0.029668	0.038602	1251.18	0	0.216043	0
Statewide Totals	2030	MH	Aggregate	Aggregate	Diesel	34816.2	318540.9956	318541	0	3481.62	0	1.270115	0	0	1.270115	0.030155	0	0	0.030155	0.001405	0.005392	0.036951	0.031518	0	0	0.031518	0.005618	0.015405	0.052542	367.3244	0	0	0
Statewide Totals	2030	MHDT	Aggregate	Aggregate	Gasoline	42084.3	2234914.9	2234915	0	842022.6	0	0.487876	0.003639	0.32876	0.820275	0.002711	0	0.000405	0.003116	0.007391	0.037889	0.048396	0.002949	0	0.00044	0.003389	0.029563	0.108255	0.141207	3968.038	24.00236	39.51082	0
Statewide Totals	2030	MHDT	Aggregate	Aggregate	Diesel	295033.9	12086146.95	12086147	0	3540144	0	8.891736	3.235397	5.948512	18.07565	0.085971	0.002878	0	0.088849	0.039968	0.206296	0.335113	0.089858	0.003008	0	0.092866	0.159872	0.589419	0.842157	14346.92	692.8509	0	0
Statewide Totals	2030	MHDT	Aggregate	Aggregate	Electricity	26847.55	1437338.083	0	1437338	343395.2	1538794	0	0	0	0	0	0	0	0	0.004753	0.012261	0.017014	0	0	0	0	0.019013	0.03503	0.054043	0	0	0	0
Statewide Totals	2030	MHDT	Aggregate	Aggregate	Natural Ga:	4028.871	173095.5444	173095.5	0	35568.05	0	0.016626	0.029111	0	0.045737	0.000222	9.12E-05	0	0.000313	0.000572	0.002965	0.00385	0.000241	9.92E-05	0	0.00034	0.00229	0.008472	0.011102	169.8985	24.31729	0	0
Statewide Totals	2030	OBUS	Aggregate	Aggregate	Gasoline	10523.58	418671.522	418671.5	0	210555.8	0	0.166924	0.000683	0.091522	0.259129	0.000461	0	6.64E-05	0.000528	0.001385	0.007154	0.009066	0.000502	0	7.23E-05	0.000574	0.005538	0.020439	0.026551	757.0549	4.287387	7.083222	0
Statewide Totals	2030	OBUS	Aggregate	Aggregate	Diesel	11334.99	744140.2784	744140.3	0	134911.8	0	1.188132	0.128572	0.216808	1.533513	0.022507	0.000136	0	0.022643	0.002461	0.017191	0.042295	0.023525	0.000142	0	0.023667	0.009843	0.049117	0.082628	1058.785	31.58166	0	0
Statewide Totals	2030	OBUS	Aggregate	Aggregate	Electricity	537.1611	43467.50107	0	43467.5	10747.52	47011.73	0	0	0	0	0	0	0	0	0.000144	0.000371	0.000515	0	0	0	0	0.000575	0.001059	0.001634	0	0	0	0
Statewide Totals	2030	OBUS	Aggregate	Aggregate	Natural Ga:	880.2709	48107.03378	48107.03	0	7834.411	0	0.006083	0.00148	0	0.007563	5.6E-05	4.07E-06	0	6.01E-05	0.000159	0.000826	0.001045	6.09E-05	4.43E-06	0	6.53E-05	0.000636	0.00236	0.003061	46.09997	1.157818	0	0
Statewide Totals	2030	SBUS	Aggregate	Aggregate	Gasoline	6765.951	356420.5962	356420.6	0	27063.81	0	0.176103	0.00642	0.023923	0.206446	0.000364	0	1.61E-05	0.00038	0.000786	0.006294	0.00746	0.000396	0	1.75E-05	0.000414	0.003143	0.017983	0.02154	329.5376	19.13234	1.66406	0
Statewide Totals	2030	SBUS	Aggregate	Aggregate	Diesel	17890.55	385614.7266	385614.7	0	259055.2	0	1.418584	0.389653	0.147157	1.955394	0.007978	0.000301	0	0.008279	0.001275	0.006748	0.016302	0.008339	0.000315	0	0.008654	0.005101	0.019279	0.033033	485.0296	43.15459	0	0
Statewide Totals	2030	SBUS	Aggregate	Aggregate	Electricity	1404.81	43250.16124	0	43250.16	17599.6	47293.34	0	0	0	0	0	0	0	0	0.000128	0.000381	0.000509	0	0	0	0	0	0.000514	0.001089	0.001602	0	0	0	0
Statewide Totals	2030	SBUS	Aggregate	Aggregate	Natural Ga:	5149.805	119886.2275	119886.2	0	74569.17	0	0.079692	0.029376	0	0.109069	0.000521	7.75E-05	0	0.000599	0.000396	0.002145	0.00314	0.000567	8.43E-05	0	0.000651	0.001586	0.00613	0.008366	201.623	23.80415	0	0
Statewide Totals	2030	UBUS	Aggregate	Aggregate	Gasoline	2778.167	236786.139	236786.1	0	11112.67	0	0.031416	0	0.007774	0.03919	0.000336	0	6.55E-06	0.000343	0.000628	0.009019	0.00999	0.000366	0	7.13E-06	0.000373	0.002513	0.025769	0.028655	323.2833	0	0.898789	0
Statewide Totals	2030	UBUS	Aggregate	Aggregate	Diesel	2683.331	257542.1705	257542.2	0	10733.32	0	0.100302	0	0	0.100302	0.001861	0	0	0.001861	0.002151	0.010904	0.014916	0.001945	0	0	0.001945	0.008602	0.031154	0.041702	325.9478	0	0	0
Statewide Totals	2030	UBUS	Aggregate	Aggregate	Electricity	2891.442	324715.6013	0	324715.6	11565.77	624445	0	0	0	0	0	0	0	0	0.002869	0.00689	0.009759	0	0	0	0	0	0.011477	0.019687	0.031163	0	0	0	0
Statewide Totals	2030	UBUS	Aggregate	Aggregate	Natural Ga:	6742.175	773872.01	773872	0	26968.7	0	0.202485	0	0	0.202485	0.000446	0	0	0.000446	0.006955	0.032742	0.040142	0.000466	0	0	0.000466	0.027819	0.093547	0.121833	1678.078	0	0	0
Statewide Totals	2031	HHDT	Aggregate	Aggregate	Gasoline	60.56274	6606.389175	6606.389	0	1211.739	0	0.022283	0	0.000146	0.02243	8.19E-06	0	6.06E-07	8.8E-06	3.64E-05	0.000225	0.00027	8.91E-06	0	6.59E-07	9.57E-06	0.000146	0.000642	0.000798	13.987	0	0.066672	0

Statewide Totals	2031	HHDT	Aggregate	Aggregate	Diesel	347000.5	46971559.95	46971560	0	5685306	0	75.22872	25.72903	17.08955	118.0473	1.377084	0.010943	0	1.388027	0.460178	1.443013	3.291219	1.43935	0.011437	0	1.450788	1.840713	4.122895	7.414395	72778.17	4960.488	0
Statewide Totals	2031	HHDT	Aggregate	Aggregate	Electricity	21928.67	2619903.228	0	2619903	310103.2	4773371	0	0	0	0	0	0	0	0	0.025142	0.043405	0.068547	0	0	0	0	0.100567	0.124015	0.224582	0	0	0
Statewide Totals	2031	HHDT	Aggregate	Aggregate	Natural Ga:	21663.67	1335273.22	1335273	0	155662.5	0	0.837002	0.204988	0	1.04199	0.002402	0.000516	0	0.002918	0.013247	0.079246	0.095411	0.002612	0.000562	0	0.003174	0.052988	0.226417	0.282579	1756.424	206.6186	0
Statewide Totals	2031	LDA	Aggregate	Aggregate	Gasoline	12540563	491434775.7	4.91E+08	0	58071999	0	14.48808	0	12.72457	27.21266	0.492148	0	0.094069	0.586217	1.083429	1.451128	3.120774	0.535256	0	0.102308	0.637564	4.333716	4.14608	9.11736	135632.7	0	3891.661
Statewide Totals	2031	LDA	Aggregate	Aggregate	Diesel	21834.04	656416.7712	656416.8	0	93181.97	0	0.066072	0	0	0.066072	0.004813	0	0	0.004813	0.001447	0.001979	0.008239	0.00503	0	0	0.00503	0.005789	0.005653	0.016472	160.486	0	0
Statewide Totals	2031	LDA	Aggregate	Aggregate	Electricity	1231583	54905700.82	0	54905701	5966287	21198132	0	0	0	0	0	0	0	0	0.121046	0.092854	0.2139	0	0	0	0	0.484185	0.265298	0.749483	0	0	0
Statewide Totals	2031	LDA	Aggregate	Aggregate	Plug-in Hyb	506041.5	21740464.9	9575181	12165284	2092482	3674278	0.07	0	0.261737	0.331737	0.009436	0	0.003282	0.012718	0.04793	0.033529	0.094177	0.010263	0	0.003569	0.013833	0.191718	0.095797	0.301348	3028.043	0	137.4957
Statewide Totals	2031	LDT1	Aggregate	Aggregate	Gasoline	1130193	38797045.6	38797046	0	4940596	0	3.430146	0	1.636812	5.066957	0.056256	0	0.011007	0.067263	0.085533	0.140813	0.293609	0.061184	0	0.011971	0.073155	0.342132	0.402323	0.81761	12991.79	0	417.0897
Statewide Totals	2031	LDT1	Aggregate	Aggregate	Diesel	11.86851	357.8140292	357.814	0	46.45637	0	0.000136	0	0	0.000136	1.74E-05	0	0	1.74E-05	7.89E-07	1.26E-06	1.95E-05	1.82E-05	0	0	1.82E-05	3.16E-06	3.6E-06	2.5E-05	0.146543	0	0
Statewide Totals	2031	LDT1	Aggregate	Aggregate	Electricity	10593.34	499091.9128	0	499091.9	52235.62	192690.7	0	0	0	0	0	0	0	0	0.0011	0.000842	0.001942	0	0	0	0	0.004401	0.002406	0.006807	0	0	0
Statewide Totals	2031	LDT1	Aggregate	Aggregate	Plug-in Hyb	8228.023	386393.2044	159235.9	227157.3	34022.88	68608.27	0.001167	0	0.00425	0.005417	0.000105	0	3.5E-05	0.00014	0.000852	0.000599	0.001591	0.000114	0	3.81E-05	0.000152	0.003407	0.001713	0.005272	50.56015	0	2.415649
Statewide Totals	2031	LDT2	Aggregate	Aggregate	Gasoline	6932398	270681334.8	2.71E+08	0	32212705	0	12.31168	0	8.772121	21.0838	0.280794	0	0.052343	0.333137	0.596751	0.948929	1.878816	0.305389	0	0.056928	0.362317	2.387002	2.711225	5.460544	90906.95	0	2660.161
Statewide Totals	2031	LDT2	Aggregate	Aggregate	Diesel	25614.23	1016511.328	1016511	0	120314.7	0	0.038168	0	0	0.038168	0.004681	0	0	0.004681	0.002241	0.003554	0.010476	0.004892	0	0	0.004892	0.008964	0.010154	0.024011	314.9259	0	0
Statewide Totals	2031	LDT2	Aggregate	Aggregate	Electricity	136571.5	4504055.303	0	4504055	677563.1	1738937	0	0	0	0	0	0	0	0	0.00993	0.007603	0.017533	0	0	0	0	0.039719	0.021723	0.061442	0	0	0
Statewide Totals	2031	LDT2	Aggregate	Aggregate	Plug-in Hyb	116581.1	5147380.78	2182653	2964727	482063	895436	0.015981	0	0.060273	0.076254	0.00173	0	0.000602	0.002332	0.011348	0.007972	0.021652	0.001882	0	0.000654	0.002536	0.045392	0.022777	0.070705	691.787	0	36.94847
Statewide Totals	2031	LHDT1	Aggregate	Aggregate	Gasoline	485738.5	18143149.47	18143149	0	7236780	0	1.799812	0.016665	4.200286	6.016763	0.02465	0	0.001659	0.026309	0.039999	0.545984	0.612291	0.026809	0	0.001804	0.028613	0.159995	1.559953	1.748562	13748.74	60.98336	200.8172
Statewide Totals	2031	LHDT1	Aggregate	Aggregate	Diesel	355123.5	12977919.25	12977919	0	4467007	0	14.93833	0.643912	0	15.58224	0.368505	0.010204	0	0.378708	0.042917	0.390546	0.812171	0.385167	0.010665	0	0.395832	0.171668	1.115845	1.683346	8011.828	49.47508	0
Statewide Totals	2031	LHDT1	Aggregate	Aggregate	Electricity	61871.89	3627645.465	0	3627645	865911	2193564	0	0	0	0	0	0	0	0	0.007998	0.054584	0.062581	0	0	0	0	0.03199	0.155953	0.187943	0	0	0
Statewide Totals	2031	LHDT2	Aggregate	Aggregate	Gasoline	66841.46	2381122.903	2381123	0	995838.1	0	0.200943	0.002264	0.588417	0.791624	0.002749	0	0.000159	0.002908	0.005249	0.083598	0.091756	0.00299	0	0.000173	0.003163	0.020998	0.238851	0.263012	2036.995	9.773681	26.90143
Statewide Totals	2031	LHDT2	Aggregate	Aggregate	Diesel	155345.1	5698025.306	5698025	0	1954046	0	5.33209	0.270543	0	5.602633	0.151426	0.00455	0	0.155976	0.018843	0.20005	0.374869	0.158272	0.004756	0	0.163028	0.075372	0.571571	0.809971	4137.831	34.52143	0
Statewide Totals	2031	LHDT2	Aggregate	Aggregate	Electricity	15860.33	888740.4637	0	888740.5	210301.7	532548.4	0	0	0	0	0	0	0	0	0.001959	0.015601	0.017561	0	0	0	0	0.007837	0.044575	0.052412	0	0	0
Statewide Totals	2031	MCY	Aggregate	Aggregate	Gasoline	711562.7	4088067.239	4088067	0	1423125	0	2.377039	0	0.171973	2.549012	0.009062	0	0.00482	0.013881	0.004506	0.018927	0.037314	0.009709	0	0.00515	0.01486	0.018025	0.054076	0.086961	860.2744	0	69.04725
Statewide Totals	2031	MDV	Aggregate	Aggregate	Gasoline	4263604	157916618.5	1.58E+08	0	19509442	0	9.585274	0	6.366325	15.9516	0.166761	0	0.033233	0.199994	0.348147	0.561322	1.109463	0.181368	0	0.036144	0.217512	1.392587	1.603778	3.213877	65006.83	0	1995.177
Statewide Totals	2031	MDV	Aggregate	Aggregate	Diesel	60486.98	2155583.384	2155583	0	274814.5	0	0.099255	0	0	0.099255	0.008653	0	0	0.008653	0.004752	0.007806	0.021211	0.009044	0	0	0.009044	0.019009	0.022303	0.050355	909.0293	0	0
Statewide Totals	2031	MDV	Aggregate	Aggregate	Electricity	134662.7	4408375.243	0	4408375	666549.5	1701997	0	0	0	0	0	0	0	0	0.009719	0.007447	0.017166	0	0	0	0	0.038875	0.021278	0.060153	0	0	0
Statewide Totals	2031	MDV	Aggregate	Aggregate	Plug-in Hyb	72991.05	3138004.774	1335846	1802159	301818	544305.7	0.009766	0	0.037735	0.047502	0.001139	0	0.000408	0.001547	0.006918	0.004855	0.01332	0.001239	0	0.000444	0.001683	0.027672	0.013871	0.043226	422.8079	0	28.31771
Statewide Totals	2031	MH	Aggregate	Aggregate	Gasoline	61504.44	593464.2782	593464.3	0	6152.904	0	0.135484	0	0.003254	0.138738	0.000743	0	2.07E-06	0.000745	0.001963	0.010081	0.012789	0.000808	0	2.25E-06	0.00081	0.00785	0.028803	0.037464	1214.413	0	0.207162
Statewide Totals	2031	MH	Aggregate	Aggregate	Diesel	34607.72	315632.5295	315632.5	0	3460.772	0	1.219852	0	0	1.219852	0.028354	0	0	0.028354	0.001392	0.005342	0.035088	0.029636	0	0	0.029636	0.005567	0.015263	0.050466	364.026	0	0
Statewide Totals	2031	MHDT	Aggregate	Aggregate	Gasoline	40729.54	2142428.607	2142429	0	814916.7	0	0.417718	0.003454	0.311532	0.732704	0.002616	0	0.00039	0.003006	0.007085	0.036323	0.046414	0.002845	0	0.000424	0.003269	0.028339	0.103781	0.13539	3773.357	23.06685	37.81097
Statewide Totals	2031	MHDT	Aggregate	Aggregate	Diesel	293727.2	11930553.81	11930554	0	3526137	0	8.132142	3.099415	5.805614	17.03717	0.078203	0.00242	0	0.080622	0.039454	0.203625	0.323701	0.081739	0.002529	0	0.084268	0.157814	0.581785	0.823867	14070.88	684.1864	0
Statewide Totals	2031	MHDT	Aggregate	Aggregate	Electricity	36968.55	1961509.242	0	1961509	472665.4	2098497	0	0	0	0	0	0	0	0	0.006487	0.016731	0.023218	0	0	0	0	0.025946	0.047803	0.073749	0	0	0
Statewide Totals	2031	MHDT	Aggregate	Aggregate	Natural Ga:	4121.584	174020.1267	174020.1	0	36499.21	0	0.016224	0.029698	0	0.045922	0.000225	9.42E-05	0	0.00032	0.000575	0.002981	0.003876	0.000245	0.000102	0	0.000348	0.002302	0.008517	0.011166	170.4111	24.86073	0
Statewide Totals	2031	OBUS	Aggregate	Aggregate	Gasoline	10126.06	392498.0015	392498	0	202602.2	0	0.147797	0.000648	0.08765	0.236094	0.000439	0	6.4E-05	0.000503	0.001298	0.006706	0.008507	0.000478	0	6.96E-05	0.000548	0.005192	0.019159	0.024898	704.1378	4.1087	6.786999
Statewide Totals	2031	OBUS	Aggregate	Aggregate	Diesel	11440.12	747577.6993	747577.7	0	136137.6	0	1.159371	0.125389	0.212491	1.497251	0.021695	0.000129	0	0.021825	0.002472	0.017334	0.041631	0.022676	0.000135	0	0.022811	0.009889	0.049526	0.082226	1055.25	31.56567	0
Statewide Totals	2031	OBUS	Aggregate	Aggregate	Electricity	707.9352	56602.17826	0	56602.18	14164.37	61220.23	0	0	0	0	0	0	0	0	0.000187	0.000483	0.00067	0	0	0	0	0.000749	0.00138	0.002128	0	0	0
Statewide Totals	2031	OBUS	Aggregate	Aggregate	Natural Ga:	894.8859	48478.72754	48478.73	0	7964.484	0	0.005952	0.001502	0	0.007453	5.73E-05	4.2E-06	0	6.15E-05	0.00016	0.000832	0.001054	6.24E-05	4.57E-06	0	6.69E-05	0.000641	0.002378	0.003086	46.10633	1.173597	0
Statewide Totals	2031	SBUS	Aggregate	Aggregate	Gasoline	6741.307	354299.6402	354299.6	0	26965.23	0	0.16107	0.006339	0.024239	0.191648	0.000362	0	1.6E-05	0.000378	0.000781	0.006257	0.007416	0.000393	0	1.74E-05	0.000411	0.003124	0.017877	0.021413	326.5997	19.01225	1.644547
Statewide Totals	2031	SBUS	Aggregate	Aggregate	Diesel	17439.99	374804.1378	374804.1	0	252531	0	1.238433	0.357906	0.148445	1.744785	0.007126	0.00026	0	0.007386	0.001239	0.006557	0.015183	0.007448	0.000272	0	0.00772	0.004958	0.018735	0.031413	469.0962	41.74948	0
Statewide Totals	2031	SBUS	Aggregate	Aggregate	Electricity	1878.904	57865.95804	0	57865.96	23590.17	63267.44	0	0	0	0	0	0	0	0	0.000172	0.00051	0.000682	0	0	0	0	0.000688	0.001456	0.002145	0	0	0
Statewide Totals	2031	UBUS	Aggregate	Aggregate	Gasoline	2634.319	228524.3214	228524.3	0	10537.28	0	0.02972	0	0.007058	0.036778	0.000323	0	5.85E-06	0.000329	0.0006	0.008662	0.009591	0.000351	0	6.36E-06	0.000358	0.0024	0.02475	0.027507	303.9287	0	0.815456
Statewide Totals	2031	UBUS	Aggregate	Aggregate	Diesel	2393.267	223661.6241	223661.6	0	9573.067	0	0.085359	0	0	0.085359	0.001569	0	0	0.001569	0.001842	0.009466	0.012877	0.00164	0	0	0.00164	0.007368	0.027045	0.036054	283.4087	0	0
Statewide Totals	2031	UBUS	Aggregate	Aggregate	Electricity	4240.531	502439.4354	0	502439.4	16962.12	972982.5	0	0	0	0	0	0	0	0	0.004459	0.010662	0.01512	0	0	0	0	0.017834	0.030461	0.048296	0	0	0
Statewide Totals	2031	UBUS	Aggregate	Aggregate	Natural Ga:	5931.018	649261.4641	649261.5	0	23724.07	0	0.087853	0	0	0.087853	0.000413	0	0	0.000413	0.00579	0.027453	0.033656	0.000432	0	0	0.000432	0.023162	0.078436	0.102029	1343.022	0	0
Statewide Totals	2032	HHDT	Aggregate	Aggregate	Gasoline	55.98142	6360.930197	6360.93	0	1120.076	0	0.020078	0	0.000142	0.02022	7.83E-06	0	5.42E-07	8.37E-06	3.51E-05	0.000216	0.00026	8.51E-06	0	5.9E-07	9.1E-06	0.00014	0.000618	0.000768	13.25293	0	0.060561
Statewide Totals	2032	HHDT	Aggregate	Aggregate	Diesel	350357.3	47743653.07	47743653	0	5756980	0	75.02926	25.85224	17.1982	118.0797	1.394683	0.010905	0	1.405587	0.467923	1.475468	3.348978	1.457744	0.011398	0	1.469142	1.871693	4.215622	7.556457	72897.4	4963.733	0
Statewide Totals	2032	HHDT	Aggregate	Aggregate	Electricity	27534.57	3291709.671	0	3291710	387113.3	5996701	0	0	0	0	0	0	0	0	0.031588	0.054646	0.086235	0	0	0	0	0.126353	0.156132	0.282485	0	0	0
Statewide Totals	2032	HHDT	Aggregate	Aggregate	Natural Ga:	21783.68	1339797.769	1339798	0	156902.1	0	0.778873	0.203097	0	0.981969	0.002376	0.000532	0	0.002908	0.013292	0.079396	0.095596	0.002584	0.000579	0	0.003163	0.053167	0.226846	0.283176	1748.737	207.5867	0
Statewide Totals	2032	LDA	Aggregate	Aggregate	Gasoline	12513071	490567212.3	4.91E+08	0	57960126	0	13.88318	0	12.39187	26.27505	0.46178	0	0.08878	0.55056	1.081516	1.450213	3.082289	0.502228	0	0.096557	0.598784	4.326065	4.143465	9.068315	133574.3	0	3822.233
Statewide Totals	2032	LDA	Aggregate	Aggregate	Diesel	19400.61	587561.6492	587561.6	0	83142.75	0	0.051479	0	0	0.051479	0.003499	0	0	0.003499	0.001295	0.001772	0.006567	0.003658	0	0	0.003658	0.005181	0.005063	0.013903	141.3	0	0
Statewide Totals	2032	LDA	Aggregate	Aggregate	Electricity	1294474	57108549.27	0	57108549	6250316	22048613	0	0	0	0	0	0	0	0	0.125903	0.096607	0.22251	0	0	0	0	0.503611	0.276019	0.77963	0	0	0
Statewide Totals	2032	LDA	Aggregate	Aggregate	Plug-in Hyb	519689	22099228.16	9630241	12468987	2148914	3766006	0.07044	0	0.268817	0.339256	0.00894	0	0.0032	0.01214	0.04872	0.034145	0.095005	0.009723	0	0.003481	0.013203	0.194882	0.097556	0.305642	3046.537	0	140.0193
Statewide Totals	2032	LDT1	Aggregate	Aggregate	Gasoline	1110385	38222875.08	38222875	0	4862361	0	2.96038	0	1.521736	4.482116	0.051093	0	0.010105	0.061197	0.084267	0.138728	0.284192	0.055568	0	0.01099	0.066557	0.337068	0.396367	0.799992	12611.25	0	402.0627
Statewide Totals	2032	LDT1	Aggregate	Aggregate	Diesel	8.363498	316.3781991	316.3782	0	37.76415	0	5.17E-05	0	0	5.17E-05	4.61E-06	0	0	4.61E-06	6.97E-07	1.09E-06	6.4E-06	4.82E-06	0	0	4.82E-06	2.79E-06	3.12E-06	1.07E-05	0.126739	0	0
Statewide Totals	2032	LDT1	Aggregate	Aggregate	Electricity	12077.04	565138.4354	0	565138.4	59463.4	218190.1	0	0	0	0	0	0	0	0	0.001246	0.000954	0.0022	0	0	0	0	0.004984	0.002725	0.007709	0	0	0
Statewide Totals	2032	LDT1	Aggregate	Aggregate	Plug-in Hyb	9382.133	434591.9295	178676.2	255915.7	38795.12	77294.17	0.00131	0	0.004847	0.006156	0.000113	0	3.85E-05	0.000152	0.000958	0.000675	0.001785	0.000123	0	4.19E-05	0.000165	0.003832	0.001928	0.005926	56.74489	0	2.747776
Statewide Totals	2032	LDT2	Aggregate	Aggregate	Gasoline	7015203	272901844.5	2.73E+08	0	32565470	0	11.66839	0	8.641374	20.30977	0.266913	0	0.050196	0.317109	0.601646	0.958549	1.877304	0.290292	0	0.054593	0.344885	2.406584	2.73871	5.490179	90374.06	0	2646.21
Statewide Totals	2032	LDT2	Aggregate	Aggregate	Diesel	25949.95	1025232.606	1025233	0	121699.8	0	0.037583	0	0	0.037583	0.004682	0	0	0.004682	0.00226	0.003591	0.010533	0.004894	0	0	0.004894	0.009041	0.01026	0.024195	313.3615	0	0
Statewide Totals	2032	LDT2	Aggregate	Aggregate	Electricity	152701.1	4963882.116	0	4963882	754357.4	1916468	0	0	0	0	0	0	0	0	0.010943	0.008383	0.019327	0	0	0	0	0.043774	0.023952	0.067726	0	0	0
Statewide Totals	2032	LDT2	Aggregate	Aggregate	Plug-in Hyb	126250.8	5499468.081	2317920	3181548	522047.1	960922.4	0.016979	0	0.065276	0.082256	0.001751	0	0.000623	0.002374	0.012124	0.008529	0.023027	0.001904	0	0.000678	0.002582	0.048497	0.024368	0.075447	734.8659	0	39.79488
Statewide Totals	2032	LHDT1	Aggregate	Aggregate	Gasoline	476761.8	17668331.72	17668332	0	7103041	0	1.537865	0.016022	4.025583	5.57947	0.02363	0	0.001518	0.025148	0.038952	0.531695	0.595795	0.0257	0	0.001651	0.02735	0.155808	1.519128	1.702287	13257.67	59.51993	196.06
Statewide Totals	2032	LHDT1	Aggregate	Aggregate	Diesel	348448.2	12612971.34	12612971	0	4383040	0	13.29408	0.61079	0	13.90487	0.342654	0.010012	0	0.352667	0.04171	0.379563	0.77394	0.358147	0.010465	0	0.368613	0.166841	1.084467	1.61992	7755.08	48.20434	0
Statewide Totals	2032	LHDT1	Aggregate	Aggregate	Electricity	79171.97	4540717.871	0	4540718	1108044	2746448	0	0	0	0	0	0	0	0	0.010011	0.068322	0.078333	0	0	0	0	0.040042	0.195206	0.235248	0	0	0
Statewide Totals	2032	LHDT2	Aggregate	Aggregate	Gasoline	65104.57	2302564.976	2302565	0	969961.1	0	0.173532	0.002151	0.557872	0.733555	0.002639	0	0.000145	0.002783	0.005076	0.08084	0.088699	0.00287	0	0.000157	0.003027	0.020305	0.230971	0.254303	1949.5	9.466764	26.07132
Statewide Totals	2032	LHDT2	Aggregate	Aggregate	Diesel	154061.5	5578491.804	5578492	0	1937900	0	4.926658	0.260327	0	5.186986	0.144446	0.004505	0	0.148951	0.018448	0.195853	0.363252	0.150977	0.004709	0	0.155686	0.073791	0.55958	0.789057	4029.984	34.04053	0
Statewide Totals	2032	LHDT2	Aggregate	Aggregate	Electricity	20297.79	1113413.067	0	1113413	269099.3	667256.1	0	0	0	0	0	0	0	0	0.002455	0.019545	0.022	0	0	0	0	0.009819	0.055843	0.065662	0	0	0
Statewide Totals	2032	MCY	Aggregate	Aggregate	Gasoline	714182.7	4087750.141	4087750	0	1428365	0	2.34441	0	0.165892	2.510302	0.009097	0	0.004782	0.013879	0.004506	0.018925	0.03731	0.009749	0	0.005114	0.014863	0.018024	0.054072	0.086959	858.9862	0	68.14939
Statewide Totals	2032	MDV	Aggregate	Aggregate	Gasoline	4280151	158225210.8	1.58E+08	0	19578508	0	8.889888	0	6.15044	15.04033	0.158246	0	0.031762	0.190007	0.348827	0.563504	1.102339	0.172106	0	0.034544	0.20665	1.395308	1.610013	3.211971	64165.47	0	1968.411
Statewide Totals	2032	MDV	Aggregate	Aggregate	Diesel	59459.3	2103429.035	2103429	0	269393.2	0	0.087553	0	0	0.087553	0.007798	0	0	0.007798	0.004637	0.007632	0.020067	0.00815	0	0	0.00815	0.018549	0.021807	0.048506	874.3018	0	0
Statewide Totals	2032	MDV	Aggregate	Aggregate	Electricity	148523.7	4789759.004	0	4789759	731886.7	1849242	0	0	0	0	0	0	0	0	0.01056	0.008096	0.018656	0	0	0	0	0.042238	0.023132	0.06537	0	0	0
Statewide Totals	2032	MDV	Aggregate	Aggregate	Plug-in Hyb	78821.48	3347219.82	1415211	1932009	325926.8	583524.3	0.010352	0	0.040752	0.051104	0.001139	0	0.000418	0.001557	0.007379	0.005187	0.014123	0.001239	0	0.000454	0.001694	0.029517	0.014819	0.04603	448.1034	0	30.38234
Statewide Totals	2032	MH	Aggregate	Aggregate	Gasoline	59280.35	577501.9315	577501.9	0	5930.407	0	0.120783	0	0.003166	0.123949	0.000718	0	2E-06	0.00072	0.00191	0.009809	0.012439	0.000781	0	2.17E-06	0.000783	0.007639	0.028026	0.036448	1181.392	0	0.199067
Statewide Totals	2032	MH	Aggregate	Aggregate	Diesel	34415.07	313036.4651	313036.5	0	3441.507	0	1.172329	0	0	1.172329	0.026627	0	0	0.026627	0.00138	0.005298	0.033305	0.027831	0	0	0.027831	0.005521	0.015136	0.048488	361.0918	0	0
Statewide Totals	2032	MHDT	Aggregate	Aggregate	Gasoline	39349.17	2049085.4	2049085	0	787298.2	0	0.363155	0.003274	0.296563	0.662992	0.002517	0	0.000374	0.002891	0.006776	0.034743	0.04441	0.002737	0	0.000407	0.003144	0.027105	0.099265	0.129514	3580.993	22.12951	36.15178
Statewide Totals	2032	MHDT	Aggregate	Aggregate	Diesel	291109.3	11750779.41	11750779	0	3496043	0	7.466661	2.9649	5.64676	16.07832	0.0716	0.002078	0	0.073678	0.038859	0.200537	0.313074	0.074837	0.002172	0	0.077009	0.155436	0.572963	0.805409	13767.46	672.7027	0
Statewide Totals	2032	MHDT	Aggregate	Aggregate	Electricity	47843.53	2522016.723	0	2522017	611809.6	2696879	0	0	0	0	0	0	0	0	0.00834	0.021511	0.029851	0	0	0	0	0.033361	0.061461	0.094822	0	0	0
Statewide Totals	2032	MHDT	Aggregate	Aggregate	Natural Ga:	4179.868	173803.6201	173803.6	0	37086.85	0	0.015743	0.030051	0	0.045794	0.000228	9.64E-05	0	0.000324	0.000575	0.002977	0.003876	0.000248	0.000105	0	0.000352	0.002299	0.008506	0.011158	169.8116	25.20797	0

Statewide Totals	2032	OBUS	Aggregate	Aggregate	Gasoline	9730.306	367608.3028	367608.3	0	194684	0	0.128983	0.000614	0.083874	0.213472	0.000418	0	6.17E-05	0.000479	0.001216	0.00628	0.007975	0.000454	0	6.71E-05	0.000521	0.004863	0.017942	0.023326	654.4163	3.932391	6.502267
Statewide Totals	2032	OBUS	Aggregate	Aggregate	Diesel	11516.04	750967.4852	750967.5	0	136943.7	0	1.122659	0.121699	0.20742	1.451778	0.020826	0.000124	0	0.020949	0.002483	0.017472	0.040905	0.021767	0.000129	0	0.021896	0.009934	0.049921	0.081751	1052.638	31.39868	0
Statewide Totals	2032	OBUS	Aggregate	Aggregate	Electricity	889.4259	70179.93448	0	70179.93	17795.63	75909.14	0	0	0	0	0	0	0	0	0.000232	0.000599	0.000831	0	0	0	0	0.000928	0.00171	0.002639	0	0	0
Statewide Totals	2032	OBUS	Aggregate	Aggregate	Natural Ga:	907.7988	48856.89616	48856.9	0	8079.41	0	0.005844	0.001521	0	0.007365	5.86E-05	4.32E-06	0	6.29E-05	0.000162	0.000839	0.001063	6.37E-05	4.7E-06	0	6.84E-05	0.000646	0.002396	0.003111	46.14775	1.187046	0
Statewide Totals	2032	SBUS	Aggregate	Aggregate	Gasoline	6689.256	350722.8867	350722.9	0	26757.02	0	0.13997	0.006236	0.024457	0.170662	0.000357	0	1.59E-05	0.000373	0.000773	0.006194	0.007341	0.000389	0	1.73E-05	0.000406	0.003093	0.017698	0.021197	322.2526	18.81184	1.616211
Statewide Totals	2032	SBUS	Aggregate	Aggregate	Diesel	16968.41	363433.0661	363433.1	0	245702.5	0	1.065638	0.326182	0.149495	1.541315	0.006287	0.000222	0	0.00651	0.001202	0.006357	0.014069	0.006571	0.000232	0	0.006804	0.004807	0.018164	0.029775	452.5323	40.28189	0
Statewide Totals	2032	SBUS	Aggregate	Aggregate	Electricity	2398.551	73813.0264	0	73813.03	30164.05	80700.14	0	0	0	0	0	0	0	0	0.00022	0.00065	0.00087	0	0	0	0	0.000879	0.001858	0.002737	0	0	0
Statewide Totals	2032	SBUS	Aggregate	Aggregate	Natural Ga:	5313.42	120289.8621	120289.9	0	76938.32	0	0.076327	0.030253	0	0.10658	0.000523	8.13E-05	0	0.000604	0.000398	0.002153	0.003155	0.000569	8.84E-05	0	0.000657	0.001591	0.00615	0.008399	200.5961	24.58266	0
Statewide Totals	2032	UBUS	Aggregate	Aggregate	Gasoline	2605.541	226840.1564	226840.2	0	10422.17	0	0.030852	0	0.007066	0.037918	0.00032	0	5.67E-06	0.000326	0.000593	0.008585	0.009504	0.000348	0	6.17E-06	0.000354	0.002374	0.024527	0.027255	299.156	0	0.795448
Statewide Totals	2032	UBUS	Aggregate	Aggregate	Diesel	2027.51	184017.1067	184017.1	0	8110.04	0	0.06954	0	0	0.06954	0.001289	0	0	0.001289	0.001501	0.007783	0.010573	0.001347	0	0	0.001347	0.006003	0.022238	0.029589	230.0842	0	0
Statewide Totals	2032	UBUS	Aggregate	Aggregate	Electricity	4956.48	579038.6821	0	579038.7	19825.92	1110491	0	0	0	0	0	0	0	0	0.005112	0.012287	0.017399	0	0	0	0	0.020447	0.035105	0.055553	0	0	0
Statewide Totals	2032	UBUS	Aggregate	Aggregate	Natural Ga:	5713.476	624948.4178	624948.4	0	22853.91	0	0.072343	0	0	0.072343	0.000422	0	0	0.000422	0.005573	0.02642	0.032415	0.000441	0	0	0.000441	0.022293	0.075486	0.098219	1294.677	0	0
Statewide Totals	2033	HHDT	Aggregate	Aggregate	Gasoline	52.83437	6139.812658	6139.813	0	1057.11	0	0.018728	0	9.17E-05	0.018819	7.56E-06	0	5.06E-07	8.06E-06	3.38E-05	0.000209	0.000251	8.22E-06	0	5.51E-07	8.77E-06	0.000135	0.000596	0.00074	12.61736	0	0.056003
Statewide Totals	2033	HHDT	Aggregate	Aggregate	Diesel	353488.5	48559935.73	48559936	0	5828242	0	74.9231	26.00085	17.31581	118.2398	1.415033	0.010883	0	1.425916	0.476121	1.508107	3.410144	1.479014	0.011375	0	1.49039	1.904483	4.308878	7.70375	73166.45	4974.739	0
Statewide Totals	2033	HHDT	Aggregate	Aggregate	Electricity	33416.03	3969000.049	0	3969000	466080.1	7231420	0	0	0	0	0	0	0	0	0.038072	0.065976	0.104047	0	0	0	0	0.152287	0.188502	0.340789	0	0	0
Statewide Totals	2033	HHDT	Aggregate	Aggregate	Natural Ga:	21814.14	1340502.418	1340502	0	157576.5	0	0.726976	0.200751	0	0.927727	0.002351	0.000546	0	0.002897	0.013299	0.079228	0.095424	0.002557	0.000594	0	0.003151	0.053195	0.226364	0.282711	1734.151	207.8219	0
Statewide Totals	2033	LDA	Aggregate	Aggregate	Gasoline	12494333	490044152.4	4.9E+08	0	57890194	0	13.37925	0	12.10265	25.48191	0.433888	0	0.083735	0.517623	1.080363	1.450452	3.048438	0.471893	0	0.091069	0.562962	4.321453	4.144148	9.028563	131843.2	0	3761.364
Statewide Totals	2033	LDA	Aggregate	Aggregate	Diesel	17624.42	529930.3195	529930.3	0	75265.69	0	0.043067	0	0	0.043067	0.002939	0	0	0.002939	0.001168	0.0016	0.005707	0.003072	0	0	0.003072	0.004673	0.004571	0.012316	125.5601	0	0
Statewide Totals	2033	LDA	Aggregate	Aggregate	Electricity	1352656	59079946.29	0	59079946	6510777	22809735	0	0	0	0	0	0	0	0	0.130249	0.099967	0.230216	0	0	0	0	0.520996	0.285621	0.806617	0	0	0
Statewide Totals	2033	LDA	Aggregate	Aggregate	Plug-in Hyb	531720.2	22401137.64	9667491	12733647	2198663	3845941	0.070777	0	0.275059	0.345836	0.008466	0	0.003111	0.011577	0.049386	0.034671	0.095634	0.009208	0	0.003383	0.012591	0.197544	0.09906	0.309195	3060.314	0	142.1321
Statewide Totals	2033	LDT1	Aggregate	Aggregate	Gasoline	1093114	37726555.22	37726555	0	4794438	0	2.576799	0	1.423906	4.000704	0.046623	0	0.0093	0.055923	0.083173	0.137021	0.276117	0.050707	0	0.010115	0.060821	0.332691	0.391488	0.785001	12278.1	0	388.8066
Statewide Totals	2033	LDT1	Aggregate	Aggregate	Diesel	8.644749	327.8772313	327.8772	0	39.15701	0	4.7E-05	0	0	4.7E-05	4.28E-06	0	0	4.28E-06	7.23E-07	1.14E-06	6.14E-06	4.47E-06	0	0	4.47E-06	2.89E-06	3.24E-06	1.06E-05	0.130399	0	0
Statewide Totals	2033	LDT1	Aggregate	Aggregate	Electricity	13532.96	627510.1293	0	627510.1	66479.13	242270.7	0	0	0	0	0	0	0	0	0.001383	0.00106	0.002443	0	0	0	0	0.005534	0.003027	0.008561	0	0	0
Statewide Totals	2033	LDT1	Aggregate	Aggregate	Plug-in Hyb	10509.25	479961.3845	196968.1	282993.3	43455.76	85472.42	0.001445	0	0.005429	0.006874	0.000121	0	4.19E-05	0.000163	0.001058	0.000746	0.001967	0.000132	0	4.56E-05	0.000177	0.004233	0.002132	0.006542	62.581	0	3.07198
Statewide Totals	2033	LDT2	Aggregate	Aggregate	Gasoline	7089141	274843228.8	2.75E+08	0	32880364	0	11.07404	0	8.525521	19.59956	0.253371	0	0.047975	0.301346	0.605926	0.967506	1.874778	0.275564	0	0.052178	0.327741	2.423704	2.764304	5.515749	89871.35	0	2631.866
Statewide Totals	2033	LDT2	Aggregate	Aggregate	Diesel	26250.86	1033032.899	1033033	0	122940	0	0.037214	0	0	0.037214	0.004703	0	0	0.004703	0.002277	0.003626	0.010606	0.004916	0	0	0.004916	0.00911	0.01036	0.024385	311.9333	0	0
Statewide Totals	2033	LDT2	Aggregate	Aggregate	Electricity	168288.6	5391603.061	0	5391603	827777.1	2081604	0	0	0	0	0	0	0	0	0.011886	0.00911	0.020996	0	0	0	0	0.047546	0.026028	0.073573	0	0	0
Statewide Totals	2033	LDT2	Aggregate	Aggregate	Plug-in Hyb	135411.7	5821909.512	2441025	3380884	559927.3	1021128	0.017894	0	0.070017	0.087911	0.001765	0	0.000642	0.002407	0.012835	0.009041	0.024283	0.00192	0	0.000698	0.002618	0.05134	0.02583	0.079789	774.2552	0	42.47643
Statewide Totals	2033	LHDT1	Aggregate	Aggregate	Gasoline	466482.4	17139587.59	17139588	0	6949893	0	1.387901	0.01537	3.827444	5.230715	0.022509	0	0.001362	0.023871	0.037786	0.515783	0.57744	0.024481	0	0.001481	0.025962	0.151145	1.473667	1.650773	12735.42	57.92794	191.1064
Statewide Totals	2033	LHDT1	Aggregate	Aggregate	Diesel	340889.5	12215381.62	12215382	0	4287961	0	11.77566	0.577856	0	12.35352	0.318969	0.0098	0	0.328769	0.040395	0.367599	0.736763	0.333391	0.010243	0	0.343634	0.161582	1.050282	1.555498	7477.471	46.84043	0
Statewide Totals	2033	LHDT1	Aggregate	Aggregate	Electricity	98631.91	5539948.044	0	5539948	1380391	3352455	0	0	0	0	0	0	0	0	0.012213	0.083357	0.095571	0	0	0	0	0.048854	0.238163	0.287017	0	0	0
Statewide Totals	2033	LHDT2	Aggregate	Aggregate	Gasoline	63310.08	2220750.952	2220751	0	943225.8	0	0.153089	0.002042	0.527608	0.682739	0.002537	0	0.000133	0.002671	0.004896	0.077967	0.085534	0.00276	0	0.000145	0.002904	0.019584	0.222764	0.245252	1860.355	9.156903	25.24247
Statewide Totals	2033	LHDT2	Aggregate	Aggregate	Diesel	152384.6	5443006.309	5443006	0	1916806	0	4.559426	0.25021	0	4.809636	0.138125	0.004448	0	0.142573	0.018	0.191096	0.351669	0.14437	0.004649	0	0.149019	0.071999	0.54599	0.767008	3911.256	33.49357	0
Statewide Totals	2033	LHDT2	Aggregate	Aggregate	Electricity	25288.32	1359523.936	0	1359524	335210	815022.5	0	0	0	0	0	0	0	0	0.002997	0.023866	0.026863	0	0	0	0	0.011989	0.068187	0.080176	0	0	0
Statewide Totals	2033	MCY	Aggregate	Aggregate	Gasoline	717651.8	4089315.763	4089316	0	1435304	0	2.317567	0	0.161128	2.478695	0.00919	0	0.004861	0.014051	0.004508	0.018932	0.037491	0.00985	0	0.0052	0.01505	0.018031	0.054092	0.087173	858.4497	0	67.50993
Statewide Totals	2033	MDV	Aggregate	Aggregate	Gasoline	4297289	158554129.9	1.59E+08	0	19650263	0	8.2925	0	5.971701	14.2642	0.150216	0	0.03031	0.180526	0.349552	0.565886	1.095964	0.163374	0	0.032965	0.196339	1.398209	1.616817	3.211365	63440.25	0	1944.611
Statewide Totals	2033	MDV	Aggregate	Aggregate	Diesel	58416.97	2054939.955	2054940	0	264067	0	0.077895	0	0	0.077895	0.007035	0	0	0.007035	0.00453	0.007469	0.019034	0.007353	0	0	0.007353	0.018121	0.021339	0.046813	842.5258	0	0
Statewide Totals	2033	MDV	Aggregate	Aggregate	Electricity	161847.7	5142228.696	0	5142229	794004.7	1985325	0	0	0	0	0	0	0	0	0.011337	0.008696	0.020033	0	0	0	0	0.045347	0.024847	0.070194	0	0	0
Statewide Totals	2033	MDV	Aggregate	Aggregate	Plug-in Hyb	84408.02	3540949.941	1488545	2052405	349027.2	619887.6	0.010898	0	0.043643	0.054541	0.001139	0	0.000427	0.001565	0.007806	0.005495	0.014867	0.001238	0	0.000464	0.001702	0.031226	0.0157	0.048628	471.6076	0	32.35494
Statewide Totals	2033	MH	Aggregate	Aggregate	Gasoline	57366.81	564080.3739	564080.4	0	5738.976	0	0.108127	0	0.003086	0.111212	0.000697	0	1.94E-06	0.000699	0.001865	0.009579	0.012143	0.000758	0	2.11E-06	0.00076	0.007462	0.027367	0.035589	1153.576	0	0.192112
Statewide Totals	2033	MH	Aggregate	Aggregate	Diesel	34190.62	310445.4789	310445.5	0	3419.062	0	1.125175	0	0	1.125175	0.024944	0	0	0.024944	0.001369	0.005252	0.031565	0.026071	0	0	0.026071	0.005475	0.015007	0.046554	358.0364	0	0
Statewide Totals	2033	MHDT	Aggregate	Aggregate	Gasoline	37931.28	1954515.061	1954515	0	758929.1	0	0.316711	0.003097	0.282277	0.602085	0.002411	0	0.000359	0.00277	0.006463	0.033132	0.042366	0.002622	0	0.00039	0.003013	0.025854	0.094664	0.12353	3389.894	21.18382	34.49929
Statewide Totals	2033	MHDT	Aggregate	Aggregate	Diesel	287220.6	11547153.33	11547153	0	3450479	0	6.867019	2.83031	5.47085	15.16818	0.06607	0.001795	0	0.067866	0.038186	0.196999	0.30305	0.069058	0.001877	0	0.070934	0.152743	0.562853	0.78653	13437.94	658.437	0
Statewide Totals	2033	MHDT	Aggregate	Aggregate	Electricity	59647.67	3117639.293	0	3117639	762916.7	3333367	0	0	0	0	0	0	0	0	0.01031	0.026586	0.036896	0	0	0	0	0.041239	0.07596	0.1172	0	0	0
Statewide Totals	2033	MHDT	Aggregate	Aggregate	Natural Ga:	4217.682	172943.0212	172943	0	37500.68	0	0.015228	0.030254	0	0.045482	0.000228	9.82E-05	0	0.000326	0.000572	0.002962	0.00386	0.000248	0.000107	0	0.000355	0.002288	0.008462	0.011105	168.4273	25.42952	0
Statewide Totals	2033	OBUS	Aggregate	Aggregate	Gasoline	9343.694	343921.9765	343922	0	186948.6	0	0.114055	0.000583	0.078747	0.193384	0.000396	0	5.91E-05	0.000455	0.001137	0.005875	0.007467	0.000431	0	6.42E-05	0.000495	0.004549	0.016785	0.021829	607.8119	3.762106	6.226259
Statewide Totals	2033	OBUS	Aggregate	Aggregate	Diesel	11565.15	754130.5973	754130.6	0	137338	0	1.081503	0.117478	0.201919	1.400899	0.019901	0.000117	0	0.020019	0.002494	0.017602	0.040115	0.020801	0.000123	0	0.020924	0.009975	0.050292	0.081192	1050.593	31.0823	0
Statewide Totals	2033	OBUS	Aggregate	Aggregate	Electricity	1081.998	84210.28034	0	84210.28	21648.61	91088.79	0	0	0	0	0	0	0	0	0.000278	0.000718	0.000997	0	0	0	0	0.001114	0.002052	0.003166	0	0	0
Statewide Totals	2033	OBUS	Aggregate	Aggregate	Natural Ga:	920.5295	49415.96113	49415.96	0	8192.713	0	0.00576	0.00154	0	0.007299	6.01E-05	4.44E-06	0	6.45E-05	0.000163	0.000848	0.001076	6.53E-05	4.83E-06	0	7.02E-05	0.000654	0.002424	0.003148	46.38166	1.200512	0
Statewide Totals	2033	SBUS	Aggregate	Aggregate	Gasoline	6601.495	345478.2517	345478.3	0	26405.98	0	0.115105	0.006107	0.024495	0.145707	0.000351	0	1.56E-05	0.000366	0.000762	0.006102	0.00723	0.000381	0	1.7E-05	0.000398	0.003047	0.017433	0.020878	316.2721	18.50741	1.576735
Statewide Totals	2033	SBUS	Aggregate	Aggregate	Diesel	16480.98	351778.1505	351778.2	0	238644.6	0	0.90707	0.295289	0.150311	1.35267	0.005497	0.000188	0	0.005684	0.001163	0.006153	0.013	0.005745	0.000196	0	0.005941	0.004653	0.017579	0.028173	435.7977	38.77739	0
Statewide Totals	2033	SBUS	Aggregate	Aggregate	Electricity	2957.986	90927.0406	0	90927.04	37235.11	99413.19	0	0	0	0	0	0	0	0	0.000271	0.000801	0.001072	0	0	0	0	0.001084	0.002288	0.003372	0	0	0
Statewide Totals	2033	SBUS	Aggregate	Aggregate	Natural Ga:	5368.543	119772.8316	119772.8	0	77736.5	0	0.074172	0.030539	0	0.104711	0.000521	8.28E-05	0	0.000603	0.000396	0.002143	0.003143	0.000566	9E-05	0	0.000656	0.001584	0.006124	0.008364	198.8737	24.84959	0
Statewide Totals	2033	UBUS	Aggregate	Aggregate	Gasoline	2458.042	216090.8709	216090.9	0	9832.169	0	0.028025	0	0.006353	0.034378	0.000303	0	4.95E-06	0.000308	0.000557	0.008122	0.008987	0.00033	0	5.39E-06	0.000335	0.002228	0.023206	0.025769	275.3807	0	0.710462
Statewide Totals	2033	UBUS	Aggregate	Aggregate	Diesel	1806.307	170064.8222	170064.8	0	7225.228	0	0.063728	0	0	0.063728	0.001187	0	0	0.001187	0.001375	0.007191	0.009753	0.001241	0	0	0.001241	0.005502	0.020546	0.027288	209.6533	0	0
Statewide Totals	2033	UBUS	Aggregate	Aggregate	Electricity	5700.897	641511.8164	0	641511.8	22803.59	1227083	0	0	0	0	0	0	0	0	0.005596	0.013613	0.019209	0	0	0	0	0.022385	0.038893	0.061278	0	0	0
Statewide Totals	2033	UBUS	Aggregate	Aggregate	Natural Ga:	5441.577	598129.4347	598129.4	0	21766.31	0	0.069393	0	0	0.069393	0.000421	0	0	0.000421	0.005339	0.025281	0.031041	0.00044	0	0	0.00044	0.021355	0.072232	0.094027	1238.915	0	0
Statewide Totals	2034	HHDT	Aggregate	Aggregate	Gasoline	50.36405	5922.814834	5922.815	0	1007.684	0	0.017621	0	5.67E-05	0.017678	7.33E-06	0	4.81E-07	7.81E-06	3.26E-05	0.000202	0.000242	7.97E-06	0	5.23E-07	8.49E-06	0.000131	0.000577	0.000716	12.02465	0	0.052766
Statewide Totals	2034	HHDT	Aggregate	Aggregate	Diesel	356554.7	49434540	49434540	0	5902380	0	74.99431	26.19116	17.44286	118.6283	1.434694	0.01088	0	1.445574	0.484914	1.543237	3.473725	1.499564	0.011372	0	1.510936	1.939655	4.409248	7.85984	73597.69	4996.159	0
Statewide Totals	2034	HHDT	Aggregate	Aggregate	Electricity	39493.12	4637934.037	0	4637934	545262.5	8450607	0	0	0	0	0	0	0	0	0.044451	0.077272	0.121723	0	0	0	0	0.177803	0.220778	0.398581	0	0	0
Statewide Totals	2034	HHDT	Aggregate	Aggregate	Natural Ga:	21778.84	1338731.177	1338731	0	157939.3	0	0.680503	0.198619	0	0.879122	0.002332	0.000559	0	0.002891	0.013281	0.078876	0.095049	0.002537	0.000608	0	0.003144	0.053125	0.225361	0.281631	1719.757	207.5911	0
Statewide Totals	2034	LDA	Aggregate	Aggregate	Gasoline	12482174	489828263.9	4.9E+08	0	57856507	0	12.93877	0	11.84502	24.7838	0.407615	0	0.078947	0.486562	1.079887	1.448977	3.015426	0.443318	0	0.085862	0.52918	4.319549	4.139934	8.988663	130353.6	0	3707.807
Statewide Totals	2034	LDA	Aggregate	Aggregate	Diesel	16029.29	480762.0967	480762.1	0	68297.58	0	0.036325	0	0	0.036325	0.002463	0	0	0.002463	0.00106	0.001449	0.004972	0.002575	0	0	0.002575	0.00424	0.00414	0.010954	112.0921	0	0
Statewide Totals	2034	LDA	Aggregate	Aggregate	Electricity	1406153	60833654.97	0	60833655	6748312	23486812	0	0	0	0	0	0	0	0	0.134115	0.102959	0.237074	0	0	0	0	0.536461	0.294168	0.830629	0	0	0
Statewide Totals	2034	LDA	Aggregate	Aggregate	Plug-in Hyb	542264.8	22653209.17	9690590	12962619	2242265	3915097	0.070937	0	0.280531	0.351468	0.008007	0	0.003015	0.011023	0.049942	0.035096	0.096061	0.008709	0	0.00328	0.011988	0.199767	0.100275	0.31203	3067.183	0	143.8804
Statewide Totals	2034	LDT1	Aggregate	Aggregate	Gasoline	1075762	37260627.88	37260628	0	4728819	0	2.244325	0	1.336803	3.581127	0.042226	0	0.008503	0.050728	0.082146	0.135129	0.268003	0.045924	0	0.009247	0.055172	0.328583	0.386084	0.769838	11966.35	0	376.1166
Statewide Totals	2034	LDT1	Aggregate	Aggregate	Diesel	8.915111	338.4921015	338.4921	0	40.48217	0	4.29E-05	0	0	4.29E-05	3.98E-06	0	0	3.98E-06	7.46E-07	1.18E-06	5.9E-06	4.16E-06	0	0	4.16E-06	2.98E-06	3.36E-06	1.05E-05	0.133763	0	0
Statewide Totals	2034	LDT1	Aggregate	Aggregate	Electricity	14954.38	686092.5839	0	686092.6	73255.03	264888.4	0	0	0	0	0	0	0	0	0.001513	0.001159	0.002672	0	0	0	0	0.00605	0.003311	0.009362	0	0	0
Statewide Totals	2034	LDT1	Aggregate	Aggregate	Plug-in Hyb	11605.27	522476.4215	214103.1	308373.3	47987.78	93137.94	0.00157	0	0.005996	0.007566	0.000128	0	4.52E-05	0.000173	0.001152	0.000813	0.002138	0.000139	0	4.92E-05	0.000189	0.004607	0.002322	0.007118	68.00941	0	3.387073
Statewide Totals	2034	LDT2	Aggregate	Aggregate	Gasoline	7156983	276578794.5	2.77E+08	0	33168275	0	10.5523	0	8.431362	18.98366	0.240309	0	0.045788	0.286097	0.609752	0.973941	1.86979	0.261358	0	0.049799	0.311157	2.439009	2.782688	5.532854	89394.45	0	2618.399
Statewide Totals	2034	LDT2	Aggregate	Aggregate	Diesel	26510.8	1039752.571	1039753	0	124017.6	0	0.036876	0	0	0.036876	0.004718	0	0	0.004718	0.002292	0.00365	0.010661	0.004932	0	0	0.004932	0.009169	0.010429	0.02453	310.433	0	0
Statewide Totals	2034	LDT2	Aggregate	Aggregate	Electricity	183289.5	5787735.029	0	5787735	897688.6	2234543	0	0	0	0	0	0	0	0	0.01276	0.009783	0.022543	0	0	0	0	0.051039	0.027952	0.078992	0	0	0
Statewide Totals	2034	LDT2	Aggregate	Aggregate	Plug-in Hyb	144073	6116715.299	2553089	3563626	595741.7	1076321	0.018712	0	0.0745	0.093212	0.001773	0	0.000658	0.002431	0.013485	0.009505	0.025421	0.001928	0	0.000716	0.002644	0.05394	0.027158	0.083742	809.6514	0	44.99907
Statewide Totals	2034	LHDT1	Aggregate	Aggregate	Gasoline	454860.5	16558788.16	16558788	0	6776744	0	1.224389	0.014708	3.655137	4.894233	0.021249	0	0.001188	0.022437	0.036506	0.498305	0.557248	0.02311	0	0.001292	0.024403	0.146024	1.423729	1.594155	12207.18	56.20188	185.7309
Statewide Totals	2034	LHDT1	Aggregate	Aggregate	Diesel	332965.5	11797368.75	11797369	0	4188287	0	10.45478	0.546578	0	11.00136	0.298622	0.009572	0	0.308194	0.039013	0.355019	0.702226	0.312124	0.010005	0	0.322129	0.156052	1.014341	1.492523	7194.272	45.46432	0
Statewide Totals	2034	LHDT1	Aggregate	Aggregate	Electricity	120194.5	6619124.88	0	6619125	1682140	4006478	0	0	0	0	0	0	0	0	0.014593	0.099595	0.114188	0	0	0	0	0.058371	0.284557	0.342928	0	0	0
Statewide Totals	2034	LHDT2	Aggregate	Aggregate	Gasoline	61325.91	2132771.846	2132772	0	913664.6	0	0.134374	0.00193	0.496895	0.633199	0.002432	0	0.000122	0.002554	0.004702	0.074879	0.082134	0.002645	0	0.000132	0.002777	0.018808	0.213939	0.235524	1770.6	8.823446	24.34786

Statewide Totals	2034	LHDT2	Aggregate	Aggregate	Diesel	150277.5	5291489.005	5291489	0	1890302	0	4.237807	0.240135	0	4.477943	0.13244	0.004371	0	0.13681	0.017499	0.185777	0.340086	0.138428	0.004568	0	0.142996	0.069994	0.530791	0.743782	3785.648	32.87746	0
Statewide Totals	2034	LHDT2	Aggregate	Aggregate	Electricity	30819.35	1625641.664	0	1625642	408466.9	974657.1	0	0	0	0	0	0	0	0	0.003584	0.028537	0.032121	0	0	0	0	0.014336	0.081534	0.09587	0	0	0
Statewide Totals	2034	MCY	Aggregate	Aggregate	Gasoline	721047.7	4091407.178	4091407	0	1442095	0	2.293072	0	0.1565	2.449572	0.009268	0	0.004936	0.014204	0.00451	0.018942	0.037656	0.009935	0	0.005281	0.015216	0.01804	0.05412	0.087376	857.9034	0	66.89293
Statewide Totals	2034	MDV	Aggregate	Aggregate	Gasoline	4314393	158893974.2	1.59E+08	0	19722973	0	7.762134	0	5.82324	13.58537	0.142341	0	0.028838	0.171179	0.350301	0.567273	1.088754	0.154809	0	0.031363	0.186173	1.401206	1.620781	3.208159	62794.71	0	1923.299
Statewide Totals	2034	MDV	Aggregate	Aggregate	Diesel	57366.06	2010510.204	2010510	0	258903.9	0	0.069199	0	0	0.069199	0.00627	0	0	0.00627	0.004432	0.007302	0.018004	0.006554	0	0	0.006554	0.01773	0.020862	0.045146	813.3327	0	0
Statewide Totals	2034	MDV	Aggregate	Aggregate	Electricity	174614.3	5466794.403	0	5466794	852877.3	2110634	0	0	0	0	0	0	0	0	0.012052	0.00925	0.021302	0	0	0	0	0.048209	0.026428	0.074637	0	0	0
Statewide Totals	2034	MDV	Aggregate	Aggregate	Plug-in Hyb	89686.2	3717912.236	1555220	2162693	370852.4	653197.6	0.011386	0	0.046374	0.05776	0.001134	0	0.000434	0.001568	0.008197	0.005775	0.015539	0.001234	0	0.000472	0.001706	0.032786	0.016499	0.050991	492.6789	0	34.2087
Statewide Totals	2034	MH	Aggregate	Aggregate	Gasoline	55588.3	552046.9766	552047	0	5561.054	0	0.096925	0	0.003	0.099925	0.000679	0	1.88E-06	0.000681	0.001826	0.009374	0.011881	0.000739	0	2.05E-06	0.000741	0.007302	0.026782	0.034825	1128.701	0	0.185676
Statewide Totals	2034	MH	Aggregate	Aggregate	Diesel	33935.52	307868.3446	307868.3	0	3393.552	0	1.080269	0	0	1.080269	0.023266	0	0	0.023266	0.001357	0.005208	0.029832	0.024318	0	0	0.024318	0.00543	0.014881	0.044629	355.1327	0	0
Statewide Totals	2034	MHDT	Aggregate	Aggregate	Gasoline	36476.81	1859073.496	1859073	0	729828	0	0.277945	0.002924	0.269572	0.55044	0.002305	0	0.000344	0.002649	0.006148	0.031517	0.040314	0.002507	0	0.000374	0.002881	0.024591	0.090047	0.11752	3201.164	20.2301	32.8499
Statewide Totals	2034	MHDT	Aggregate	Aggregate	Diesel	282262.5	11319757.37	11319757	0	3391948	0	6.329034	2.698222	5.283783	14.31104	0.061148	0.001562	0	0.06271	0.037434	0.193097	0.293241	0.063913	0.001632	0	0.065546	0.149735	0.551706	0.766987	13087.49	641.976	0
Statewide Totals	2034	MHDT	Aggregate	Aggregate	Electricity	72384.87	3748709.434	0	3748709	925976.8	4006958	0	0	0	0	0	0	0	0	0.012397	0.031969	0.044366	0	0	0	0	0.049587	0.09134	0.140927	0	0	0
Statewide Totals	2034	MHDT	Aggregate	Aggregate	Natural Ga:	4224.918	171134.5247	171134.5	0	37617.3	0	0.014689	0.030248	0	0.044938	0.000228	9.92E-05	0	0.000327	0.000566	0.002931	0.003824	0.000248	0.000108	0	0.000356	0.002264	0.008373	0.010993	166.2998	25.47218	0
Statewide Totals	2034	OBUS	Aggregate	Aggregate	Gasoline	8964.914	321567.3167	321567.3	0	179370	0	0.099074	0.000553	0.073026	0.172653	0.000373	0	5.6E-05	0.000429	0.001063	0.005493	0.006986	0.000406	0	6.09E-05	0.000467	0.004254	0.015694	0.020414	564.4799	3.596879	5.951548
Statewide Totals	2034	OBUS	Aggregate	Aggregate	Diesel	11602.36	757211.5582	757211.6	0	137609.5	0	1.040373	0.112964	0.196353	1.34969	0.018941	0.000111	0	0.019052	0.002504	0.01773	0.039287	0.019798	0.000116	0	0.019914	0.010016	0.050658	0.080589	1048.805	30.73226	0
Statewide Totals	2034	OBUS	Aggregate	Aggregate	Electricity	1284.868	98628.16694	0	98628.17	25707.64	106690.9	0	0	0	0	0	0	0	0	0.000326	0.000841	0.001168	0	0	0	0	0.001305	0.002404	0.003709	0	0	0
Statewide Totals	2034	OBUS	Aggregate	Aggregate	Natural Ga:	933.3586	50020.22308	50020.22	0	8306.892	0	0.005662	0.001558	0	0.00722	6.17E-05	4.58E-06	0	6.63E-05	0.000165	0.000859	0.00109	6.71E-05	4.98E-06	0	7.21E-05	0.000662	0.002454	0.003187	46.67722	1.214337	0
Statewide Totals	2034	SBUS	Aggregate	Aggregate	Gasoline	6490.808	339133.4019	339133.4	0	25963.23	0	0.090321	0.005962	0.024508	0.12079	0.000344	0	1.53E-05	0.000359	0.000748	0.00599	0.007096	0.000374	0	1.67E-05	0.00039	0.002991	0.017113	0.020494	309.2914	18.13872	1.5326
Statewide Totals	2034	SBUS	Aggregate	Aggregate	Diesel	15983.1	339737.0638	339737.1	0	231435.3	0	0.764637	0.265443	0.150829	1.180909	0.004747	0.000156	0	0.004903	0.001123	0.005941	0.011968	0.004962	0.000163	0	0.005125	0.004494	0.016975	0.026593	418.7978	37.2549	0
Statewide Totals	2034	SBUS	Aggregate	Aggregate	Electricity	3562.132	109300.6304	0	109300.6	44871.35	119506.9	0	0	0	0	0	0	0	0	0.000326	0.000963	0.001289	0	0	0	0	0.001303	0.002751	0.004054	0	0	0
Statewide Totals	2034	SBUS	Aggregate	Aggregate	Natural Ga:	5404.883	118766.559	118766.6	0	78262.71	0	0.071724	0.030718	0	0.102442	0.000516	8.4E-05	0	0.0006	0.000393	0.002125	0.003118	0.000561	9.14E-05	0	0.000653	0.001571	0.006072	0.008296	196.346	25.03082	0
Statewide Totals	2034	UBUS	Aggregate	Aggregate	Gasoline	2347.636	207209.6617	207209.7	0	9390.545	0	0.025988	0	0.005852	0.03184	0.00029	0	4.4E-06	0.000295	0.000527	0.007739	0.00856	0.000316	0	4.78E-06	0.000321	0.002106	0.022111	0.024538	256.1493	0	0.646258
Statewide Totals	2034	UBUS	Aggregate	Aggregate	Diesel	1722.095	166577.9311	166577.9	0	6888.378	0	0.062323	0	0	0.062323	0.001167	0	0	0.001167	0.001345	0.007043	0.009554	0.001219	0	0	0.001219	0.005378	0.020122	0.02672	204.608	0	0
Statewide Totals	2034	UBUS	Aggregate	Aggregate	Electricity	6120.747	669314.4033	0	669314.4	24482.99	1277585	0	0	0	0	0	0	0	0	0.005771	0.014203	0.019974	0	0	0	0	0.023085	0.040579	0.063664	0	0	0
Statewide Totals	2034	UBUS	Aggregate	Aggregate	Natural Ga:	5319.952	593629.9697	593630	0	21279.81	0	0.069224	0	0	0.069224	0.000434	0	0	0.000434	0.005313	0.02509	0.030837	0.000454	0	0	0.000454	0.021252	0.071684	0.09339	1234.158	0	0
Statewide Totals	2035	HHDT	Aggregate	Aggregate	Gasoline	48.16486	5692.057876	5692.058	0	963.6825	0	0.016678	0	2.38E-06	0.01668	7.07E-06	0	4.6E-07	7.53E-06	3.14E-05	0.000195	0.000234	7.69E-06	0	5E-07	8.19E-06	0.000125	0.000556	0.00069	11.43093	0	0.049715
Statewide Totals	2035	HHDT	Aggregate	Aggregate	Diesel	359761.9	50374336.17	50374336	0	5980942	0	75.30586	26.43324	17.57157	119.3107	1.456899	0.010922	0	1.467821	0.494369	1.579686	3.541875	1.522774	0.011416	0	1.534189	1.977476	4.513387	8.025052	74210.87	5028.948	0
Statewide Totals	2035	HHDT	Aggregate	Aggregate	Electricity	45666.71	5293906.477	0	5293906	623838.6	9646653	0	0	0	0	0	0	0	0	0.050682	0.088378	0.13906	0	0	0	0	0.202728	0.252507	0.455235	0	0	0
Statewide Totals	2035	HHDT	Aggregate	Aggregate	Natural Ga:	21666.64	1333763.931	1333764	0	157885	0	0.640247	0.196435	0	0.836681	0.002318	0.00057	0	0.002888	0.013232	0.078264	0.094384	0.002521	0.00062	0	0.003141	0.052928	0.223612	0.279681	1702.494	206.8033	0
Statewide Totals	2035	LDA	Aggregate	Aggregate	Gasoline	12476484	489877319.5	4.9E+08	0	57857638	0	12.54961	0	11.61469	24.1643	0.383507	0	0.074458	0.457965	1.079995	1.448349	2.986309	0.417099	0	0.08098	0.498079	4.319981	4.13814	8.9562	129111	0	3661.169
Statewide Totals	2035	LDA	Aggregate	Aggregate	Diesel	14614.04	439593.8179	439593.8	0	62227.82	0	0.030807	0	0	0.030807	0.002049	0	0	0.002049	0.000969	0.001322	0.004341	0.002142	0	0	0.002142	0.003877	0.003777	0.009796	100.7949	0	0
Statewide Totals	2035	LDA	Aggregate	Aggregate	Electricity	1454951	62378720.67	0	62378721	6963275	24083335	0	0	0	0	0	0	0	0	0.137522	0.105596	0.243117	0	0	0	0	0.550086	0.301702	0.851788	0	0	0
Statewide Totals	2035	LDA	Aggregate	Aggregate	Plug-in Hyb	551388.1	22859643.11	9701557	13158086	2279990	3974134	0.071008	0	0.285266	0.356275	0.007576	0	0.002916	0.010492	0.050397	0.035447	0.096337	0.00824	0	0.003172	0.011412	0.201588	0.101278	0.314277	3070.242	0	145.2929
Statewide Totals	2035	LDT1	Aggregate	Aggregate	Gasoline	1061127	36866506.85	36866507	0	4673216	0	2.008459	0	1.26841	3.276869	0.038585	0	0.007827	0.046412	0.081277	0.133511	0.2612	0.041965	0	0.008512	0.050477	0.325107	0.381461	0.757046	11696.21	0	365.1911
Statewide Totals	2035	LDT1	Aggregate	Aggregate	Diesel	9.18579	348.4285746	348.4286	0	41.77248	0	3.94E-05	0	0	3.94E-05	3.74E-06	0	0	3.74E-06	7.68E-07	1.21E-06	5.72E-06	3.91E-06	0	0	3.91E-06	3.07E-06	3.47E-06	1.04E-05	0.13694	0	0
Statewide Totals	2035	LDT1	Aggregate	Aggregate	Electricity	16334.68	740774.0207	0	740774	79764.6	285999.9	0	0	0	0	0	0	0	0	0.001633	0.001252	0.002885	0	0	0	0	0.006533	0.003577	0.010109	0	0	0
Statewide Totals	2035	LDT1	Aggregate	Aggregate	Plug-in Hyb	12665.25	562078.1839	230060.4	332017.8	52370.8	100279.3	0.001687	0	0.006544	0.008231	0.000135	0	4.83E-05	0.000183	0.001239	0.000875	0.002297	0.000147	0	5.26E-05	0.000199	0.004957	0.002499	0.007655	73.06227	0	3.691692
Statewide Totals	2035	LDT2	Aggregate	Aggregate	Gasoline	7218592	278114294.6	2.78E+08	0	33430020	0	10.07583	0	8.349446	18.42528	0.227859	0	0.043624	0.271483	0.613137	0.979576	1.864196	0.247818	0	0.047445	0.295262	2.45255	2.798788	5.5466	88958.17	0	2605.762
Statewide Totals	2035	LDT2	Aggregate	Aggregate	Diesel	26762.5	1046251.776	1046252	0	125068.7	0	0.036606	0	0	0.036606	0.004736	0	0	0.004736	0.002307	0.003674	0.010716	0.00495	0	0	0.00495	0.009226	0.010496	0.024672	309.2409	0	0
Statewide Totals	2035	LDT2	Aggregate	Aggregate	Electricity	197625.2	6151823.737	0	6151824	963803	2375112	0	0	0	0	0	0	0	0	0.013562	0.010403	0.023966	0	0	0	0	0.05425	0.029723	0.083973	0	0	0
Statewide Totals	2035	LDT2	Aggregate	Aggregate	Plug-in Hyb	152170.6	6383240.724	2653809	3729432	629225.6	1126400	0.019448	0	0.078691	0.098139	0.001775	0	0.000671	0.002446	0.014073	0.009926	0.026444	0.00193	0	0.00073	0.00266	0.056291	0.028359	0.08731	841.4454	0	47.34459
Statewide Totals	2035	LHDT1	Aggregate	Aggregate	Gasoline	442479	15935907.02	15935907	0	6592278	0	1.07985	0.014061	3.469521	4.563431	0.019987	0	0.00103	0.021017	0.035133	0.479561	0.53571	0.021738	0	0.00112	0.022858	0.140531	1.370174	1.533562	11667.35	54.42242	179.9564
Statewide Totals	2035	LHDT1	Aggregate	Aggregate	Diesel	323800.2	11341644.37	11341644	0	4072999	0	9.21446	0.514492	0	9.728952	0.277376	0.009307	0	0.286683	0.037506	0.341305	0.665495	0.289918	0.009728	0	0.299646	0.150024	0.975158	1.424828	6892.853	43.93921	0
Statewide Totals	2035	LHDT1	Aggregate	Aggregate	Electricity	143818.3	7772907.478	0	7772907	2012712	4705944	0	0	0	0	0	0	0	0	0.017136	0.116955	0.134092	0	0	0	0	0.068545	0.334158	0.402704	0	0	0
Statewide Totals	2035	LHDT2	Aggregate	Aggregate	Gasoline	59228.59	2040828.7	2040829	0	882417.8	0	0.117101	0.00182	0.466494	0.585415	0.002314	0	0.00011	0.002424	0.004499	0.071651	0.078574	0.002517	0	0.000119	0.002636	0.017997	0.204716	0.22535	1680.111	8.478753	23.41684
Statewide Totals	2035	LHDT2	Aggregate	Aggregate	Diesel	147523.7	5119729.93	5119730	0	1855663	0	3.934177	0.229515	0	4.163692	0.126109	0.004269	0	0.130378	0.016931	0.179747	0.327056	0.131812	0.004462	0	0.136274	0.067722	0.513562	0.717558	3647.725	32.13721	0
Statewide Totals	2035	LHDT2	Aggregate	Aggregate	Electricity	36878.69	1910416.25	0	1910416	488706.1	1145512	0	0	0	0	0	0	0	0	0.004212	0.033536	0.037748	0	0	0	0	0.016847	0.095817	0.112664	0	0	0
Statewide Totals	2035	MCY	Aggregate	Aggregate	Gasoline	724797.8	4094402.047	4094402	0	1449596	0	2.272368	0	0.152445	2.424813	0.009341	0	0.00501	0.014351	0.004513	0.018956	0.03782	0.010013	0	0.005362	0.015375	0.018053	0.05416	0.087588	857.6732	0	66.40147
Statewide Totals	2035	MDV	Aggregate	Aggregate	Gasoline	4332193	159243386.7	1.59E+08	0	19797855	0	7.321512	0	5.70603	13.02754	0.135042	0	0.027432	0.162474	0.351072	0.56867	1.082216	0.146871	0	0.029835	0.176705	1.404287	1.624772	3.205765	62238.38	0	1904.851
Statewide Totals	2035	MDV	Aggregate	Aggregate	Diesel	56343.67	1970400.485	1970400	0	254018.6	0	0.06161	0	0	0.06161	0.005572	0	0	0.005572	0.004344	0.007148	0.017064	0.005824	0	0	0.005824	0.017376	0.020423	0.043623	786.997	0	0
Statewide Totals	2035	MDV	Aggregate	Aggregate	Electricity	186780	5763664.862	0	5763665	908368.1	2225250	0	0	0	0	0	0	0	0	0.012707	0.009757	0.022463	0	0	0	0	0.050827	0.027877	0.078703	0	0	0
Statewide Totals	2035	MDV	Aggregate	Aggregate	Plug-in Hyb	94682.59	3879656.999	1616029	2263628	391512.5	683683.2	0.01183	0	0.04896	0.06079	0.001129	0	0.00044	0.001569	0.008553	0.00603	0.016152	0.001228	0	0.000478	0.001706	0.034213	0.017229	0.053148	511.8875	0	35.95848
Statewide Totals	2035	MH	Aggregate	Aggregate	Gasoline	54030.3	541622.3594	541622.4	0	5405.191	0	0.088207	0	0.002915	0.091122	0.000666	0	1.84E-06	0.000668	0.001791	0.009196	0.011655	0.000724	0	2E-06	0.000726	0.007164	0.026275	0.034165	1107.16	0	0.180104
Statewide Totals	2035	MH	Aggregate	Aggregate	Diesel	33674.36	305434.5662	305434.6	0	3367.436	0	1.037558	0	0	1.037558	0.021654	0	0	0.021654	0.001347	0.005167	0.028168	0.022634	0	0	0.022634	0.005387	0.014762	0.042782	352.3981	0	0
Statewide Totals	2035	MHDT	Aggregate	Aggregate	Gasoline	34992.32	1762299.714	1762300	0	700126.3	0	0.246333	0.002756	0.257877	0.506966	0.002198	0	0.000332	0.00253	0.005828	0.029878	0.038236	0.002391	0	0.000361	0.002752	0.023311	0.085365	0.111429	3013.576	19.2746	31.2132
Statewide Totals	2035	MHDT	Aggregate	Aggregate	Diesel	276502.1	11078238.42	11078238	0	3323913	0	5.832749	2.570116	5.092669	13.49553	0.056775	0.001363	0	0.058139	0.036635	0.188952	0.283726	0.059343	0.001425	0	0.060767	0.14654	0.539863	0.747171	12727.52	623.9156	0
Statewide Totals	2035	MHDT	Aggregate	Aggregate	Electricity	85783.8	4405080.979	0	4405081	1097683	4707520	0	0	0	0	0	0	0	0	0.014567	0.037569	0.052136	0	0	0	0	0.058269	0.107339	0.165609	0	0	0
Statewide Totals	2035	MHDT	Aggregate	Aggregate	Natural Ga:	4215.94	169037.2646	169037.3	0	37606.67	0	0.014177	0.030123	0	0.044301	0.000227	9.98E-05	0	0.000326	0.000559	0.002895	0.00378	0.000247	0.000108	0	0.000355	0.002236	0.00827	0.010861	163.9194	25.40825	0
Statewide Totals	2035	OBUS	Aggregate	Aggregate	Gasoline	8605.215	300285.9462	300285.9	0	172173.1	0	0.088179	0.000526	0.069662	0.158367	0.000351	0	5.31E-05	0.000404	0.000993	0.005128	0.006526	0.000382	0	5.77E-05	0.000439	0.003972	0.014653	0.019064	523.7795	3.441792	5.696201
Statewide Totals	2035	OBUS	Aggregate	Aggregate	Diesel	11625.82	760244.3538	760244.4	0	137702.4	0	1.000095	0.108206	0.19069	1.29899	0.018033	0.000105	0	0.018138	0.002514	0.017855	0.038507	0.018848	0.00011	0	0.018958	0.010056	0.051014	0.080029	1047.262	30.32787	0
Statewide Totals	2035	OBUS	Aggregate	Aggregate	Electricity	1497.319	113371.331	0	113371.3	29958.35	122642.3	0	0	0	0	0	0	0	0	0.000375	0.000967	0.001342	0	0	0	0	0.0015	0.002763	0.004263	0	0	0
Statewide Totals	2035	OBUS	Aggregate	Aggregate	Natural Ga:	945.9437	50614.86281	50614.86	0	8418.899	0	0.005559	0.001576	0	0.007135	6.33E-05	4.71E-06	0	6.8E-05	0.000167	0.000869	0.001104	6.89E-05	5.12E-06	0	7.4E-05	0.00067	0.002483	0.003226	46.97765	1.228052	0
Statewide Totals	2035	SBUS	Aggregate	Aggregate	Gasoline	6373.341	332368.4097	332368.4	0	25493.36	0	0.070578	0.005813	0.024199	0.100591	0.000339	0	1.51E-05	0.000354	0.000733	0.00587	0.006957	0.000368	0	1.65E-05	0.000385	0.002931	0.016772	0.020088	302.0493	17.75455	1.490944
Statewide Totals	2035	SBUS	Aggregate	Aggregate	Diesel	15485.36	327474.9893	327475	0	224228	0	0.640494	0.2371	0.150912	1.028505	0.004052	0.000128	0	0.00418	0.001083	0.005726	0.010989	0.004235	0.000134	0	0.004369	0.004332	0.01636	0.02506	401.7459	35.74398	0
Statewide Totals	2035	SBUS	Aggregate	Aggregate	Electricity	4199.788	128749.9526	0	128750	52909.85	140778.8	0	0	0	0	0	0	0	0	0.000384	0.001134	0.001518	0	0	0	0	0.001535	0.003241	0.004776	0	0	0
Statewide Totals	2035	SBUS	Aggregate	Aggregate	Natural Ga:	5421.76	117290.0579	117290.1	0	78507.08	0	0.069	0.030784	0	0.099784	0.00051	8.5E-05	0	0.000595	0.000388	0.002099	0.003081	0.000554	9.24E-05	0	0.000647	0.001551	0.005997	0.008195	193.0507	25.12434	0
Statewide Totals	2035	UBUS	Aggregate	Aggregate	Gasoline	2186.902	192941.3535	192941.4	0	8747.606	0	0.020523	0	0.005022	0.025545	0.000263	0	3.61E-06	0.000267	0.000478	0.007127	0.007872	0.000286	0	3.93E-06	0.00029	0.001914	0.020363	0.022567	222.1905	0	0.556332
Statewide Totals	2035	UBUS	Aggregate	Aggregate	Diesel	1245.469	126074.263	126074.3	0	4981.876	0	0.045205	0	0	0.045205	0.000854	0	0	0.000854	0.000977	0.005324	0.007155	0.000893	0	0	0.000893	0.003908	0.015211	0.020012	151.4071	0	0
Statewide Totals	2035	UBUS	Aggregate	Aggregate	Electricity	8118.576	844624.9539	0	844625	32474.3	1610654	0	0	0	0	0	0	0	0	0.007333	0.017923	0.025256	0	0	0	0	0.029333	0.051207	0.08054	0	0	0
Statewide Totals	2035	UBUS	Aggregate	Aggregate	Natural Ga:	4062.957	484015.394	484015.4	0	16251.83	0	0.056037	0	0	0.056037	0.000379	0	0	0.000379	0.004288	0.020437	0.025104	0.000396	0	0	0.000396	0.01715	0.058391	0.075938	997.1126	0	0
Statewide Totals	2036	HHDT	Aggregate	Aggregate	Gasoline	46.15883	5466.477821	5466.478	0	923.5458	0	0.015554	0	4.03E-07	0.015555	6.82E-06	0	4.44E-07	7.27E-06	3.01E-05	0.000188	0.000225	7.42E-06	0	4.83E-07	7.9E-06	0.000121	0.000536	0.000665	10.86506	0	0.0468
Statewide Totals	2036	HHDT	Aggregate	Aggregate	Diesel	362908.2	51251123.75	51251124	0	6060300	0	75.51889	26.71546	17.68664	119.921	1.475635	0.011009	0	1.486644	0.503197	1.613404	3.603246	1.542357	0.011507	0	1.553864	2.012789	4.609726	8.176379	74770.7	5071.507	0
Statewide Totals	2036	HHDT	Aggregate	Aggregate	Electricity	51777.24	5911860.092	0	5911860	700452.1	10772570	0	0	0	0	0	0	0	0	0.056533	0.098862	0.155395	0	0	0	0	0.226131	0.282462	0.508594	0	0	0
Statewide Totals	2036	HHDT	Aggregate	Aggregate	Natural Ga:	21501.51	1324452.912	1324453	0	157354.1	0	0.60453	0.193921	0	0.798452	0.002303	0.000579	0	0.002882	0.013139	0.077459	0.09348	0.002505	0.00063	0	0.003135	0.052558	0.22131	0.277003	1681.364	205.4847	0
Statewide Totals	2036	LDA	Aggregate	Aggregate	Gasoline	12477791	490153384.7	4.9E+08	0	57893988	0	12.20687	0	11.40948	23.61635	0.362571	0	0.070465	0.433036	1.080592	1.449768	2.963395	0.394329	0	0.076637	0.470966	4.322367	4.142193	8.935526	128106.5	0	3621.294
Statewide Totals	2036	LDA	Aggregate	Aggregate	Diesel	13369.14	405788.2667	405788.3	0	57012.07	0	0.026134	0	0	0.026134	0.001673	0	0	0.001673	0.000895	0.001218	0.003786	0.001749	0	0	0.001749	0.003578	0.003481	0.008808	91.45913	0	0
Statewide Totals	2036	LDA	Aggregate	Aggregate	Electricity	1499173	63728686.13	0	63728686	7156663	24604533	0	0	0	0	0	0	0	0	0.140498	0.107901	0.248398	0	0	0	0	0.561991	0.308288	0.870278	0	0	0

Statewide Totals	2036	LDA	Aggregate	Aggregate	Plug-in Hyb	559265.8	23027314.11	9703854	13323460	2312564	4024082	0.071068	0	0.289356	0.360424	0.007181	0	0.002816	0.009998	0.050767	0.035746	0.09651	0.00781	0	0.003063	0.010873	0.203066	0.102131	0.316071	3072.391	0	146.4279
Statewide Totals	2036	LDT1	Aggregate	Aggregate	Gasoline	1046983	36506486.09	36506486	0	4621148	0	1.79481	0	1.204745	2.999555	0.035641	0	0.00726	0.042901	0.080482	0.132138	0.25552	0.038762	0	0.007896	0.046658	0.321928	0.377536	0.746122	11451.79	0	355.0027
Statewide Totals	2036	LDT1	Aggregate	Aggregate	Diesel	8.844373	350.5026878	350.5027	0	41.42145	0	2.61E-05	0	0	2.61E-05	1.9E-06	0	0	1.9E-06	7.73E-07	1.22E-06	3.9E-06	1.99E-06	0	0	1.99E-06	3.09E-06	3.49E-06	8.57E-06	0.136735	0	0
Statewide Totals	2036	LDT1	Aggregate	Aggregate	Electricity	17669.56	791509.461	0	791509.5	85990.92	305588	0	0	0	0	0	0	0	0	0.001745	0.001338	0.003083	0	0	0	0	0	0.00698	0.003823	0.010803	0	0	0
Statewide Totals	2036	LDT1	Aggregate	Aggregate	Plug-in Hyb	13686.51	598802.2425	244857.1	353945.1	56593.7	106902	0.001797	0	0.007072	0.008869	0.000141	0	5.13E-05	0.000192	0.00132	0.000933	0.002445	0.000153	0	5.58E-05	0.000209	0.005281	0.002665	0.008154	77.79439	0	3.985079
Statewide Totals	2036	LDT2	Aggregate	Aggregate	Gasoline	7275369	279469127.7	2.79E+08	0	33670259	0	9.658433	0	8.280835	17.93927	0.216871	0	0.04164	0.258511	0.616116	0.985412	1.860039	0.235867	0	0.045287	0.281154	2.464465	2.815463	5.561083	88577.91	0	2594.57
Statewide Totals	2036	LDT2	Aggregate	Aggregate	Diesel	27019.59	1052769.593	1052770	0	126144.2	0	0.036431	0	0	0.036431	0.004757	0	0	0.004757	0.002321	0.003701	0.010779	0.004973	0	0	0.004973	0.009284	0.010573	0.02483	308.3958	0	0
Statewide Totals	2036	LDT2	Aggregate	Aggregate	Electricity	211232.9	6483905.614	0	6483906	1025916	2503323	0	0	0	0	0	0	0	0	0.014295	0.010969	0.025264	0	0	0	0	0	0.057178	0.03134	0.088519	0	0	0
Statewide Totals	2036	LDT2	Aggregate	Aggregate	Plug-in Hyb	159720	6623354.339	2744192	3879162	660442.4	1171623	0.020123	0	0.0826	0.102722	0.001774	0	0.000682	0.002456	0.014602	0.010308	0.027366	0.00193	0	0.000742	0.002672	0.058408	0.029452	0.090531	870.5015	0	49.52101
Statewide Totals	2036	LHDT1	Aggregate	Aggregate	Gasoline	430836.1	15356879.38	15356879	0	6418815	0	0.926848	0.013471	3.314726	4.255045	0.019122	0	0.000973	0.020095	0.033856	0.462136	0.516087	0.020797	0	0.001058	0.021855	0.135424	1.320389	1.477668	11169.56	52.77146	174.2597
Statewide Totals	2036	LHDT1	Aggregate	Aggregate	Diesel	314802.5	10914416.55	10914417	0	3959820	0	8.128108	0.484254	0	8.612361	0.258256	0.009056	0	0.267312	0.036093	0.328449	0.631854	0.269933	0.009466	0	0.279399	0.144373	0.938425	1.362197	6608.14	42.46353	0
Statewide Totals	2036	LHDT1	Aggregate	Aggregate	Electricity	167704	8867091.451	0	8867091	2346951	5369571	0	0	0	0	0	0	0	0	0.019549	0.133419	0.152968	0	0	0	0	0	0.078194	0.381198	0.459392	0	0	0
Statewide Totals	2036	LHDT2	Aggregate	Aggregate	Gasoline	57169.79	1954241.015	1954241	0	851744.6	0	0.101316	0.001715	0.437525	0.540556	0.002215	0	0.000102	0.002316	0.004308	0.068611	0.075235	0.002409	0	0.00011	0.002519	0.017233	0.196031	0.215783	1595.115	8.143711	22.50466
Statewide Totals	2036	LHDT2	Aggregate	Aggregate	Diesel	144753.1	4956169.41	4956169	0	1820812	0	3.652059	0.21951	0	3.871569	0.120842	0.004185	0	0.125027	0.01639	0.174004	0.315421	0.126305	0.004374	0	0.13068	0.065559	0.497155	0.693394	3515.536	31.40032	0
Statewide Totals	2036	LHDT2	Aggregate	Aggregate	Electricity	43003.76	2181037.905	0	2181038	569804.5	1307899	0	0	0	0	0	0	0	0	0.004808	0.038287	0.043095	0	0	0	0	0	0.019233	0.10939	0.128624	0	0	0
Statewide Totals	2036	MCY	Aggregate	Aggregate	Gasoline	728529.1	4097331.203	4097331	0	1457058	0	2.253789	0	0.148651	2.40244	0.009411	0	0.005081	0.014492	0.004516	0.018969	0.037978	0.01009	0	0.005438	0.015528	0.018066	0.054198	0.087793	857.6398	0	65.95543
Statewide Totals	2036	MDV	Aggregate	Aggregate	Gasoline	4351129	159602297.8	1.6E+08	0	19875945	0	6.962833	0	5.617689	12.58052	0.128873	0	0.026248	0.155121	0.351859	0.570625	1.077605	0.140161	0	0.028547	0.168709	1.407435	1.630357	3.206501	61772.6	0	1889.317
Statewide Totals	2036	MDV	Aggregate	Aggregate	Diesel	55369.93	1934521.238	1934521	0	249469.5	0	0.055184	0	0	0.055184	0.004968	0	0	0.004968	0.004265	0.007015	0.016247	0.005192	0	0	0.005192	0.017059	0.020042	0.042294	763.2733	0	0
Statewide Totals	2036	MDV	Aggregate	Aggregate	Electricity	198326.1	6033736.617	0	6033737	960462.2	2329520	0	0	0	0	0	0	0	0	0.013302	0.010218	0.02352	0	0	0	0	0	0.053208	0.029195	0.082404	0	0	0
Statewide Totals	2036	MDV	Aggregate	Aggregate	Plug-in Hyb	99380.41	4026398.187	1671043	2355356	410938	711387.6	0.012241	0	0.051392	0.063632	0.001123	0	0.000445	0.001568	0.008877	0.006264	0.016709	0.001221	0	0.000484	0.001705	0.035507	0.017899	0.05511	529.5828	0	37.59755
Statewide Totals	2036	MH	Aggregate	Aggregate	Gasoline	52686.07	532755.3448	532755.3	0	5270.714	0	0.081485	0	0.00283	0.084315	0.000656	0	1.81E-06	0.000657	0.001762	0.009046	0.011465	0.000713	0	1.97E-06	0.000715	0.007047	0.025844	0.033606	1088.669	0	0.175342
Statewide Totals	2036	MH	Aggregate	Aggregate	Diesel	33379.65	302957.8504	302957.9	0	3337.965	0	0.996196	0	0	0.996196	0.020112	0	0	0.020112	0.001336	0.005124	0.026572	0.021022	0	0	0.021022	0.005343	0.014641	0.041006	349.5745	0	0
Statewide Totals	2036	MHDT	Aggregate	Aggregate	Gasoline	33584.36	1672351.527	1672352	0	671955.8	0	0.21903	0.002597	0.249139	0.470766	0.002098	0	0.000321	0.002419	0.00553	0.028355	0.036304	0.002282	0	0.000349	0.00263	0.022121	0.081015	0.105767	2840.341	18.37524	29.68488
Statewide Totals	2036	MHDT	Aggregate	Aggregate	Diesel	270503.8	10855293.74	10855294	0	3253058	0	5.394921	2.448059	4.899852	12.74283	0.053343	0.001215	0	0.054558	0.035897	0.185126	0.275581	0.055755	0.00127	0	0.057025	0.14359	0.528931	0.729546	12392.62	605.5598	0
Statewide Totals	2036	MHDT	Aggregate	Aggregate	Electricity	99236.76	5046408.003	0	5046408	1270277	5391293	0	0	0	0	0	0	0	0	0.016688	0.043042	0.05973	0	0	0	0	0	0.066752	0.122977	0.189729	0	0	0
Statewide Totals	2036	MHDT	Aggregate	Aggregate	Natural Ga:	4189.921	166838.9387	166838.9	0	37428.59	0	0.013658	0.02988	0	0.043538	0.000226	1E-04	0	0.000326	0.000552	0.002857	0.003734	0.000245	0.000109	0	0.000354	0.002207	0.008163	0.010724	161.4659	25.24796	0
Statewide Totals	2036	OBUS	Aggregate	Aggregate	Gasoline	8263.548	281257.1707	281257.2	0	165337.1	0	0.081247	0.000501	0.067341	0.149088	0.000332	0	5.11E-05	0.000383	0.00093	0.004803	0.006116	0.000361	0	5.55E-05	0.000416	0.00372	0.013723	0.01786	487.5951	3.2947	5.449871
Statewide Totals	2036	OBUS	Aggregate	Aggregate	Diesel	11630.49	763253.1246	763253.1	0	137631.3	0	0.960244	0.103415	0.185029	1.248688	0.017219	9.98E-05	0	0.017319	0.002524	0.017975	0.037818	0.017998	0.000104	0	0.018102	0.010096	0.051358	0.079556	1046.194	29.91415	0
Statewide Totals	2036	OBUS	Aggregate	Aggregate	Electricity	1704.166	127124.0091	0	127124	34096.96	137525.4	0	0	0	0	0	0	0	0	0.00042	0.001084	0.001505	0	0	0	0	0	0.001682	0.003098	0.00478	0	0	0
Statewide Totals	2036	OBUS	Aggregate	Aggregate	Natural Ga:	956.2222	51182.46655	51182.47	0	8510.377	0	0.005449	0.001591	0	0.007039	6.49E-05	4.82E-06	0	6.97E-05	0.000169	0.000879	0.001118	7.06E-05	5.25E-06	0	7.58E-05	0.000677	0.00251	0.003263	47.28279	1.238867	0
Statewide Totals	2036	SBUS	Aggregate	Aggregate	Gasoline	6224.362	324171.756	324171.8	0	24897.45	0	0.061558	0.005628	0.023827	0.091014	0.000337	0	1.51E-05	0.000352	0.000715	0.005725	0.006792	0.000366	0	1.64E-05	0.000383	0.002859	0.016358	0.0196	293.393	17.2756	1.447204
Statewide Totals	2036	SBUS	Aggregate	Aggregate	Diesel	15008.15	315656.2815	315656.3	0	217318	0	0.535506	0.210787	0.150699	0.896992	0.003429	0.000104	0	0.003532	0.001044	0.005519	0.010095	0.003584	0.000108	0	0.003692	0.004175	0.015767	0.023635	385.3762	34.28878	0
Statewide Totals	2036	SBUS	Aggregate	Aggregate	Electricity	4836.617	147977.3926	0	147977.4	60945.47	161808.6	0	0	0	0	0	0	0	0	0.000441	0.001304	0.001745	0	0	0	0	0	0.001765	0.003725	0.005489	0	0	0
Statewide Totals	2036	SBUS	Aggregate	Aggregate	Natural Ga:	5421.98	115537.6611	115537.7	0	78510.27	0	0.066059	0.030752	0	0.096811	0.000502	8.58E-05	0	0.000588	0.000382	0.002067	0.003037	0.000546	9.33E-05	0	0.000639	0.001528	0.005907	0.008074	189.2863	25.14402	0
Statewide Totals	2036	UBUS	Aggregate	Aggregate	Gasoline	2166.154	192909.577	192909.6	0	8664.616	0	0.02047	0	0.004948	0.025418	0.000261	0	3.39E-06	0.000265	0.000475	0.0071	0.00784	0.000284	0	3.69E-06	0.000288	0.001898	0.020287	0.022473	217.1728	0	0.534612
Statewide Totals	2036	UBUS	Aggregate	Aggregate	Diesel	1129.848	114620.9684	114621	0	4519.392	0	0.042456	0	0	0.042456	0.000806	0	0	0.000806	0.000913	0.004838	0.006556	0.000842	0	0	0.000842	0.00365	0.013822	0.018314	139.7061	0	0
Statewide Totals	2036	UBUS	Aggregate	Aggregate	Electricity	9008.192	940271.3439	0	940271.3	36032.77	1797987	0	0	0	0	0	0	0	0	0.008111	0.019952	0.028063	0	0	0	0	0	0.032445	0.057006	0.089451	0	0	0
Statewide Totals	2036	UBUS	Aggregate	Aggregate	Natural Ga:	3661.208	440714.0987	440714.1	0	14644.83	0	0.051296	0	0	0.051296	0.000369	0	0	0.000369	0.003917	0.018596	0.022882	0.000385	0	0	0.000385	0.015669	0.053132	0.069186	909.6907	0	0
Statewide Totals	2037	HHDT	Aggregate	Aggregate	Gasoline	44.37926	5250.05584	5250.056	0	887.9402	0	0.014516	0	0	0.014516	6.58E-06	0	4.3E-07	7.01E-06	2.89E-05	0.000181	0.000217	7.16E-06	0	4.68E-07	7.63E-06	0.000116	0.000517	0.00064	10.34177	0	0.044472
Statewide Totals	2037	HHDT	Aggregate	Aggregate	Diesel	366473	52202884.81	52202885	0	6148266	0	76.04891	27.05869	17.81513	120.9227	1.499692	0.01113	0	1.510822	0.512759	1.648315	3.671897	1.567502	0.011633	0	1.579135	2.051035	4.709473	8.339643	75541.24	5127.808	0
Statewide Totals	2037	HHDT	Aggregate	Aggregate	Electricity	57816.95	6501114.253	0	6501114	775541.9	11847345	0	0	0	0	0	0	0	0	0.062106	0.108868	0.170974	0	0	0	0	0	0.248424	0.31105	0.559474	0	0	0
Statewide Totals	2037	HHDT	Aggregate	Aggregate	Natural Ga:	21321.63	1314341.231	1314341	0	156766.8	0	0.570024	0.191709	0	0.761732	0.002289	0.000588	0	0.002876	0.013039	0.076597	0.092512	0.002489	0.000639	0	0.003128	0.052157	0.218849	0.274134	1659.905	204.1459	0
Statewide Totals	2037	LDA	Aggregate	Aggregate	Gasoline	12490536	490642603.9	4.91E+08	0	57976254	0	11.9267	0	11.24057	23.16727	0.343994	0	0.066855	0.410849	1.08167	1.450599	2.943118	0.374124	0	0.072711	0.446836	4.326682	4.144568	8.918086	127300	0	3589.541
Statewide Totals	2037	LDA	Aggregate	Aggregate	Diesel	12336.18	378856.5485	378856.5	0	52730.14	0	0.022451	0	0	0.022451	0.00138	0	0	0.00138	0.000835	0.001135	0.00335	0.001442	0	0	0.001442	0.003341	0.003242	0.008025	84.01289	0	0
Statewide Totals	2037	LDA	Aggregate	Aggregate	Electricity	1539042	64899846.69	0	64899847	7329823	25056697	0	0	0	0	0	0	0	0	0.14308	0.109901	0.252981	0	0	0	0	0	0.572319	0.314004	0.886322	0	0	0
Statewide Totals	2037	LDA	Aggregate	Aggregate	Plug-in Hyb	566049.1	23161965.66	9699997	13461969	2340613	4065916	0.071032	0	0.292879	0.363911	0.006819	0	0.002718	0.009537	0.051063	0.035978	0.096578	0.007416	0	0.002956	0.010372	0.204254	0.102795	0.317421	3070.822	0	147.3376
Statewide Totals	2037	LDT1	Aggregate	Aggregate	Gasoline	1035140	36202323.06	36202323	0	4577742	0	1.620294	0	1.150293	2.770588	0.033083	0	0.006761	0.039844	0.079811	0.13086	0.250516	0.035981	0	0.007354	0.043334	0.319246	0.373886	0.736466	11239.1	0	346.2724
Statewide Totals	2037	LDT1	Aggregate	Aggregate	Diesel	9.138516	359.5215751	359.5216	0	42.71889	0	2.45E-05	0	0	2.45E-05	1.91E-06	0	0	1.91E-06	7.93E-07	1.26E-06	3.96E-06	1.99E-06	0	0	1.99E-06	3.17E-06	3.59E-06	8.75E-06	0.139696	0	0
Statewide Totals	2037	LDT1	Aggregate	Aggregate	Electricity	18957.76	838409.2659	0	838409.3	91932.17	323695.2	0	0	0	0	0	0	0	0	0.001848	0.001418	0.003266	0	0	0	0	0	0.007394	0.004052	0.011445	0	0	0
Statewide Totals	2037	LDT1	Aggregate	Aggregate	Plug-in Hyb	14666.61	632708.2849	258513.5	374194.8	60646.45	113018	0.001897	0	0.007578	0.009475	0.000147	0	5.41E-05	0.000201	0.001395	0.000986	0.002582	0.00016	0	5.89E-05	0.000218	0.00558	0.002817	0.008615	82.1176	0	4.266553
Statewide Totals	2037	LDT2	Aggregate	Aggregate	Gasoline	7328229	280661381	2.81E+08	0	33892451	0	9.307756	0	8.227448	17.5352	0.206785	0	0.039791	0.246575	0.618745	0.989701	1.855021	0.224897	0	0.043276	0.268173	2.474979	2.827716	5.570868	88233.13	0	2585.141
Statewide Totals	2037	LDT2	Aggregate	Aggregate	Diesel	27287.28	1059323.675	1059324	0	127259.4	0	0.036305	0	0	0.036305	0.004781	0	0	0.004781	0.002335	0.003725	0.010841	0.004997	0	0	0.004997	0.009342	0.010642	0.024981	307.9813	0	0
Statewide Totals	2037	LDT2	Aggregate	Aggregate	Electricity	224043.1	6784071.348	0	6784071	1083800	2619211	0	0	0	0	0	0	0	0	0.014956	0.011481	0.026437	0	0	0	0	0	0.059825	0.032803	0.092628	0	0	0
Statewide Totals	2037	LDT2	Aggregate	Aggregate	Plug-in Hyb	166675.8	6836972.983	2824169	4012804	689204.6	1211986	0.020707	0	0.086201	0.106908	0.00177	0	0.00069	0.00246	0.015073	0.010646	0.028179	0.001925	0	0.000751	0.002675	0.060292	0.030417	0.093384	895.7317	0	51.51593
Statewide Totals	2037	LHDT1	Aggregate	Aggregate	Gasoline	419861.1	14830779.74	14830780	0	6255304	0	0.798166	0.012929	3.175537	3.986632	0.018364	0	0.000924	0.019288	0.032696	0.446304	0.498288	0.019972	0	0.001005	0.020978	0.130785	1.275155	1.426917	10725.97	51.22996	168.8868
Statewide Totals	2037	LHDT1	Aggregate	Aggregate	Diesel	305531.5	10510526.24	10510526	0	3843202	0	7.113993	0.454162	0	7.568155	0.239526	0.008797	0	0.248323	0.034758	0.316294	0.599375	0.250356	0.009195	0	0.259551	0.139031	0.903698	1.30228	6341.83	40.96048	0
Statewide Totals	2037	LHDT1	Aggregate	Aggregate	Electricity	191149.9	9875218.445	0	9875218	2674975	5981569	0	0	0	0	0	0	0	0	0.021771	0.148588	0.170359	0	0	0	0	0	0.087084	0.424537	0.511621	0	0	0
Statewide Totals	2037	LHDT2	Aggregate	Aggregate	Gasoline	55265.51	1876769.877	1876770	0	823373.8	0	0.088899	0.001618	0.410588	0.501105	0.002133	0	9.51E-05	0.002228	0.004138	0.065891	0.072256	0.002319	0	0.000103	0.002423	0.01655	0.188259	0.207232	1520.202	7.834689	21.66791
Statewide Totals	2037	LHDT2	Aggregate	Aggregate	Diesel	141759.1	4799043.838	4799044	0	1783151	0	3.381091	0.20935	0	3.590441	0.115314	0.004094	0	0.119407	0.01587	0.168488	0.303765	0.120528	0.004279	0	0.124806	0.063481	0.481394	0.669681	3390.162	30.62194	0
Statewide Totals	2037	LHDT2	Aggregate	Aggregate	Electricity	49020.34	2431334.699	0	2431335	649426.7	1458128	0	0	0	0	0	0	0	0	0.00536	0.04268	0.048041	0	0	0	0	0	0.021441	0.121944	0.143385	0	0	0
Statewide Totals	2037	MCY	Aggregate	Aggregate	Gasoline	732696.9	4100737.573	4100738	0	1465394	0	2.237769	0	0.145372	2.383141	0.009472	0	0.005152	0.014624	0.00452	0.018985	0.038129	0.010156	0	0.005515	0.015671	0.018081	0.054243	0.087995	857.6629	0	65.62574
Statewide Totals	2037	MDV	Aggregate	Aggregate	Gasoline	4369780	159952004.6	1.6E+08	0	19953753	0	6.6405	0	5.546322	12.18682	0.123089	0	0.025107	0.148197	0.35263	0.571977	1.072803	0.133871	0	0.027306	0.161177	1.410519	1.63422	3.205916	61365.55	0	1875.747
Statewide Totals	2037	MDV	Aggregate	Aggregate	Diesel	54452.69	1903292.653	1903293	0	245339.3	0	0.049367	0	0	0.049367	0.004373	0	0	0.004373	0.004196	0.006891	0.01546	0.00457	0	0	0.00457	0.016784	0.019689	0.041043	742.5803	0	0
Statewide Totals	2037	MDV	Aggregate	Aggregate	Electricity	209210.1	6277499.083	0	6277499	1009043	2423633	0	0	0	0	0	0	0	0	0.01384	0.010635	0.024475	0	0	0	0	0	0.055358	0.030387	0.085745	0	0	0
Statewide Totals	2037	MDV	Aggregate	Aggregate	Plug-in Hyb	103825.9	4160100.222	1721221	2438880	429320.1	736614.3	0.012607	0	0.053693	0.0663	0.001117	0	0.000449	0.001566	0.009171	0.006476	0.017214	0.001215	0	0.000489	0.001704	0.036686	0.018504	0.056893	545.4287	0	39.14882
Statewide Totals	2037	MH	Aggregate	Aggregate	Gasoline	51513.31	525143.1694	525143.2	0	5153.392	0	0.075633	0	0.002742	0.078375	0.000647	0	1.78E-06	0.000649	0.001737	0.008916	0.011301	0.000704	0	1.94E-06	0.000706	0.006946	0.025474	0.033126	1072.948	0	0.171157
Statewide Totals	2037	MH	Aggregate	Aggregate	Diesel	33042.07	300325.4439	300325.4	0	3304.207	0	0.95532	0	0	0.95532	0.018598	0	0	0.018598	0.001324	0.005079	0.025002	0.019439	0	0	0.019439	0.005297	0.014512	0.039248	346.608	0	0
Statewide Totals	2037	MHDT	Aggregate	Aggregate	Gasoline	32222.78	1589405.017	1589405	0	644713.4	0	0.195499	0.002444	0.237798	0.435742	0.002004	0	0.000309	0.002314	0.005256	0.026951	0.03452	0.00218	0	0.000336	0.002516	0.021024	0.077002	0.100542	2682.152	17.51163	28.2213
Statewide Totals	2037	MHDT	Aggregate	Aggregate	Diesel	264677.2	10659167.12	10659167	0	3184474	0	5.013166	2.333598	4.713142	12.05991	0.05053	0.001096	0	0.051626	0.035249	0.181753	0.268627	0.052814	0.001146	0	0.05396	0.140995	0.519293	0.714249	12097.04	587.8107	0
Statewide Totals	2037	MHDT	Aggregate	Aggregate	Electricity	112555.8	5663019.117	0	5663019	1441129	6048998	0	0	0	0	0	0	0	0	0.018727	0.048304	0.067031	0	0	0	0	0	0.074908	0.138011	0.212919	0	0	0
Statewide Totals	2037	MHDT	Aggregate	Aggregate	Natural Ga:	4156.72	164818.9983	164819	0	37196.28	0	0.013179	0.029583	0	0.042762	0.000224	1E-04	0	0.000324	0.000545	0.002822	0.003692	0.000244	0.000109	0	0.000353	0.00218	0.008064	0.010597	159.2252	25.04307	0
Statewide Totals	2037	OBUS	Aggregate	Aggregate	Gasoline	7974.225	264709.8036	264709.8	0	159548.3	0	0.075772	0.000479	0.066049	0.1423	0.000315	0	4.93E-05	0.000364	0.000875	0.00452	0.00576	0.000342	0	5.37E-05	0.000396	0.003502	0.012915	0.016812	456.2796	3.170353	5.244377
Statewide Totals	2037	OBUS	Aggregate	Aggregate	Diesel	11652.59	766321.5414	766321.5	0	137755.2	0	0.921953	0.098716	0.179592	1.200261	0.016383	9.44E-05	0	0.016478	0.002534	0.018095	0.037107	0.017124	9.87E-05	0	0.017223	0.010137	0.051701	0.079061	1045.331	29.54054	0
Statewide Totals	2037	OBUS	Aggregate	Aggregate	Electricity	1901.817	139626.7514	0	139626.8	38051.54	151057.3	0	0	0	0	0	0	0	0	0.000462	0.001191	0.001653	0	0	0	0	0	0.001847	0.003403	0.00525	0	0	0
Statewide Totals	2037	OBUS	Aggregate	Aggregate	Natural Ga:	965.589	51637.25493	51637.25	0	8593.742	0	0.005338	0.001603	0	0.006942	6.63E-05	4.94E-06	0	7.13E-05	0.000171	0.000886	0.001128	7.21E-05	5.37E-06	0	7.75E-05	0.000683	0.002533	0.003293	47.50269	1.248861	0
Statewide Totals	2037	SBUS	Aggregate	Aggregate	Gasoline	6044.132	314285.3654	314285.4	0	24176.53	0	0.059773	0.005411	0.023641	0.088826	0.000337	0	1.52E-05	0.000353	0.000693	0.00555	0.006596	0.000367	0	1.65E-05	0.000383	0.002771	0.015858	0.019013	283.1124	16.70384	1.401746
Statewide Totals	2037	SBUS	Aggregate	Aggregate	Diesel	14546.23	304322.0568	304322.1	0	210629.4	0	0.446853	0.186599	0.150121	0.783572	0.002879	8.32E-05	0	0.002962	0.001006	0.00532	0.009288	0.003009	8.7E-05	0	0.003096	0.004025	0.015199	0.022321	369.7069	32.87468	0

Statewide Totals	2037	SBUS	Aggregate	Aggregate	Electricity	5472.327	166962.4742	0	166962.5	68964.21	182570	0	0	0	0	0	0	0	0.000498	0.001471	0.001969	0	0	0	0	0.001991	0.004202	0.006193	0	0	0
Statewide Totals	2037	SBUS	Aggregate	Aggregate	Natural Ga:	5404.502	113518.0273	113518	0	78257.19	0	0.062917	0.030618	0	0.093535	0.000493	8.63E-05	0	0.00058	0.000375	0.002031	0.002986	0.000536	9.39E-05	0	0.00063	0.001502	0.005803	0.007935	185.0709	25.08467	0
Statewide Totals	2037	UBUS	Aggregate	Aggregate	Gasoline	2048.628	182228.8596	182228.9	0	8194.513	0	0.015615	0	0.004246	0.01986	0.000242	0	2.72E-06	0.000244	0.000435	0.006622	0.007302	0.000263	0	2.96E-06	0.000266	0.001742	0.01892	0.020927	188.7087	0	0.458851
Statewide Totals	2037	UBUS	Aggregate	Aggregate	Diesel	1001.054	103795.981	103796	0	4004.216	0	0.039482	0	0	0.039482	0.000757	0	0	0.000757	0.000844	0.004378	0.005979	0.000791	0	0	0.000791	0.003377	0.012509	0.016677	128.0098	0	0
Statewide Totals	2037	UBUS	Aggregate	Aggregate	Electricity	10162.15	1082414.805	0	1082415	40648.61	2081175	0	0	0	0	0	0	0	0	0.0093	0.022968	0.032268	0	0	0	0	0.0372	0.065624	0.102824	0	0	0
Statewide Totals	2037	UBUS	Aggregate	Aggregate	Natural Ga:	3104.902	360923.2746	360923.3	0	12419.61	0	0.040479	0	0	0.040479	0.000334	0	0	0.000334	0.003186	0.015207	0.018727	0.000349	0	0	0.000349	0.012744	0.043448	0.056541	720.5954	0	0
Statewide Totals	2038	HHDT	Aggregate	Aggregate	Gasoline	42.8273	5044.123793	5044.124	0	856.8886	0	0.013574	0	6.34E-06	0.01358	6.34E-06	0	4.19E-07	6.76E-06	2.78E-05	0.000174	0.000209	6.9E-06	0	4.55E-07	7.36E-06	0.000111	0.000498	0.000616	9.858255	0	0.042481
Statewide Totals	2038	HHDT	Aggregate	Aggregate	Diesel	370536.1	53224068.27	53224068	0	6245673	0	76.72128	27.46442	17.96509	122.1508	1.519935	0.011282	0	1.531217	0.523001	1.68607	3.740288	1.588659	0.011792	0	1.600452	2.092005	4.817343	8.5098	76464.91	5197.573	0
Statewide Totals	2038	HHDT	Aggregate	Aggregate	Electricity	63837.65	7068836.772	0	7068837	849895.7	12887542	0	0	0	0	0	0	0	0	0.06747	0.118514	0.185984	0	0	0	0	0.269882	0.338611	0.608493	0	0	0
Statewide Totals	2038	HHDT	Aggregate	Aggregate	Natural Ga:	21115.93	1303070.747	1303071	0	155959	0	0.535662	0.189461	0	0.725123	0.002268	0.000595	0	0.002863	0.012928	0.075624	0.091414	0.002466	0.000647	0	0.003113	0.05171	0.216067	0.270891	1634.194	202.5888	0
Statewide Totals	2038	LDA	Aggregate	Aggregate	Gasoline	12511403	491273604.1	4.91E+08	0	58093670	0	11.68665	0	11.09748	22.78414	0.327891	0	0.063597	0.391488	1.083074	1.456201	2.930763	0.356612	0	0.069167	0.425779	4.332295	4.160575	8.918648	126659.1	0	3564.485
Statewide Totals	2038	LDA	Aggregate	Aggregate	Diesel	11502.08	357856.6959	357856.7	0	49302.55	0	0.019541	0	0	0.019541	0.00117	0	0	0.00117	0.000789	0.001072	0.003032	0.001223	0	0	0.001223	0.003156	0.003064	0.007443	78.15425	0	0
Statewide Totals	2038	LDA	Aggregate	Aggregate	Electricity	1574858	65908565.91	0	65908566	7484428	25446146	0	0	0	0	0	0	0	0	0.145304	0.111625	0.256929	0	0	0	0	0.581214	0.318929	0.900143	0	0	0
Statewide Totals	2038	LDA	Aggregate	Aggregate	Plug-in Hyb	571920.9	23269548.12	9692437	13577111	2364893	4100692	0.071045	0	0.295929	0.366973	0.006498	0	0.002623	0.009121	0.051301	0.0362	0.096621	0.007067	0	0.002853	0.00992	0.205202	0.103428	0.31855	3071.094	0	148.0781
Statewide Totals	2038	LDT1	Aggregate	Aggregate	Gasoline	1023974	35927223.96	35927224	0	4538423	0	1.458132	0	1.099733	2.557865	0.030716	0	0.006288	0.037004	0.079206	0.130059	0.246269	0.033407	0	0.006838	0.040245	0.316824	0.371598	0.728668	11048.66	0	338.4246
Statewide Totals	2038	LDT1	Aggregate	Aggregate	Diesel	9.410007	367.5613731	367.5614	0	43.90835	0	2.3E-05	0	0	2.3E-05	1.91E-06	0	0	1.91E-06	8.1E-07	1.29E-06	4.01E-06	1.99E-06	0	0	1.99E-06	3.24E-06	3.69E-06	8.93E-06	0.142267	0	0
Statewide Totals	2038	LDT1	Aggregate	Aggregate	Electricity	20195.3	881517.7173	0	881517.7	97577.43	340338.6	0	0	0	0	0	0	0	0	0.001943	0.001492	0.003435	0	0	0	0	0.007774	0.004262	0.012035	0	0	0
Statewide Totals	2038	LDT1	Aggregate	Aggregate	Plug-in Hyb	15603.88	663870.5149	271058.9	392811.6	64522.06	118640.8	0.001991	0	0.008063	0.010054	0.000152	0	5.68E-05	0.000209	0.001464	0.001036	0.002708	0.000165	0	6.18E-05	0.000227	0.005854	0.002959	0.009041	86.17794	0	4.535618
Statewide Totals	2038	LDT2	Aggregate	Aggregate	Gasoline	7377592	281715217.4	2.82E+08	0	34100550	0	8.974389	0	8.18065	17.15504	0.197786	0	0.038084	0.23587	0.621076	0.996355	1.853301	0.21511	0	0.04142	0.25653	2.484304	2.846729	5.587563	87934.67	0	2577.398
Statewide Totals	2038	LDT2	Aggregate	Aggregate	Diesel	27560.18	1065748.966	1065749	0	128391.6	0	0.036296	0	0	0.036296	0.004813	0	0	0.004813	0.00235	0.003759	0.010922	0.00503	0	0	0.00503	0.009398	0.010741	0.02517	307.7689	0	0
Statewide Totals	2038	LDT2	Aggregate	Aggregate	Electricity	236008.9	7052773.369	0	7052773	1137331	2722953	0	0	0	0	0	0	0	0	0.015549	0.01194	0.027488	0	0	0	0	0.062195	0.034114	0.096308	0	0	0
Statewide Totals	2038	LDT2	Aggregate	Aggregate	Plug-in Hyb	173040.5	7025400.743	2894339	4131062	715522.6	1247704	0.021243	0	0.089497	0.110741	0.001763	0	0.000696	0.002459	0.015488	0.010954	0.028902	0.001917	0	0.000757	0.002675	0.061953	0.031297	0.095925	918.8264	0	53.33165
Statewide Totals	2038	LHDT1	Aggregate	Aggregate	Gasoline	408882.8	14340023.85	14340024	0	6091745	0	0.661529	0.012406	3.044882	3.718818	0.017589	0	0.000874	0.018463	0.031614	0.431536	0.481613	0.01913	0	0.00095	0.02008	0.126457	1.232959	1.379497	10292.66	49.70459	163.4858
Statewide Totals	2038	LHDT1	Aggregate	Aggregate	Diesel	296595.5	10137259.55	10137260	0	3730798	0	6.252343	0.425912	0	6.678256	0.221842	0.008545	0	0.230386	0.033523	0.305062	0.568971	0.231873	0.008931	0	0.240804	0.134093	0.871604	1.246501	6088.237	39.52468	0
Statewide Totals	2038	LHDT1	Aggregate	Aggregate	Electricity	214073.8	10806846.27	0	10806846	2995610	6551505	0	0	0	0	0	0	0	0	0.023825	0.162606	0.186431	0	0	0	0	0.0953	0.464588	0.559888	0	0	0
Statewide Totals	2038	LHDT2	Aggregate	Aggregate	Gasoline	53439.57	1805837.307	1805837	0	796170	0	0.077955	0.001526	0.384607	0.464088	0.002058	0	8.97E-05	0.002147	0.003981	0.0634	0.069529	0.002238	0	9.75E-05	0.002335	0.015925	0.181144	0.199404	1448.57	7.539577	20.86943
Statewide Totals	2038	LHDT2	Aggregate	Aggregate	Diesel	138648	4649116.073	4649116	0	1744017	0	3.125577	0.199285	0	3.324862	0.109584	0.003998	0	0.113581	0.015374	0.163224	0.29218	0.114539	0.004178	0	0.118717	0.061497	0.466354	0.646569	3266.858	29.82693	0
Statewide Totals	2038	LHDT2	Aggregate	Aggregate	Electricity	54913.63	2663699.861	0	2663700	727380.4	1598646	0	0	0	0	0	0	0	0	0.005872	0.046759	0.052632	0	0	0	0	0.02349	0.133598	0.157088	0	0	0
Statewide Totals	2038	MCY	Aggregate	Aggregate	Gasoline	736724.6	4103673.811	4103674	0	1473449	0	2.223343	0	0.142225	2.365569	0.009529	0	0.005217	0.014747	0.004524	0.018999	0.038269	0.010218	0	0.005586	0.015804	0.018094	0.054282	0.08818	857.7046	0	65.31398
Statewide Totals	2038	MDV	Aggregate	Aggregate	Gasoline	4389046	160289829.1	1.6E+08	0	20033320	0	6.36401	0	5.491924	11.85593	0.117911	0	0.024053	0.141964	0.353379	0.575022	1.070364	0.128239	0	0.026159	0.154398	1.413515	1.64292	3.210834	61021.34	0	1864.768
Statewide Totals	2038	MDV	Aggregate	Aggregate	Diesel	53624.22	1875922.102	1875922	0	241647.7	0	0.044747	0	0	0.044747	0.003938	0	0	0.003938	0.004136	0.006802	0.014875	0.004116	0	0	0.004116	0.016543	0.019433	0.040092	724.1288	0	0
Statewide Totals	2038	MDV	Aggregate	Aggregate	Electricity	219403.8	6495657.005	0	6495657	1054062	2507860	0	0	0	0	0	0	0	0	0.01432	0.011009	0.025329	0	0	0	0	0.057282	0.031454	0.088736	0	0	0
Statewide Totals	2038	MDV	Aggregate	Aggregate	Plug-in Hyb	107965	4279859.666	1766021	2513839	446435.4	759254.2	0.01295	0	0.055836	0.068786	0.001111	0	0.000453	0.001564	0.009435	0.006673	0.017672	0.001209	0	0.000493	0.001701	0.037742	0.019065	0.058508	560.1757	0	40.58815
Statewide Totals	2038	MH	Aggregate	Aggregate	Gasoline	50488.49	518456.4512	518456.5	0	5050.868	0	0.07084	0	0.002655	0.073495	0.000639	0	1.76E-06	0.000641	0.001715	0.008798	0.011154	0.000695	0	1.92E-06	0.000697	0.006858	0.025138	0.032693	1058.826	0	0.167522
Statewide Totals	2038	MH	Aggregate	Aggregate	Diesel	32693.16	297675.0383	297675	0	3269.316	0	0.914552	0	0	0.914552	0.017119	0	0	0.017119	0.001313	0.005033	0.023464	0.017893	0	0	0.017893	0.00525	0.014379	0.037522	343.3605	0	0
Statewide Totals	2038	MHDT	Aggregate	Aggregate	Gasoline	30950.67	1513915.407	1513915	0	619261	0	0.175242	0.002302	0.228545	0.406089	0.001914	0	0.000299	0.002213	0.005006	0.025663	0.032882	0.002082	0	0.000325	0.002406	0.020026	0.073323	0.095755	2538.269	16.70898	26.8764
Statewide Totals	2038	MHDT	Aggregate	Aggregate	Diesel	259226.3	10486246.21	10486246	0	3120599	0	4.672307	2.227788	4.536003	11.4361	0.048363	0.000998	0	0.04936	0.034677	0.178692	0.262729	0.050549	0.001043	0	0.051592	0.138709	0.510548	0.700849	11828.25	571.1845	0
Statewide Totals	2038	MHDT	Aggregate	Aggregate	Electricity	125805.9	6258987.596	0	6258988	1610914	6687885	0	0	0	0	0	0	0	0	0.020698	0.053365	0.074063	0	0	0	0	0.082792	0.15247	0.235262	0	0	0
Statewide Totals	2038	MHDT	Aggregate	Aggregate	Natural Ga:	4110.023	162627.3184	162627.3	0	36828.57	0	0.012661	0.029199	0	0.04186	0.000222	9.96E-05	0	0.000322	0.000538	0.002784	0.003643	0.000242	0.000108	0	0.00035	0.002151	0.007953	0.010454	156.5522	24.7572	0
Statewide Totals	2038	OBUS	Aggregate	Aggregate	Gasoline	7692.919	250073.5406	250073.5	0	153919.9	0	0.07061	0.000459	0.062186	0.133254	0.000299	0	4.74E-05	0.000346	0.000827	0.004271	0.005443	0.000325	0	5.15E-05	0.000376	0.003308	0.012201	0.015886	428.6509	3.049475	5.03791
Statewide Totals	2038	OBUS	Aggregate	Aggregate	Diesel	11685.03	769361.7126	769361.7	0	137958.3	0	0.886286	0.094045	0.174509	1.15484	0.01546	8.89E-05	0	0.015549	0.002544	0.018216	0.03631	0.016159	9.29E-05	0	0.016252	0.010177	0.052047	0.078476	1044.52	29.17592	0
Statewide Totals	2038	OBUS	Aggregate	Aggregate	Electricity	2089.978	150941.1083	0	150941.1	41816.28	163285.2	0	0	0	0	0	0	0	0	0.000499	0.001288	0.001787	0	0	0	0	0.001997	0.003679	0.005676	0	0	0
Statewide Totals	2038	OBUS	Aggregate	Aggregate	Natural Ga:	975.8619	52032.41696	52032.42	0	8685.171	0	0.005252	0.001618	0	0.00687	6.75E-05	5.05E-06	0	7.26E-05	0.000172	0.000893	0.001138	7.34E-05	5.49E-06	0	7.89E-05	0.000688	0.002552	0.003319	47.70076	1.259914	0
Statewide Totals	2038	SBUS	Aggregate	Aggregate	Gasoline	5835.368	302846.8545	302846.9	0	23341.47	0	0.056925	0.005163	0.022852	0.08494	0.000337	0	1.53E-05	0.000353	0.000668	0.005348	0.006368	0.000367	0	1.66E-05	0.000383	0.002671	0.015279	0.018334	271.3531	16.04796	1.348619
Statewide Totals	2038	SBUS	Aggregate	Aggregate	Diesel	14095.48	293322.2738	293322.3	0	204102.5	0	0.371278	0.164839	0.148943	0.68506	0.002401	6.66E-05	0	0.002468	0.00097	0.005127	0.008565	0.00251	6.96E-05	0	0.00258	0.00388	0.014649	0.021108	354.5329	31.49627	0
Statewide Totals	2038	SBUS	Aggregate	Aggregate	Electricity	6110.542	185798.7774	0	185798.8	77015.76	203159.2	0	0	0	0	0	0	0	0	0.000554	0.001637	0.002191	0	0	0	0	0.002215	0.004676	0.006892	0	0	0
Statewide Totals	2038	SBUS	Aggregate	Aggregate	Natural Ga:	5362.055	111296.2872	111296.3	0	77642.55	0	0.059712	0.030338	0	0.090049	0.000484	8.66E-05	0	0.00057	0.000368	0.001991	0.00293	0.000526	9.42E-05	0	0.00062	0.001472	0.00569	0.007782	180.5573	24.91217	0
Statewide Totals	2038	UBUS	Aggregate	Aggregate	Gasoline	1993.389	178062.084	178062.1	0	7973.555	0	0.013146	0	0.003852	0.016998	0.000232	0	2.34E-06	0.000234	0.000418	0.00642	0.007071	0.000252	0	2.54E-06	0.000254	0.001671	0.018342	0.020268	173.402	0	0.416886
Statewide Totals	2038	UBUS	Aggregate	Aggregate	Diesel	913.2037	95389.71741	95389.72	0	3652.815	0	0.03667	0	0	0.03667	0.000708	0	0	0.000708	0.000782	0.004021	0.005511	0.00074	0	0	0.00074	0.003127	0.01149	0.015356	118.1374	0	0
Statewide Totals	2038	UBUS	Aggregate	Aggregate	Electricity	11180.04	1202037.985	0	1202038	44720.16	2313018	0	0	0	0	0	0	0	0	0.010335	0.025507	0.035842	0	0	0	0	0.041341	0.072876	0.114217	0	0	0
Statewide Totals	2038	UBUS	Aggregate	Aggregate	Natural Ga:	2581.235	294702.911	294702.9	0	10324.94	0	0.033727	0	0	0.033727	0.000313	0	0	0.000313	0.002577	0.012393	0.015283	0.000327	0	0	0.000327	0.010309	0.03541	0.046045	592.7922	0	0
Statewide Totals	2039	HHDT	Aggregate	Aggregate	Gasoline	41.38491	4847.819836	4847.82	0	828.0293	0	0.012702	0	2.56E-05	0.012728	6.13E-06	0	4.09E-07	6.54E-06	2.67E-05	0.000168	0.000201	6.67E-06	0	4.44E-07	7.11E-06	0.000107	0.00048	0.000594	9.407744	0	0.040676
Statewide Totals	2039	HHDT	Aggregate	Aggregate	Diesel	375037.1	54310648.99	54310649	0	6352022	0	77.59848	27.92784	18.13988	123.6662	1.547925	0.011462	0	1.559387	0.533884	1.723853	3.817124	1.617916	0.01198	0	1.629896	2.135535	4.925295	8.690725	77565.99	5279.553	0
Statewide Totals	2039	HHDT	Aggregate	Aggregate	Electricity	69871.49	7619937.824	0	7619938	923922.8	13893109	0	0	0	0	0	0	0	0	0.072673	0.127874	0.200547	0	0	0	0	0.290692	0.365354	0.656047	0	0	0
Statewide Totals	2039	HHDT	Aggregate	Aggregate	Natural Ga:	20911.51	1291710.741	1291711	0	155210.1	0	0.502802	0.187532	0	0.690334	0.002246	0.000602	0	0.002848	0.012815	0.074692	0.090355	0.002443	0.000654	0	0.003097	0.051259	0.213407	0.267763	1612.796	201.1319	0
Statewide Totals	2039	LDA	Aggregate	Aggregate	Gasoline	12539053	492024848.6	4.92E+08	0	58240175	0	11.47902	0	10.97556	22.45458	0.31393	0	0.060711	0.374641	1.08473	1.45796	2.917331	0.341428	0	0.066028	0.407456	4.338919	4.165601	8.911976	126188.4	0	3545.232
Statewide Totals	2039	LDA	Aggregate	Aggregate	Diesel	10841.69	341745.5411	341745.5	0	46609.59	0	0.017228	0	0	0.017228	0.001004	0	0	0.001004	0.000753	0.001022	0.002779	0.001049	0	0	0.001049	0.003014	0.00292	0.006983	73.6477	0	0
Statewide Totals	2039	LDA	Aggregate	Aggregate	Electricity	1606904	66772762.47	0	66772762	7621967	25779797	0	0	0	0	0	0	0	0	0.147209	0.113102	0.260311	0	0	0	0	0.588835	0.32315	0.911984	0	0	0
Statewide Totals	2039	LDA	Aggregate	Aggregate	Plug-in Hyb	577006.6	23355296.28	9683302	13671995	2385922	4129350	0.07097	0	0.29857	0.369541	0.006215	0	0.002535	0.008749	0.05149	0.03635	0.096588	0.006759	0	0.002757	0.009516	0.205958	0.103856	0.31933	3067.903	0	148.6892
Statewide Totals	2039	LDT1	Aggregate	Aggregate	Gasoline	1013975	35688993.85	35688994	0	4504498	0	1.322011	0	1.055913	2.377924	0.028542	0	0.005852	0.034395	0.078681	0.129035	0.242111	0.031043	0	0.006365	0.037408	0.314723	0.368671	0.720802	10881.4	0	331.4761
Statewide Totals	2039	LDT1	Aggregate	Aggregate	Diesel	9.662423	374.7765241	374.7765	0	45.00378	0	2.17E-05	0	0	2.17E-05	1.91E-06	0	0	1.91E-06	8.26E-07	1.32E-06	4.06E-06	2E-06	0	0	2E-06	3.3E-06	3.77E-06	9.07E-06	0.144606	0	0
Statewide Totals	2039	LDT1	Aggregate	Aggregate	Electricity	21381.57	920961.1391	0	920961.1	102925.2	355567	0	0	0	0	0	0	0	0	0.00203	0.001559	0.003589	0	0	0	0	0.008121	0.004454	0.012575	0	0	0
Statewide Totals	2039	LDT1	Aggregate	Aggregate	Plug-in Hyb	16495.72	692379.577	282534.7	409844.9	68209.8	123785.4	0.002075	0	0.008524	0.010599	0.000156	0	5.93E-05	0.000216	0.001526	0.001081	0.002823	0.00017	0	6.45E-05	0.000235	0.006106	0.003087	0.009428	89.81217	0	4.791534
Statewide Totals	2039	LDT2	Aggregate	Aggregate	Gasoline	7426168	282709067.5	2.83E+08	0	34304574	0	8.67601	0	8.145345	16.82136	0.189879	0	0.03658	0.226459	0.623267	0.999912	1.849639	0.20651	0	0.039784	0.246295	2.493069	2.856893	5.596256	87708.35	0	2572.251
Statewide Totals	2039	LDT2	Aggregate	Aggregate	Diesel	27830.23	1071854.386	1071854	0	129505.5	0	0.036273	0	0	0.036273	0.004839	0	0	0.004839	0.002363	0.003782	0.010985	0.005058	0	0	0.005058	0.009452	0.010806	0.025317	307.8522	0	0
Statewide Totals	2039	LDT2	Aggregate	Aggregate	Electricity	247086	7290954.787	0	7290955	1186399	2814910	0	0	0	0	0	0	0	0	0.016074	0.012347	0.02842	0	0	0	0	0.064295	0.035276	0.099571	0	0	0
Statewide Totals	2039	LDT2	Aggregate	Aggregate	Plug-in Hyb	178818.3	7190258.346	2955501	4234758	739413.8	1279023	0.02169	0	0.09249	0.11418	0.001754	0	0.000701	0.002454	0.015852	0.011215	0.029521	0.001907	0	0.000762	0.002669	0.063407	0.032044	0.09812	938.1127	0	54.9727
Statewide Totals	2039	LHDT1	Aggregate	Aggregate	Gasoline	398654.2	13892107.6	13892108	0	5939353	0	0.54665	0.011933	2.92906	3.487644	0.016911	0	0.000831	0.017742	0.030627	0.418057	0.466426	0.018392	0	0.000904	0.019296	0.122507	1.194447	1.336251	9922.744	48.29845	158.4385
Statewide Totals	2039	LHDT1	Aggregate	Aggregate	Diesel	288004.6	9792440.149	9792440	0	3622735	0	5.477836	0.399507	0	5.877342	0.206512	0.008308	0	0.21482	0.032383	0.294685	0.541888	0.21585	0.008684	0	0.224533	0.129532	0.841957	1.196022	5861.049	38.15697	0
Statewide Totals	2039	LHDT1	Aggregate	Aggregate	Electricity	236417.3	11669379.54	0	11669380	3308040	7076024	0	0	0	0	0	0	0	0	0.025727	0.175584	0.20131	0	0	0	0	0.102906	0.501668	0.604575	0	0	0
Statewide Totals	2039	LHDT2	Aggregate	Aggregate	Gasoline	51713.8	1741171.547	1741172	0	770458.5	0	0.067048	0.001441	0.360674	0.429162	0.001989	0	8.46E-05	0.002073	0.003839	0.06113	0.067042	0.002163	0	9.2E-05	0.002255	0.015355	0.174657	0.192267	1386.808	7.261877	20.11324
Statewide Totals	2039	LHDT2	Aggregate	Aggregate	Diesel	135567.8	4508629.603	4508630	0	1705273	0	2.885701	0.18972	0	3.075421	0.104352	0.003911	0	0.108264	0.01491	0.158292	0.281465	0.109071	0.004088	0	0.113159	0.059639	0.452262	0.62506	3155.835	29.04038	0
Statewide Totals	2039	LHDT2	Aggregate	Aggregate	Electricity	60668.12	2879739.494	0	2879739	803471.1	1728449	0	0	0	0	0	0	0	0	0.006349	0.050552	0.056901	0	0	0	0	0.025395	0.144434	0.169829	0	0	0
Statewide Totals	2039	MCY	Aggregate	Aggregate	Gasoline	740735.2	4106448.112	4106448	0	1481470	0	2.210359	0	0.13926	2.349619	0.009575	0	0.005276	0.014851	0.004527	0.019012	0.038389	0.010267	0	0.00565	0.015918	0.018106	0.054319	0.088343	857.722	0	65.0367
Statewide Totals	2039	MDV	Aggregate	Aggregate	Gasoline	4405017	160570782.2	1.61E+08	0	20103409	0	6.045764	0	5.433319	11.47908	0.112759	0	0.022951	0.135709	0.353998	0.576059	1.065767	0.122635	0	0.024961	0.147596	1.415993	1.645884	3.209473	60713.11	0	1854.073
Statewide Totals	2039	MDV	Aggregate	Aggregate	Diesel	52832.68	1852099.677	1852100	0	238293.9	0	0.039755	0	0	0.039755	0.003526	0	0	0.003526	0.004083	0.006705	0.014314	0.003686	0	0	0.003686	0.016333	0.019156	0.039175	708.2777	0	0
Statewide Totals	2039	MDV	Aggregate	Aggregate	Electricity	228880.3	6689326.664	0	6689327	1095477	2582632	0	0	0	0	0	0	0	0	0.014747	0.011341	0.026088	0	0	0	0	0.05899	0.032402	0.091392	0	0	0

Statewide Totals	2039	MDV	Aggregate	Aggregate	Plug-in Hyb	111801.2	4386634.618	1805907	2580728	462298	779456.7	0.013241	0	0.057822	0.071063	0.001105	0	0.000456	0.001561	0.009671	0.006842	0.018074	0.001202	0	0.000496	0.001698	0.038683	0.019549	0.05993	572.7738	0	41.91884
Statewide Totals	2039	MH	Aggregate	Aggregate	Gasoline	49562.08	512426.955	512427	0	4958.19	0	0.066247	0	0.002564	0.068811	0.000636	0	1.75E-06	0.000638	0.001695	0.008696	0.011028	0.000692	0	1.9E-06	0.000693	0.006778	0.024845	0.032317	1046.39	0	0.164192
Statewide Totals	2039	MH	Aggregate	Aggregate	Diesel	32346.18	295076.2186	295076.2	0	3234.618	0	0.877572	0	0	0.877572	0.015768	0	0	0.015768	0.001301	0.004988	0.022057	0.01648	0	0	0.01648	0.005204	0.014252	0.035937	340.4385	0	0
Statewide Totals	2039	MHDT	Aggregate	Aggregate	Gasoline	29744.18	1445275.215	1445275	0	595121.6	0	0.157123	0.002169	0.219061	0.378353	0.001834	0	0.000288	0.002122	0.004779	0.024501	0.031403	0.001994	0	0.000314	0.002308	0.019118	0.070003	0.091429	2409.213	15.95296	25.61404
Statewide Totals	2039	MHDT	Aggregate	Aggregate	Diesel	254277.1	10340344.53	10340345	0	3063047	0	4.390919	2.132434	4.37383	10.89718	0.046489	0.000921	0	0.04741	0.034195	0.176176	0.257781	0.048591	0.000962	0	0.049553	0.136779	0.50336	0.689693	11599.37	555.9529	0
Statewide Totals	2039	MHDT	Aggregate	Aggregate	Electricity	138879.4	6831158.27	0	6831158	1778315	7298136	0	0	0	0	0	0	0	0	0.02259	0.058245	0.080835	0	0	0	0	0.090361	0.166415	0.256776	0	0	0
Statewide Totals	2039	MHDT	Aggregate	Aggregate	Natural Gas	4059.471	160463.6092	160463.6	0	36440.18	0	0.012204	0.028783	0	0.040987	0.000221	9.91E-05	0	0.00032	0.000531	0.002746	0.003597	0.00024	0.000108	0	0.000348	0.002123	0.007847	0.010318	154.1949	24.44188	0
Statewide Totals	2039	OBUS	Aggregate	Aggregate	Gasoline	7431.582	237239.4728	237239.5	0	148691.1	0	0.064986	0.00044	0.05791	0.123336	0.000284	0	4.55E-05	0.000329	0.000785	0.004051	0.005165	0.000308	0	4.95E-05	0.000358	0.003138	0.011575	0.015071	404.5147	2.937218	4.840264
Statewide Totals	2039	OBUS	Aggregate	Aggregate	Diesel	11731.18	772398.105	772398.1	0	138298.8	0	0.856566	0.089691	0.169848	1.116104	0.014781	8.48E-05	0	0.014866	0.002554	0.018329	0.035749	0.015449	8.86E-05	0	0.015538	0.010217	0.052369	0.078124	1044.125	28.8521	0
Statewide Totals	2039	OBUS	Aggregate	Aggregate	Electricity	2269.209	161163.0456	0	161163	45402.34	174350.3	0	0	0	0	0	0	0	0	0.000533	0.001375	0.001908	0	0	0	0	0.002132	0.003928	0.00606	0	0	0
Statewide Totals	2039	OBUS	Aggregate	Aggregate	Natural Gas	986.7014	52362.15787	52362.16	0	8781.643	0	0.005182	0.001634	0	0.006816	6.85E-05	5.15E-06	0	7.36E-05	0.000173	0.000899	0.001146	7.45E-05	5.6E-06	0	8.01E-05	0.000693	0.002568	0.003341	47.85677	1.271898	0
Statewide Totals	2039	SBUS	Aggregate	Aggregate	Gasoline	5601.113	290302.2114	290302.2	0	22404.45	0	0.054275	0.004887	0.022145	0.081306	0.000336	0	1.53E-05	0.000352	0.00064	0.005126	0.006118	0.000366	0	1.66E-05	0.000383	0.00256	0.014645	0.017588	258.535	15.31708	1.289112
Statewide Totals	2039	SBUS	Aggregate	Aggregate	Diesel	13653.4	282650.3042	282650.3	0	197701.3	0	0.307191	0.145813	0.146903	0.599907	0.001997	5.38E-05	0	0.002051	0.000935	0.00494	0.007926	0.002087	5.62E-05	0	0.002144	0.003739	0.014115	0.019997	339.8652	30.15197	0
Statewide Totals	2039	SBUS	Aggregate	Aggregate	Electricity	6758.419	204675.1032	0	204675.1	85198.91	223790.4	0	0	0	0	0	0	0	0	0.00061	0.001803	0.002413	0	0	0	0	0.00244	0.005151	0.007592	0	0	0
Statewide Totals	2039	SBUS	Aggregate	Aggregate	Natural Gas	5289.709	108730.3605	108730.4	0	76594.98	0	0.056259	0.029883	0	0.086142	0.000472	8.65E-05	0	0.000559	0.00036	0.001945	0.002864	0.000514	9.41E-05	0	0.000608	0.001438	0.005559	0.007605	175.4452	24.6016	0
Statewide Totals	2039	UBUS	Aggregate	Aggregate	Gasoline	1888.701	169131.3601	169131.4	0	7554.802	0	0.007921	0	0.003101	0.011022	0.000211	0	1.72E-06	0.000213	0.000385	0.006015	0.006613	0.00023	0	1.88E-06	0.000232	0.001538	0.017187	0.018957	146.7227	0	0.347263
Statewide Totals	2039	UBUS	Aggregate	Aggregate	Diesel	692.5845	72789.47327	72789.47	0	2770.338	0	0.029056	0	0	0.029056	0.000573	0	0	0.000573	0.000613	0.003062	0.004248	0.000599	0	0	0.000599	0.002451	0.008749	0.011799	91.51364	0	0
Statewide Totals	2039	UBUS	Aggregate	Aggregate	Electricity	12374.77	1334230.296	0	1334230	49499.09	2568222	0	0	0	0	0	0	0	0	0.011427	0.028312	0.039739	0	0	0	0	0.045709	0.080891	0.1266	0	0	0
Statewide Totals	2039	UBUS	Aggregate	Aggregate	Natural Gas	2062.713	234850.0282	234850	0	8250.851	0	0.027429	0	0	0.027429	0.000266	0	0	0.000266	0.002056	0.00985	0.012172	0.000278	0	0	0.000278	0.008225	0.028143	0.036646	476.5721	0	0
Statewide Totals	2040	HHDT	Aggregate	Aggregate	Gasoline	39.87658	4658.980429	4658.98	0	797.8507	0	0.01189	0	5.58E-05	0.011945	5.92E-06	0	3.97E-07	6.31E-06	2.57E-05	0.000162	0.000194	6.43E-06	0	4.32E-07	6.87E-06	0.000103	0.000463	0.000573	8.983229	0	0.038823
Statewide Totals	2040	HHDT	Aggregate	Aggregate	Diesel	380017.3	55464868.77	55464869	0	6468132	0	78.59107	28.44928	18.34309	125.3834	1.577876	0.011662	0	1.589538	0.545426	1.763161	3.898126	1.649221	0.012189	0	1.66141	2.181705	5.037603	8.880719	78813.79	5373.753	0
Statewide Totals	2040	HHDT	Aggregate	Aggregate	Electricity	75911.52	8153464.859	0	8153465	997545.8	14866687	0	0	0	0	0	0	0	0	0.077708	0.13695	0.214657	0	0	0	0	0.31083	0.391284	0.702115	0	0	0
Statewide Totals	2040	HHDT	Aggregate	Aggregate	Natural Gas	20706.72	1280367.579	1280368	0	154498.2	0	0.469991	0.185902	0	0.655892	0.002216	0.000608	0	0.002823	0.012702	0.073763	0.089289	0.00241	0.000661	0	0.003071	0.050809	0.210751	0.264631	1591.965	199.742	0
Statewide Totals	2040	LDA	Aggregate	Aggregate	Gasoline	12570406	492838889.3	4.93E+08	0	58404644	0	11.28957	0	10.86771	22.15729	0.301987	0	0.058145	0.360133	1.086525	1.45996	2.906617	0.328439	0	0.063238	0.391677	4.346098	4.171314	8.90909	125844.4	0	3530.412
Statewide Totals	2040	LDA	Aggregate	Aggregate	Diesel	10264.84	329214.8806	329214.9	0	44360.78	0	0.014805	0	0	0.014805	0.000855	0	0	0.000855	0.000726	0.000983	0.002564	0.000894	0	0	0.000894	0.002903	0.002808	0.006605	70.10114	0	0
Statewide Totals	2040	LDA	Aggregate	Aggregate	Electricity	1635561	67512037.71	0	67512038	7744337	26065219	0	0	0	0	0	0	0	0	0.148839	0.114366	0.263205	0	0	0	0	0.595354	0.326761	0.922115	0	0	0
Statewide Totals	2040	LDA	Aggregate	Aggregate	Plug-in Hyb	581462.6	23424598.33	9674382	13750216	2404348	4152975	0.070898	0	0.300885	0.371783	0.005971	0	0.002454	0.008425	0.051642	0.036471	0.096539	0.006495	0	0.002669	0.009163	0.20657	0.104202	0.319936	3064.802	0	149.2147
Statewide Totals	2040	LDT1	Aggregate	Aggregate	Gasoline	1005802	35490910.75	35490911	0	4477502	0	1.208173	0	1.018282	2.226455	0.026668	0	0.005474	0.032142	0.078244	0.128171	0.238556	0.029004	0	0.005953	0.034957	0.312976	0.366202	0.714135	10738.06	0	325.6138
Statewide Totals	2040	LDT1	Aggregate	Aggregate	Diesel	9.90247	381.2667887	381.2668	0	46.02657	0	2.07E-05	0	0	2.07E-05	1.92E-06	0	0	1.92E-06	8.41E-07	1.35E-06	4.1E-06	2E-06	0	0	2E-06	3.36E-06	3.85E-06	9.21E-06	0.146718	0	0
Statewide Totals	2040	LDT1	Aggregate	Aggregate	Electricity	22508.22	956755.9176	0	956755.9	107948.6	369386.7	0	0	0	0	0	0	0	0	0.002109	0.00162	0.003729	0	0	0	0	0.008437	0.004629	0.013066	0	0	0
Statewide Totals	2040	LDT1	Aggregate	Aggregate	Plug-in Hyb	17339.96	718325.932	292975.3	425350.6	71700.72	128468.6	0.002152	0	0.008961	0.011112	0.000161	0	6.17E-05	0.000222	0.001584	0.001121	0.002927	0.000175	0	6.71E-05	0.000242	0.006335	0.003204	0.009781	93.11745	0	5.03368
Statewide Totals	2040	LDT2	Aggregate	Aggregate	Gasoline	7472298	283619292.3	2.84E+08	0	34499623	0	8.423501	0	8.122741	16.54624	0.182993	0	0.035262	0.218256	0.625274	1.003153	1.846683	0.199022	0	0.038351	0.237373	2.501096	2.866152	5.604621	87531.47	0	2568.791
Statewide Totals	2040	LDT2	Aggregate	Aggregate	Diesel	28086.33	1077357.395	1077357	0	130556.2	0	0.036258	0	0	0.036258	0.004864	0	0	0.004864	0.002375	0.003803	0.011042	0.005084	0	0	0.005084	0.009501	0.010865	0.02545	308.011	0	0
Statewide Totals	2040	LDT2	Aggregate	Aggregate	Electricity	257247	7500005.489	0	7500005	1230977	2895621	0	0	0	0	0	0	0	0	0.016535	0.012704	0.029239	0	0	0	0	0.066139	0.036297	0.102436	0	0	0
Statewide Totals	2040	LDT2	Aggregate	Aggregate	Plug-in Hyb	184048.6	7333967.935	3008697	4325271	761040.8	1306361	0.022077	0	0.0952	0.117277	0.001744	0	0.000704	0.002448	0.016169	0.011443	0.03006	0.001897	0	0.000766	0.002663	0.064675	0.032694	0.100032	954.8735	0	56.45435
Statewide Totals	2040	LHDT1	Aggregate	Aggregate	Gasoline	387594.1	13460711.53	13460712	0	5774574	0	0.441202	0.011435	2.806746	3.259383	0.016247	0	0.000779	0.017026	0.029676	0.405075	0.451776	0.01767	0	0.000847	0.018517	0.118703	1.157356	1.294576	9565.09	46.79069	153.1843
Statewide Totals	2040	LHDT1	Aggregate	Aggregate	Diesel	279651.5	9471571.84	9471572	0	3517664	0	4.800894	0.374634	0	5.175529	0.192329	0.008077	0	0.200406	0.031322	0.285029	0.516757	0.201025	0.008442	0	0.209467	0.125287	0.814368	1.149123	5650.312	36.8404	0
Statewide Totals	2040	LHDT1	Aggregate	Aggregate	Electricity	258120.4	12468150.93	0	12468151	3611407	7562019	0	0	0	0	0	0	0	0	0.027488	0.187603	0.21509	0	0	0	0	0.10995	0.536008	0.645958	0	0	0
Statewide Totals	2040	LHDT2	Aggregate	Aggregate	Gasoline	50076.47	1682114.544	1682115	0	746064.8	0	0.058216	0.001361	0.338193	0.39777	0.001928	0	8.01E-05	0.002008	0.003708	0.059057	0.064773	0.002097	0	8.71E-05	0.002184	0.014834	0.168733	0.185751	1330.777	6.999507	19.40252
Statewide Totals	2040	LHDT2	Aggregate	Aggregate	Diesel	132779.4	4382017.759	4382018	0	1670198	0	2.678589	0.181418	0	2.860007	0.100018	0.003833	0	0.10385	0.014491	0.153847	0.272188	0.10454	0.004006	0	0.108546	0.057964	0.439562	0.606072	3056.541	28.33573	0
Statewide Totals	2040	LHDT2	Aggregate	Aggregate	Electricity	66268.2	3080586.502	0	3080587	877501.7	1849156	0	0	0	0	0	0	0	0	0.006792	0.054078	0.060869	0	0	0	0	0.027166	0.154507	0.181673	0	0	0
Statewide Totals	2040	MCY	Aggregate	Aggregate	Gasoline	744784.9	4109040.061	4109040	0	1489570	0	2.198444	0	0.136686	2.33513	0.009616	0	0.005331	0.014946	0.004529	0.019024	0.038499	0.010311	0	0.005709	0.016021	0.018118	0.054353	0.088492	857.7658	0	64.80363
Statewide Totals	2040	MDV	Aggregate	Aggregate	Gasoline	4421312	160839364.4	1.61E+08	0	20174022	0	5.785238	0	5.390557	11.17579	0.108084	0	0.021929	0.130013	0.35459	0.577035	1.061639	0.117551	0	0.02385	0.141401	1.418361	1.648672	3.208434	60455.86	0	1845.695
Statewide Totals	2040	MDV	Aggregate	Aggregate	Diesel	52182.28	1832197.581	1832198	0	235517.2	0	0.036521	0	0	0.036521	0.003197	0	0	0.003197	0.004039	0.006623	0.013859	0.003342	0	0	0.003342	0.016157	0.018922	0.038421	694.8813	0	0
Statewide Totals	2040	MDV	Aggregate	Aggregate	Electricity	237628.6	6859905.59	0	6859906	1133317	2648490	0	0	0	0	0	0	0	0	0.015124	0.011633	0.026757	0	0	0	0	0.060494	0.033237	0.093731	0	0	0
Statewide Totals	2040	MDV	Aggregate	Aggregate	Plug-in Hyb	115325.3	4480983.302	1841072	2639911	476870.2	797331.8	0.013498	0	0.059647	0.073145	0.001098	0	0.000458	0.001556	0.009879	0.006992	0.018427	0.001195	0	0.000498	0.001693	0.039516	0.019977	0.061186	583.8752	0	43.13734
Statewide Totals	2040	MH	Aggregate	Aggregate	Gasoline	48713.74	506893.1693	506893.2	0	4873.322	0	0.062296	0	0.002473	0.064768	0.000633	0	1.73E-06	0.000635	0.001676	0.008602	0.010913	0.000689	0	1.89E-06	0.00069	0.006705	0.024576	0.031972	1034.991	0	0.161159
Statewide Totals	2040	MH	Aggregate	Aggregate	Diesel	32038.8	292746.535	292746.5	0	3203.88	0	0.844183	0	0	0.844183	0.014487	0	0	0.014487	0.001291	0.004948	0.020726	0.015142	0	0	0.015142	0.005163	0.014139	0.034443	337.822	0	0
Statewide Totals	2040	MHDT	Aggregate	Aggregate	Gasoline	28631.58	1383265.692	1383266	0	572860.6	0	0.142151	0.002048	0.208973	0.353172	0.001761	0	0.000279	0.00204	0.004574	0.023451	0.030066	0.001915	0	0.000304	0.002219	0.018297	0.067004	0.087521	2293.556	15.26088	24.47063
Statewide Totals	2040	MHDT	Aggregate	Aggregate	Diesel	249717.3	10214210.29	10214210	0	3010472	0	4.136071	2.044638	4.222694	10.4034	0.044783	0.00085	0	0.045633	0.033778	0.173997	0.253408	0.046808	0.000888	0	0.047696	0.135111	0.497135	0.679942	11397.01	541.8056	0
Statewide Totals	2040	MHDT	Aggregate	Aggregate	Electricity	151920.9	7387000.367	0	7387000	1945014	7890755	0	0	0	0	0	0	0	0	0.024428	0.062987	0.087415	0	0	0	0	0.097713	0.179963	0.277676	0	0	0
Statewide Totals	2040	MHDT	Aggregate	Aggregate	Natural Gas	4005.752	158366.8663	158366.9	0	36033.5	0	0.011781	0.028345	0	0.040126	0.000219	9.84E-05	0	0.000318	0.000524	0.00271	0.003552	0.000239	0.000107	0	0.000346	0.002095	0.007744	0.010184	151.8971	24.09853	0
Statewide Totals	2040	OBUS	Aggregate	Aggregate	Gasoline	7186.576	225978.8631	225978.9	0	143789	0	0.060379	0.000422	0.055273	0.116075	0.00027	0	4.36E-05	0.000313	0.000747	0.003859	0.004919	0.000293	0	4.74E-05	0.000341	0.002989	0.011025	0.014355	383.4202	2.832126	4.656405
Statewide Totals	2040	OBUS	Aggregate	Aggregate	Diesel	11786.85	775394.0674	775394.1	0	138787.6	0	0.827985	0.085772	0.165753	1.07951	0.01405	8.04E-05	0	0.01413	0.002564	0.018437	0.035132	0.014685	8.4E-05	0	0.014769	0.010257	0.052678	0.077704	1044.109	28.60581	0
Statewide Totals	2040	OBUS	Aggregate	Aggregate	Electricity	2438.896	170331.3216	0	170331.3	48797.44	184276.3	0	0	0	0	0	0	0	0	0.000563	0.001453	0.002016	0	0	0	0	0.002253	0.004152	0.006405	0	0	0
Statewide Totals	2040	OBUS	Aggregate	Aggregate	Natural Gas	997.7402	52650.26614	52650.27	0	8879.888	0	0.005138	0.001651	0	0.006788	6.92E-05	5.25E-06	0	7.45E-05	0.000174	0.000904	0.001152	7.53E-05	5.71E-06	0	8.1E-05	0.000696	0.002582	0.00336	47.98967	1.283754	0
Statewide Totals	2040	SBUS	Aggregate	Aggregate	Gasoline	5324.019	275599.6902	275599.7	0	21296.07	0	0.050441	0.004568	0.020917	0.075925	0.000335	0	1.53E-05	0.00035	0.000608	0.004866	0.005823	0.000364	0	1.66E-05	0.000381	0.00243	0.013903	0.016714	243.6312	14.45962	1.219001
Statewide Totals	2040	SBUS	Aggregate	Aggregate	Diesel	13217.72	272312.9311	272312.9	0	191392.6	0	0.253418	0.129746	0.143917	0.527081	0.001667	4.45E-05	0	0.001712	0.000901	0.004759	0.007372	0.001743	4.65E-05	0	0.001789	0.003602	0.013598	0.01899	325.7531	28.84533	0
Statewide Totals	2040	SBUS	Aggregate	Aggregate	Electricity	7420.965	223717.9361	0	223717.9	93584.16	244608.8	0	0	0	0	0	0	0	0	0.000667	0.001971	0.002638	0	0	0	0	0.002667	0.005631	0.008298	0	0	0
Statewide Totals	2040	SBUS	Aggregate	Aggregate	Natural Gas	5183.322	105687.8665	105687.9	0	75054.5	0	0.05237	0.02923	0	0.0816	0.000459	8.6E-05	0	0.000545	0.00035	0.001891	0.002786	0.000499	9.36E-05	0	0.000593	0.001398	0.005403	0.007394	169.4513	24.13337	0
Statewide Totals	2040	UBUS	Aggregate	Aggregate	Gasoline	1778.493	162429.5009	162429.5	0	7113.972	0	0.00334	0	0.002279	0.005618	0.000196	0	1.09E-06	0.000197	0.000359	0.005706	0.006261	0.000213	0	1.18E-06	0.000214	0.001434	0.016302	0.017951	125.5445	0	0.274374
Statewide Totals	2040	UBUS	Aggregate	Aggregate	Diesel	554.9125	58293.98038	58293.98	0	2219.65	0	0.022905	0	0	0.022905	0.000465	0	0	0.000465	0.00048	0.002447	0.003392	0.000486	0	0	0.000486	0.001921	0.006992	0.009398	72.38933	0	0
Statewide Totals	2040	UBUS	Aggregate	Aggregate	Electricity	13356.36	1438022.127	0	1438022	53425.44	2770884	0	0	0	0	0	0	0	0	0.0123	0.030514	0.042814	0	0	0	0	0.049201	0.087183	0.136384	0	0	0
Statewide Totals	2040	UBUS	Aggregate	Aggregate	Natural Gas	1679.65	193040.2454	193040.2	0	6718.598	0	0.023174	0	0	0.023174	0.000235	0	0	0.000235	0.001708	0.008073	0.010015	0.000245	0	0	0.000245	0.006832	0.023065	0.030142	394.5598	0	0
Statewide Totals	2041	HHDT	Aggregate	Aggregate	Gasoline	38.40186	4481.503852	4481.504	0	768.3445	0	0.011149	0	0.000102	0.011251	5.71E-06	0	3.85E-07	6.09E-06	2.47E-05	0.000156	0.000187	6.21E-06	0	4.19E-07	6.63E-06	9.88E-05	0.000447	0.000553	8.590738	0	0.037158
Statewide Totals	2041	HHDT	Aggregate	Aggregate	Diesel	385544	56691481.57	56691482	0	6594813	0	79.73178	29.03176	18.57441	127.338	1.609999	0.011889	0	1.621888	0.557675	1.80428	3.983843	1.682796	0.012427	0	1.695223	2.230701	5.155085	9.081009	80211.43	5480.344	0
Statewide Totals	2041	HHDT	Aggregate	Aggregate	Electricity	81913.81	8666517.529	0	8666518	1070377	15802944	0	0	0	0	0	0	0	0	0.082546	0.145675	0.228221	0	0	0	0	0.330184	0.416214	0.746398	0	0	0
Statewide Totals	2041	HHDT	Aggregate	Aggregate	Natural Gas	20503.16	1269154.452	1269154	0	153826.2	0	0.438854	0.184571	0	0.623425	0.002179	0.000614	0	0.002792	0.012591	0.072838	0.088221	0.00237	0.000667	0	0.003037	0.050364	0.208108	0.261509	1571.991	198.4261	0
Statewide Totals	2041	LDA	Aggregate	Aggregate	Gasoline	12607994	493685636.8	4.94E+08	0	58591151	0	11.12321	0	10.76944	21.89265	0.292174	0	0.056054	0.348228	1.088391	1.45995	2.89657	0.317766	0	0.060964	0.37873	4.353565	4.171286	8.903581	125570.9	0	3520.661
Statewide Totals	2041	LDA	Aggregate	Aggregate	Diesel	9820.291	319813.3532	319813.4	0	42638.08	0	0.012959	0	0	0.012959	0.000741	0	0	0.000741	0.000705	0.000952	0.002398	0.000775	0	0	0.000775	0.00282	0.002719	0.006314	67.39928	0	0
Statewide Totals	2041	LDA	Aggregate	Aggregate	Electricity	1661159	68140176.49	0	68140176	7853140	26307732	0	0	0	0	0	0	0	0	0.150223	0.115441	0.265664	0	0	0	0	0.600893	0.329831	0.930724	0	0	0
Statewide Totals	2041	LDA	Aggregate	Aggregate	Plug-in Hyb	585406.4	23480451.9	9666384	13814068	2420655	4172260	0.070745	0	0.302934	0.373679	0.005758	0	0.002382	0.00814	0.051766	0.036551	0.096457	0.006262	0	0.002591	0.008853	0.207062	0.104433	0.320348	3059.175	0	149.6866
Statewide Totals	2041	LDT1	Aggregate	Aggregate	Gasoline	998776.3	35320741.8	35320742	0	4455256	0	1.106297	0	0.982131	2.088428	0.025346	0	0.005177	0.030524	0.077869	0.127225	0.235618	0.027566	0	0.005631	0.033197	0.311476	0.363501	0.708174	10609.99	0	320.4921
Statewide Totals	2041	LDT1	Aggregate	Aggregate	Diesel	10.12152	386.9878607	386.9879	0	46.95362	0	1.97E-05	0	0	1.97E-05	1.92E-06	0	0	1.92E-06	8.53E-07	1.37E-06	4.14E-06	2.01E-06	0	0	2.01E-06	3.41E-06	3.91E-06	9.32E-06	0.148535	0	0
Statewide Totals	2041	LDT1	Aggregate	Aggregate	Electricity	23576.38	989077.2832	0	989077.3	112655.8	381865.5	0	0	0	0	0	0	0	0	0.002181	0.001675	0.003856	0	0	0	0	0.008722	0.004787	0.013509	0	0	0
Statewide Totals	2041	LDT1	Aggregate	Aggregate	Plug-in Hyb	18135.31	741807.2287	302421.5	439385.8	74989.51	132707.6	0.002218	0	0.009372	0.01159	0.000164	0	6.39E-05	0.000228	0.001635	0.001158	0.003021	0.000179	0	6.95E-05	0.000248	0.006542	0.003308	0.010098	96.02502	0	5.26171
Statewide Totals	2041	LDT2	Aggregate	Aggregate	Gasoline	7516537	284435079	2.84E+08	0	34685784	0	8.196577	0	8.10067	16.29725	0.177436	0	0.034193	0.211629	0.627072	1.004621	1.843323	0.192978	0	0.037188	0.230166	2.50829	2.870347	5.608802	87373.1	0	2567.087

Statewide Totals	2041	LDT2	Aggregate	Aggregate	Diesel	28322.12	1082122.131	1082122	0	131519.6	0	0.036179	0	0	0.036179	0.004881	0	0	0.004881	0.002386	0.003815	0.011082	0.005102	0	0	0.005102	0.009543	0.0109	0.025545	308.1063	0	0
Statewide Totals	2041	LDT2	Aggregate	Aggregate	Electricity	266473.1	7681227.459	0	7681227	1271079	2965588	0	0	0	0	0	0	0	0	0.016934	0.013014	0.029948	0	0	0	0	0	0.067737	0.037183	0.10492	0	0
Statewide Totals	2041	LDT2	Aggregate	Aggregate	Plug-in Hyb	188756.4	7458119.862	3054658	4403462	780507.7	1329977	0.022388	0	0.097639	0.120028	0.001733	0	0.000706	0.00244	0.016442	0.011635	0.030517	0.001885	0	0.000768	0.002653	0.065769	0.033243	0.101666	968.5581	0	57.7868
Statewide Totals	2041	LHDT1	Aggregate	Aggregate	Gasoline	377472.9	13069299.26	13069299	0	5623784	0	0.405352	0.010986	2.691333	3.107671	0.015776	0	0.000743	0.016519	0.028813	0.393296	0.438627	0.017158	0	0.000808	0.017966	0.115251	1.123702	1.256919	9245.551	45.42295	148.5764
Statewide Totals	2041	LHDT1	Aggregate	Aggregate	Diesel	271712.3	9175711.886	9175712	0	3417799	0	4.209088	0.351794	0	4.560882	0.180285	0.007856	0	0.18814	0.030343	0.276126	0.494609	0.188436	0.008211	0	0.196647	0.121374	0.78893	1.106951	5455.901	35.60228	0
Statewide Totals	2041	LHDT1	Aggregate	Aggregate	Electricity	279117.7	13206410.62	0	13206411	3904800	8011420	0	0	0	0	0	0	0	0	0.029115	0.198711	0.227826	0	0	0	0	0.116461	0.567745	0.684206	0	0	0
Statewide Totals	2041	LHDT2	Aggregate	Aggregate	Gasoline	48557.84	1628328.296	1628328	0	723439.5	0	0.052706	0.001289	0.317769	0.371765	0.001877	0	7.67E-05	0.001953	0.00359	0.057168	0.062712	0.002041	0	8.34E-05	0.002125	0.014359	0.163338	0.179822	1280.515	6.757675	18.75345
Statewide Totals	2041	LHDT2	Aggregate	Aggregate	Diesel	130106.3	4265131.167	4265131	0	1636574	0	2.484323	0.173818	0	2.65814	0.096468	0.003757	0	0.100225	0.014105	0.149743	0.264072	0.10083	0.003927	0	0.104757	0.056418	0.427837	0.589011	2965.567	27.66695	0
Statewide Totals	2041	LHDT2	Aggregate	Aggregate	Electricity	71701.03	3267050.976	0	3267051	949306.6	1961250	0	0	0	0	0	0	0	0	0.007203	0.057351	0.064553	0	0	0	0	0.02881	0.163859	0.19267	0	0	0
Statewide Totals	2041	MCY	Aggregate	Aggregate	Gasoline	748607	4111167.779	4111168	0	1497214	0	2.186916	0	0.13407	2.320987	0.009636	0	0.005378	0.015013	0.004532	0.019034	0.038578	0.010333	0	0.00576	0.016093	0.018127	0.054381	0.088602	857.441	0	64.5574
Statewide Totals	2041	MDV	Aggregate	Aggregate	Gasoline	4439114	161110283.8	1.61E+08	0	20248593	0	5.608355	0	5.357673	10.96603	0.104476	0	0.021176	0.125653	0.355188	0.577185	1.058026	0.113628	0	0.023031	0.136659	1.42075	1.649101	3.20651	60236.99	0	1840.076
Statewide Totals	2041	MDV	Aggregate	Aggregate	Diesel	51650.73	1816042.347	1816042	0	233277	0	0.033969	0	0	0.033969	0.002921	0	0	0.002921	0.004004	0.006546	0.013471	0.003053	0	0	0.003053	0.016015	0.018703	0.037771	683.6679	0	0
Statewide Totals	2041	MDV	Aggregate	Aggregate	Electricity	245679.2	7009301.533	0	7009302	1167785	2706169	0	0	0	0	0	0	0	0	0.015453	0.011889	0.027342	0	0	0	0	0.061811	0.03397	0.095781	0	0	0
Statewide Totals	2041	MDV	Aggregate	Aggregate	Plug-in Hyb	118563.6	4564137.696	1872049	2692089	490260.3	813091.1	0.013709	0	0.061324	0.075032	0.001091	0	0.00046	0.00155	0.010062	0.007121	0.018734	0.001186	0	0.0005	0.001686	0.040249	0.020346	0.062281	593.1524	0	44.25592
Statewide Totals	2041	MH	Aggregate	Aggregate	Gasoline	48033.51	502319.2936	502319.3	0	4805.273	0	0.059527	0	0.002388	0.061915	0.000631	0	1.73E-06	0.000633	0.001661	0.008524	0.010818	0.000687	0	1.88E-06	0.000688	0.006645	0.024354	0.031687	1025.581	0	0.158799
Statewide Totals	2041	MH	Aggregate	Aggregate	Diesel	31737.21	290498.1529	290498.2	0	3173.721	0	0.813268	0	0	0.813268	0.013247	0	0	0.013247	0.001281	0.00491	0.019439	0.013846	0	0	0.013846	0.005124	0.014029	0.032999	335.2983	0	0
Statewide Totals	2041	MHDT	Aggregate	Aggregate	Gasoline	27577.65	1327086.097	1327086	0	551773.7	0	0.128826	0.001935	0.198764	0.329525	0.001694	0	0.000271	0.001965	0.004389	0.0225	0.028854	0.001843	0	0.000294	0.002137	0.017554	0.064287	0.083978	2189.531	14.61009	23.40232
Statewide Totals	2041	MHDT	Aggregate	Aggregate	Diesel	245696	10105528.88	10105529	0	2964607	0	3.912317	1.966976	4.084668	9.963961	0.043346	0.000797	0	0.044143	0.033418	0.172117	0.249678	0.045306	0.000833	0	0.046139	0.133673	0.491762	0.671574	11218.46	529.0816	0
Statewide Totals	2041	MHDT	Aggregate	Aggregate	Electricity	164935.6	7929344.912	0	7929345	2111030	8468715	0	0	0	0	0	0	0	0	0.026222	0.067613	0.093835	0	0	0	0	0.104887	0.19318	0.298068	0	0	0
Statewide Totals	2041	MHDT	Aggregate	Aggregate	Natural Ga:	3950.847	156314.2078	156314.2	0	35627.62	0	0.011373	0.027895	0	0.039268	0.000218	9.76E-05	0	0.000315	0.000517	0.002675	0.003507	0.000237	0.000106	0	0.000343	0.002068	0.007643	0.010054	149.6641	23.74566	0
Statewide Totals	2041	OBUS	Aggregate	Aggregate	Gasoline	6976.769	216478.7677	216478.8	0	139591.2	0	0.057323	0.000407	0.053226	0.110956	0.000259	0	4.23E-05	0.000301	0.000716	0.003696	0.004713	0.000281	0	4.6E-05	0.000327	0.002864	0.010561	0.013752	365.7256	2.742167	4.504103
Statewide Totals	2041	OBUS	Aggregate	Aggregate	Diesel	11852.56	778398.0709	778398.1	0	139392.1	0	0.804806	0.082359	0.162342	1.049508	0.013392	7.65E-05	0	0.013468	0.002574	0.01854	0.034583	0.013997	8E-05	0	0.014077	0.010296	0.052973	0.077346	1044.749	28.42111	0
Statewide Totals	2041	OBUS	Aggregate	Aggregate	Electricity	2598.715	178497.3348	0	178497.3	51995.1	193118.9	0	0	0	0	0	0	0	0	0.00059	0.001523	0.002113	0	0	0	0	0.002361	0.004351	0.006712	0	0	0
Statewide Totals	2041	OBUS	Aggregate	Aggregate	Natural Ga:	1007.806	52857.76945	52857.77	0	8969.474	0	0.005106	0.001666	0	0.006773	6.98E-05	5.33E-06	0	7.51E-05	0.000175	0.000907	0.001157	7.59E-05	5.79E-06	0	8.17E-05	0.000699	0.002593	0.003374	48.0829	1.294657	0
Statewide Totals	2041	SBUS	Aggregate	Aggregate	Gasoline	4986.021	257901.0472	257901	0	19944.08	0	0.044943	0.004185	0.01871	0.067839	0.000332	0	1.52E-05	0.000347	0.000569	0.004553	0.005468	0.000361	0	1.66E-05	0.000377	0.002274	0.013008	0.015659	225.7723	13.42132	1.13458
Statewide Totals	2041	SBUS	Aggregate	Aggregate	Diesel	12780.6	262261.1546	262261.2	0	185063.1	0	0.208043	0.116393	0.139783	0.464218	0.001403	3.81E-05	0	0.001441	0.000867	0.004584	0.006892	0.001466	3.99E-05	0	0.001506	0.003469	0.013096	0.018071	312.2728	27.56557	0
Statewide Totals	2041	SBUS	Aggregate	Aggregate	Electricity	8094.399	242834.9479	0	242834.9	102117.4	265510.1	0	0	0	0	0	0	0	0	0.000724	0.002139	0.002863	0	0	0	0	0.002895	0.006112	0.009007	0	0	0
Statewide Totals	2041	SBUS	Aggregate	Aggregate	Natural Ga:	5043.699	102304.3777	102304.4	0	73032.76	0	0.048237	0.028383	0	0.07662	0.000444	8.51E-05	0	0.00053	0.000338	0.00183	0.002698	0.000483	9.26E-05	0	0.000576	0.001353	0.00523	0.007159	162.8504	23.51304	0
Statewide Totals	2041	UBUS	Aggregate	Aggregate	Gasoline	1806.473	165771.9901	165772	0	7225.891	0	0.003261	0	0.002267	0.005528	0.000199	0	1.09E-06	0.000201	0.000366	0.005822	0.006389	0.000217	0	1.19E-06	0.000218	0.001463	0.016635	0.018317	127.5865	0	0.276561
Statewide Totals	2041	UBUS	Aggregate	Aggregate	Diesel	448.93	47826.57688	47826.58	0	1795.72	0	0.01892	0	0	0.01892	0.000397	0	0	0.000397	0.000393	0.002003	0.002793	0.000415	0	0	0.000415	0.001572	0.005722	0.007709	59.29861	0	0
Statewide Totals	2041	UBUS	Aggregate	Aggregate	Electricity	14030.61	1512012.563	0	1512013	56122.45	2915178	0	0	0	0	0	0	0	0	0.01296	0.032084	0.045044	0	0	0	0	0.051838	0.091669	0.143507	0	0	0
Statewide Totals	2041	UBUS	Aggregate	Aggregate	Natural Ga:	1433.936	166952.0676	166952.1	0	5735.745	0	0.020529	0	0	0.020529	0.000244	0	0	0.000244	0.001467	0.006962	0.008674	0.000255	0	0	0.000255	0.005869	0.019893	0.026017	341.2632	0	0
Statewide Totals	2042	HHDT	Aggregate	Aggregate	Gasoline	36.97259	4319.704493	4319.704	0	739.7475	0	0.010388	0	0.000167	0.010556	5.52E-06	0	3.73E-07	5.89E-06	2.38E-05	0.000151	0.000181	6E-06	0	4.06E-07	6.4E-06	9.52E-05	0.000432	0.000534	8.237532	0	0.035549
Statewide Totals	2042	HHDT	Aggregate	Aggregate	Diesel	391634	57995762.61	57995763	0	6731647	0	81.05347	29.67175	18.83679	129.562	1.644804	0.012143	0	1.656947	0.57068	1.847474	4.075101	1.719175	0.012692	0	1.731867	2.282719	5.278496	9.293082	81761.44	5598.089	0
Statewide Totals	2042	HHDT	Aggregate	Aggregate	Electricity	87803.22	9155182.257	0	9155182	1141565	16694771	0	0	0	0	0	0	0	0	0.087153	0.153967	0.241119	0	0	0	0	0.34861	0.439905	0.788515	0	0	0
Statewide Totals	2042	HHDT	Aggregate	Aggregate	Natural Ga:	20308.23	1258460.494	1258460	0	153288.7	0	0.40934	0.1837	0	0.59304	0.002138	0.00062	0	0.002757	0.012485	0.07192	0.087162	0.002325	0.000674	0	0.002999	0.04994	0.205485	0.258424	1553.274	197.3005	0
Statewide Totals	2042	LDA	Aggregate	Aggregate	Gasoline	12646467	494580637.5	4.95E+08	0	58783069	0	10.98642	0	10.68152	21.66793	0.284465	0	0.05425	0.338715	1.090364	1.462273	2.891353	0.309382	0	0.059002	0.368384	4.361458	4.177923	8.907765	125429.3	0	3514.242
Statewide Totals	2042	LDA	Aggregate	Aggregate	Diesel	9481.289	312813.3409	312813.3	0	41332.57	0	0.011461	0	0	0.011461	0.000652	0	0	0.000652	0.00069	0.00093	0.002271	0.000681	0	0	0.000681	0.002759	0.002656	0.006096	65.37401	0	0
Statewide Totals	2042	LDA	Aggregate	Aggregate	Electricity	1684038	68682141.85	0	68682142	7949978	26516975	0	0	0	0	0	0	0	0	0.151418	0.116368	0.267786	0	0	0	0	0.605673	0.33248	0.938152	0	0	0
Statewide Totals	2042	LDA	Aggregate	Aggregate	Plug-in Hyb	588943.2	23529554.48	9661373	13868182	2435280	4188604	0.070702	0	0.304771	0.375473	0.005588	0	0.00232	0.007908	0.051874	0.036636	0.096418	0.006078	0	0.002523	0.0086	0.207495	0.104675	0.32077	3057.344	0	150.1295
Statewide Totals	2042	LDT1	Aggregate	Aggregate	Gasoline	992033	35170081.12	35170081	0	4435128	0	1.020728	0	0.949029	1.969756	0.02419	0	0.004904	0.029095	0.077537	0.126553	0.233185	0.026309	0	0.005334	0.031643	0.310147	0.36158	0.70337	10498.61	0	315.8919
Statewide Totals	2042	LDT1	Aggregate	Aggregate	Diesel	10.32471	392.0991119	392.0991	0	47.80188	0	1.9E-05	0	0	1.9E-05	1.93E-06	0	0	1.93E-06	8.64E-07	1.39E-06	4.18E-06	2.01E-06	0	0	2.01E-06	3.46E-06	3.97E-06	9.44E-06	0.150188	0	0
Statewide Totals	2042	LDT1	Aggregate	Aggregate	Electricity	24581.4	1018199.85	0	1018200	117037.4	393109.2	0	0	0	0	0	0	0	0	0.002245	0.001725	0.00397	0	0	0	0	0.008979	0.004929	0.013908	0	0	0
Statewide Totals	2042	LDT1	Aggregate	Aggregate	Plug-in Hyb	18881.23	763065.7238	310971.5	452094.2	78073.88	136545.9	0.002281	0	0.009758	0.012039	0.000167	0	6.6E-05	0.000233	0.001682	0.001191	0.003107	0.000182	0	7.18E-05	0.000254	0.006729	0.003404	0.010387	98.72753	0	5.475482
Statewide Totals	2042	LDT2	Aggregate	Aggregate	Gasoline	7554642	285142473.8	2.85E+08	0	34851810	0	7.94492	0	8.062978	16.0079	0.172786	0	0.033224	0.20601	0.628632	1.007067	1.841709	0.18792	0	0.036134	0.224055	2.514528	2.877334	5.615916	87253.25	0	2565.265
Statewide Totals	2042	LDT2	Aggregate	Aggregate	Diesel	28539.14	1086387.355	1086387	0	132403.9	0	0.036154	0	0	0.036154	0.004899	0	0	0.004899	0.002395	0.003831	0.011125	0.005121	0	0	0.005121	0.00958	0.010945	0.025646	308.3114	0	0
Statewide Totals	2042	LDT2	Aggregate	Aggregate	Electricity	274800.1	7838140.638	0	7838141	1306943	3026169	0	0	0	0	0	0	0	0	0.01728	0.013283	0.030563	0	0	0	0	0.069121	0.037951	0.107071	0	0	0
Statewide Totals	2042	LDT2	Aggregate	Aggregate	Plug-in Hyb	192995.6	7566282.42	3094868	4471415	798036.7	1350500	0.02268	0	0.099837	0.122517	0.001726	0	0.000708	0.002434	0.016681	0.011806	0.030921	0.001877	0	0.000771	0.002648	0.066723	0.033732	0.103103	981.1939	0	58.9883
Statewide Totals	2042	LHDT1	Aggregate	Aggregate	Gasoline	367453.1	12705249.08	12705249	0	5474504	0	0.371026	0.010552	2.581766	2.963345	0.015321	0	0.000703	0.016024	0.02801	0.38234	0.426375	0.016663	0	0.000765	0.017428	0.112041	1.092401	1.22187	8949.411	44.07885	144.0839
Statewide Totals	2042	LHDT1	Aggregate	Aggregate	Diesel	263854.1	8898710.576	8898711	0	3318952	0	3.679673	0.329977	0	4.00965	0.168733	0.007637	0	0.176369	0.029427	0.26779	0.473587	0.176362	0.007982	0	0.184344	0.11771	0.765114	1.067168	5274.979	34.38882	0
Statewide Totals	2042	LHDT1	Aggregate	Aggregate	Electricity	299342.4	13888890.52	0	13888891	4187273	8427072	0	0	0	0	0	0	0	0	0.03062	0.20898	0.2396	0	0	0	0	0.122479	0.597085	0.719564	0	0	0
Statewide Totals	2042	LHDT2	Aggregate	Aggregate	Gasoline	47131.95	1579377.901	1579378	0	702195.8	0	0.047974	0.001223	0.299546	0.348743	0.001829	0	7.33E-05	0.001902	0.003482	0.05545	0.060834	0.001989	0	7.97E-05	0.002069	0.013928	0.158428	0.174425	1235.372	6.532281	18.14848
Statewide Totals	2042	LHDT2	Aggregate	Aggregate	Diesel	127621.3	4158779.212	4158779	0	1605315	0	2.31376	0.167066	0	2.480826	0.093355	0.003686	0	0.097041	0.013753	0.146009	0.256803	0.097576	0.003853	0	0.101429	0.055011	0.417169	0.573609	2883.359	27.0528	0
Statewide Totals	2042	LHDT2	Aggregate	Aggregate	Electricity	76951.02	3440283.892	0	3440284	1018689	2065425	0	0	0	0	0	0	0	0	0.007585	0.060392	0.067976	0	0	0	0	0.030338	0.172548	0.202886	0	0	0
Statewide Totals	2042	MCY	Aggregate	Aggregate	Gasoline	752717.4	4113762.613	4113763	0	1505435	0	2.177407	0	0.131764	2.309171	0.009667	0	0.005424	0.015092	0.004535	0.019046	0.038672	0.010367	0	0.005811	0.016179	0.018139	0.054416	0.088733	857.5676	0	64.38424
Statewide Totals	2042	MDV	Aggregate	Aggregate	Gasoline	4456274	161381019.3	1.61E+08	0	20321420	0	5.433009	0	5.324817	10.75783	0.101397	0	0.020484	0.121881	0.355784	0.57815	1.055816	0.110279	0	0.022278	0.132557	1.423138	1.651858	3.207553	60076.47	0	1835.701
Statewide Totals	2042	MDV	Aggregate	Aggregate	Diesel	51253.65	1803781.516	1803782	0	231610.8	0	0.031988	0	0	0.031988	0.002696	0	0	0.002696	0.003977	0.006495	0.013167	0.002818	0	0	0.002818	0.015907	0.018557	0.037281	674.8521	0	0
Statewide Totals	2042	MDV	Aggregate	Aggregate	Electricity	253058	7140413.365	0	7140413	1199062	2756789	0	0	0	0	0	0	0	0	0.015742	0.012115	0.027856	0	0	0	0	0.062968	0.034613	0.097581	0	0	0
Statewide Totals	2042	MDV	Aggregate	Aggregate	Plug-in Hyb	121518.7	4637488.563	1899387	2738102	502479.9	826988.3	0.013908	0	0.062854	0.076762	0.001085	0	0.000461	0.001545	0.010224	0.007238	0.019007	0.001179	0	0.000501	0.001681	0.040896	0.020679	0.063256	601.7654	0	45.27597
Statewide Totals	2042	MH	Aggregate	Aggregate	Gasoline	47385.85	498105.8775	498105.9	0	4740.48	0	0.066224	0	0.002239	0.068463	0.00063	0	1.72E-06	0.000631	0.001647	0.008453	0.010731	0.000685	0	1.87E-06	0.000687	0.006589	0.024151	0.031427	1016.989	0	0.156525
Statewide Totals	2042	MH	Aggregate	Aggregate	Diesel	31432.94	288319.1633	288319.2	0	3143.294	0	0.784751	0	0	0.784751	0.012062	0	0	0.012062	0.001271	0.004873	0.018207	0.012608	0	0	0.012608	0.005085	0.013924	0.031617	332.8816	0	0
Statewide Totals	2042	MHDT	Aggregate	Aggregate	Gasoline	26599.27	1276793.018	1276793	0	532198.2	0	0.117721	0.001832	0.188684	0.308237	0.001637	0	0.000263	0.0019	0.004222	0.02165	0.027772	0.00178	0	0.000286	0.002066	0.016889	0.061858	0.080813	2097.184	14.0102	22.4268
Statewide Totals	2042	MHDT	Aggregate	Aggregate	Diesel	242148.9	10015200.45	10015200	0	2924709	0	3.701705	1.897667	3.960648	9.560019	0.042003	0.000747	0	0.04275	0.03312	0.170549	0.246419	0.043902	0.000781	0	0.044683	0.132478	0.487283	0.664445	11065	517.5867	0
Statewide Totals	2042	MHDT	Aggregate	Aggregate	Electricity	177884.4	8457779.355	0	8457779	2275859	9031661	0	0	0	0	0	0	0	0	0.027969	0.072121	0.100091	0	0	0	0	0.111877	0.206061	0.317938	0	0	0
Statewide Totals	2042	MHDT	Aggregate	Aggregate	Natural Ga:	3894.452	154321.294	154321.3	0	35213.7	0	0.010998	0.027436	0	0.038434	0.000216	9.67E-05	0	0.000313	0.00051	0.002641	0.003464	0.000235	0.000105	0	0.00034	0.002041	0.007545	0.009927	147.4822	23.37603	0
Statewide Totals	2042	OBUS	Aggregate	Aggregate	Gasoline	6748.338	207908.3801	207908.4	0	135020.7	0	0.054803	0.000391	0.052034	0.107228	0.000247	0	4.05E-05	0.000287	0.000688	0.00355	0.004525	0.000268	0	4.4E-05	0.000312	0.00275	0.010142	0.013205	349.7386	2.644133	4.332633
Statewide Totals	2042	OBUS	Aggregate	Aggregate	Diesel	11920.55	781265.2622	781265.3	0	140068	0	0.780155	0.079308	0.159421	1.018884	0.012628	7.16E-05	0	0.0127	0.002584	0.018639	0.033922	0.013199	7.48E-05	0	0.013274	0.010334	0.053254	0.076862	1045.629	28.30306	0
Statewide Totals	2042	OBUS	Aggregate	Aggregate	Electricity	2748.871	185762.8601	0	185762.9	54999.42	200988	0	0	0	0	0	0	0	0	0.000614	0.001585	0.002199	0	0	0	0	0.002457	0.004528	0.006985	0	0	0
Statewide Totals	2042	OBUS	Aggregate	Aggregate	Natural Ga:	1019.128	53111.8947	53111.89	0	9070.238	0	0.005097	0.001684	0	0.006781	7.03E-05	5.41E-06	0	7.57E-05	0.000176	0.000912	0.001163	7.65E-05	5.88E-06	0	8.23E-05	0.000703	0.002605	0.00339	48.23594	1.30713	0
Statewide Totals	2042	SBUS	Aggregate	Aggregate	Gasoline	4760.949	245925.0051	245925	0	19043.8	0	0.040998	0.003918	0.017168	0.062084	0.000329	0	1.52E-05	0.000344	0.000542	0.004341	0.005227	0.000357	0	1.65E-05	0.000374	0.002169	0.012402	0.014945	213.6595	12.72628	1.077909
Statewide Totals	2042	SBUS	Aggregate	Aggregate	Diesel	12340.69	252544.2836	252544.3	0	178693.1	0	0.170677	0.10541	0.134479	0.410567	0.001195	3.4E-05	0	0.001229	0.000835	0.004414	0.006478	0.001249	3.55E-05	0	0.001285	0.003341	0.012611	0.017236	299.5084	26.31946	0
Statewide Totals	2042	SBUS	Aggregate	Aggregate	Electricity	8779.682	262028.7502	0	262028.8	110813.4	286501.9	0	0	0	0	0	0	0	0	0.000781	0.002308	0.003089	0	0	0	0	0.003124	0.006595	0.009719	0	0	0
Statewide Totals	2042	SBUS	Aggregate	Aggregate	Natural Ga:	4872.081	98534.95074	98534.95	0	70547.73	0	0.04375	0.02735	0	0.0711	0.000428	8.38E-05	0	0.000512	0.000326	0.001763	0.002601	0.000465	9.12E-05	0	0.000557	0.001303	0.005037	0.006897	155.5398	22.74829	0
Statewide Totals	2042	UBUS	Aggregate	Aggregate	Gasoline	1836.669	169161.608	169161.6	0	7346.676	0	0.00327	0	0.002299	0.005568	0.000203	0	1.11E-06	0.000204	0.000373	0.005941	0.006519	0.000221	0	1.2E-06	0.000222	0.001493	0.016974	0.018689	129.7323	0	0.280967
Statewide Totals	2042	UBUS	Aggregate	Aggregate	Diesel	360.8859	37233.61099	37233.61	0	1443.543	0	0.013866	0	0	0.013866	0.000285	0	0	0.000285	0.000297	0.001553	0.002135	0.000298	0	0	0.000298	0.001187	0.004438	0.005923	45.07922	0	0
Statewide Totals	2042	UBUS	Aggregate	Aggregate	Electricity	14746.95	1595538.09	0	1595538	58987.81	3079208	0	0	0	0	0	0	0	0	0.013719	0.033857	0.047575	0	0	0	0	0.054874	0.096733	0.151607	0	0	0
Statewide Totals	2042	UBUS	Aggregate	Aggregate	Natural Ga:	1125.856	131395.8252	131395.8	0	4503.426	0	0.016465	0	0	0.016465	0.00023	0	0	0.00023	0.001136	0.00545	0.006816	0.00024	0	0	0.00024	0.004543	0.015573	0.020356	264.569	0	0

Statewide Totals	2043	HHDT	Aggregate	Aggregate	Gasoline	35.78123	4179.018748	4179.019	0	715.9108	0	0.009889	0	0.00025	0.010139	5.35E-06	0	3.63E-07	5.71E-06	2.3E-05	0.000147	0.000175	5.82E-06	0	3.95E-07	6.21E-06	9.21E-05	0.000419	0.000518	7.934771	0	0.034216
Statewide Totals	2043	HHDT	Aggregate	Aggregate	Diesel	398293.6	59377495.29	59377495	0	6878845	0	82.52397	30.36686	19.13353	132.0244	1.682433	0.012422	0	1.694855	0.584436	1.892711	4.172002	1.758505	0.012984	0	1.771489	2.337743	5.407746	9.516978	83453.19	5726.726	0
Statewide Totals	2043	HHDT	Aggregate	Aggregate	Electricity	93573.17	9620637.272	0	9620637	1211066	17544277	0	0	0	0	0	0	0	0	0.091541	0.16187	0.253411	0	0	0	0	0.366163	0.462486	0.828649	0	0	0
Statewide Totals	2043	HHDT	Aggregate	Aggregate	Natural Ga:	20129.66	1249070.193	1249070	0	152914.7	0	0.382868	0.18323	0	0.566098	0.002099	0.000626	0	0.002725	0.012392	0.071069	0.086186	0.002282	0.000681	0	0.002963	0.049567	0.203055	0.255585	1536.833	196.4209	0
Statewide Totals	2043	LDA	Aggregate	Aggregate	Gasoline	12686001	495453189.6	4.95E+08	0	58978985	0	10.88084	0	10.60852	21.48936	0.278179	0	0.052726	0.330906	1.092288	1.46456	2.887754	0.302545	0	0.057345	0.35989	4.369152	4.184458	8.9135	125353	0	3511.045
Statewide Totals	2043	LDA	Aggregate	Aggregate	Diesel	9199.552	307428.3899	307428.4	0	40281.56	0	0.00999	0	0	0.00999	0.000574	0	0	0.000574	0.000678	0.000913	0.002164	0.0006	0	0	0	0.0006	0.002711	0.002608	0.005919	63.79449	0	0
Statewide Totals	2043	LDA	Aggregate	Aggregate	Electricity	1704510	69144188.03	0	69144188	8036308	26695363	0	0	0	0	0	0	0	0	0.152437	0.117158	0.269595	0	0	0	0	0	0.609747	0.334738	0.944485	0	0	0
Statewide Totals	2043	LDA	Aggregate	Aggregate	Plug-in Hyb	592159.5	23571845.74	9658591	13913254	2448580	4202217	0.070675	0	0.306442	0.377118	0.005449	0	0.002266	0.007716	0.051967	0.036708	0.096391	0.005927	0	0.002465	0.008391	0.207868	0.104881	0.32114	3056.233	0	150.5615
Statewide Totals	2043	LDT1	Aggregate	Aggregate	Gasoline	985532.7	35031802.93	35031803	0	4416861	0	0.947433	0	0.918065	1.865498	0.023137	0	0.004653	0.02779	0.077232	0.125931	0.230953	0.025164	0	0.00506	0.030224	0.308928	0.359803	0.698955	10398.02	0	311.7648
Statewide Totals	2043	LDT1	Aggregate	Aggregate	Diesel	10.50974	396.5918179	396.5918	0	48.56758	0	1.83E-05	0	0	1.83E-05	1.93E-06	0	0	1.93E-06	8.74E-07	1.41E-06	4.21E-06	2.02E-06	0	0	2.02E-06	3.5E-06	4.02E-06	9.53E-06	0.151636	0	0
Statewide Totals	2043	LDT1	Aggregate	Aggregate	Electricity	25524.78	1044258.589	0	1044259	121104.9	403170	0	0	0	0	0	0	0	0	0.002302	0.00177	0.004072	0	0	0	0	0.009209	0.005056	0.014265	0	0	0
Statewide Totals	2043	LDT1	Aggregate	Aggregate	Plug-in Hyb	19577.54	782172.1819	318654.6	463517.6	80953.12	139996.1	0.002337	0	0.010118	0.012455	0.00017	0	6.79E-05	0.000238	0.001724	0.001222	0.003184	0.000185	0	7.38E-05	0.000259	0.006898	0.00349	0.010647	101.1551	0	5.674968
Statewide Totals	2043	LDT2	Aggregate	Aggregate	Gasoline	7590581	285775987.7	2.86E+08	0	35008917	0	7.727322	0	8.023797	15.75112	0.168772	0	0.032376	0.201148	0.630029	1.009234	1.840411	0.183555	0	0.035212	0.218767	2.520114	2.883527	5.622408	87162.41	0	2564.804
Statewide Totals	2043	LDT2	Aggregate	Aggregate	Diesel	28742.23	1090187.612	1090188	0	133228.6	0	0.036129	0	0	0.036129	0.004916	0	0	0.004916	0.002403	0.003845	0.011164	0.005138	0	0	0.005138	0.009614	0.010985	0.025737	308.5495	0	0
Statewide Totals	2043	LDT2	Aggregate	Aggregate	Electricity	282298.4	7972871.418	0	7972871	1338942	3078186	0	0	0	0	0	0	0	0	0.017577	0.013514	0.031091	0	0	0	0	0.070309	0.03861	0.108919	0	0	0
Statewide Totals	2043	LDT2	Aggregate	Aggregate	Plug-in Hyb	196826	7660166.808	3129980	4530187	813875.6	1368252	0.022935	0	0.101823	0.124758	0.001719	0	0.00071	0.00243	0.016888	0.011955	0.031272	0.00187	0	0.000773	0.002643	0.067551	0.034157	0.104351	992.2174	0	60.07829
Statewide Totals	2043	LHDT1	Aggregate	Aggregate	Gasoline	358626.5	12380842.41	12380842	0	5343001	0	0.344734	0.010183	2.489531	2.844448	0.014924	0	0.000673	0.015597	0.027295	0.372578	0.41547	0.016232	0	0.000732	0.016964	0.10918	1.064508	1.190652	8690.554	42.90766	140.1019
Statewide Totals	2043	LHDT1	Aggregate	Aggregate	Diesel	257074.8	8654828.744	8654829	0	3233678	0	3.293	0.311964	0	3.604964	0.159337	0.007446	0	0.166783	0.028621	0.260451	0.455855	0.166541	0.007783	0	0.174324	0.114484	0.744145	1.032953	5116.173	33.35541	0
Statewide Totals	2043	LHDT1	Aggregate	Aggregate	Electricity	318731.5	14516786.1	0	14516786	4457944	8809665	0	0	0	0	0	0	0	0	0.032004	0.218428	0.250432	0	0	0	0	0.128016	0.624079	0.752095	0	0	0
Statewide Totals	2043	LHDT2	Aggregate	Aggregate	Gasoline	45812.28	1534787.271	1534787	0	682534.7	0	0.044147	0.001163	0.283288	0.328598	0.001786	0	7.05E-05	0.001856	0.003384	0.053884	0.059124	0.001942	0	7.67E-05	0.002019	0.013535	0.153955	0.169508	1194.888	6.32512	17.59084
Statewide Totals	2043	LHDT2	Aggregate	Aggregate	Diesel	125563.1	4066031.112	4066031	0	1579426	0	2.188503	0.161822	0	2.350324	0.090834	0.003627	0	0.094462	0.013446	0.142753	0.250661	0.094942	0.003791	0	0.098733	0.053784	0.407865	0.560382	2812.291	26.55216	0
Statewide Totals	2043	LHDT2	Aggregate	Aggregate	Electricity	82008.06	3600734.394	0	3600734	1085515	2161943	0	0	0	0	0	0	0	0	0.007938	0.063208	0.071147	0	0	0	0	0.031753	0.180595	0.212348	0	0	0
Statewide Totals	2043	MCY	Aggregate	Aggregate	Gasoline	756432.4	4115765.183	4115765	0	1512865	0	2.167911	0	0.129179	2.29709	0.009693	0	0.005462	0.015156	0.004537	0.019055	0.038747	0.010396	0	0.005853	0.016248	0.018147	0.054442	0.088838	857.5828	0	64.13865
Statewide Totals	2043	MDV	Aggregate	Aggregate	Gasoline	4473253	161639902.6	1.62E+08	0	20393489	0	5.272043	0	5.288518	10.56056	0.098714	0	0.01987	0.118584	0.356355	0.579065	1.054004	0.107361	0	0.02161	0.128971	1.425421	1.654473	3.208864	59949.6	0	1832.639
Statewide Totals	2043	MDV	Aggregate	Aggregate	Diesel	50965.5	1794458.98	1794459	0	230405.6	0	0.030453	0	0	0.030453	0.002512	0	0	0.002512	0.003956	0.006455	0.012924	0.002626	0	0	0.002626	0.015824	0.018444	0.036894	667.8309	0	0
Statewide Totals	2043	MDV	Aggregate	Aggregate	Electricity	259786.6	7254283.162	0	7254283	1227309	2800752	0	0	0	0	0	0	0	0	0.015993	0.01231	0.028303	0	0	0	0	0.063972	0.035172	0.099143	0	0	0
Statewide Totals	2043	MDV	Aggregate	Aggregate	Plug-in Hyb	124225.5	4701981.022	1923468	2778513	513672.6	839193.6	0.014083	0	0.064256	0.078339	0.001079	0	0.000462	0.001541	0.010366	0.00734	0.019247	0.001174	0	0.000502	0.001676	0.041464	0.020972	0.064113	609.3467	0	46.21181
Statewide Totals	2043	MH	Aggregate	Aggregate	Gasoline	46909.93	494867.7361	494867.7	0	4692.869	0	0.078619	0	0.00209	0.080709	0.000629	0	1.72E-06	0.00063	0.001636	0.008397	0.010664	0.000684	0	1.87E-06	0.000686	0.006546	0.023993	0.031224	1010.281	0	0.154939
Statewide Totals	2043	MH	Aggregate	Aggregate	Diesel	31123.51	286170.6558	286170.7	0	3112.351	0	0.757914	0	0	0.757914	0.010925	0	0	0.010925	0.001262	0.004836	0.017023	0.011419	0	0	0.011419	0.005047	0.013818	0.030285	330.4292	0	0
Statewide Totals	2043	MHDT	Aggregate	Aggregate	Gasoline	25648.87	1231434.211	1231434	0	513182.7	0	0.106646	0.001734	0.179971	0.288351	0.001583	0	0.000255	0.001838	0.004072	0.020881	0.026791	0.001722	0	0.000278	0.001999	0.016289	0.05966	0.077948	2014.078	13.43121	21.47989
Statewide Totals	2043	MHDT	Aggregate	Aggregate	Diesel	239166.6	9950761.633	9950762	0	2891825	0	3.521729	1.837913	3.852807	9.212448	0.04092	0.000714	0	0.041633	0.032907	0.169423	0.243963	0.04277	0.000746	0	0.043516	0.131626	0.484065	0.659207	10944.3	507.5293	0
Statewide Totals	2043	MHDT	Aggregate	Aggregate	Electricity	190582.2	8964752.591	0	8964753	2437315	9571478	0	0	0	0	0	0	0	0	0.029646	0.076445	0.106091	0	0	0	0	0.118583	0.218415	0.336998	0	0	0
Statewide Totals	2043	MHDT	Aggregate	Aggregate	Natural Ga:	3844.179	152661.9848	152662	0	34878.32	0	0.010664	0.027013	0	0.037677	0.000215	9.58E-05	0	0.000311	0.000505	0.002612	0.003428	0.000234	0.000104	0	0.000338	0.002019	0.007464	0.009821	145.6463	23.03649	0
Statewide Totals	2043	OBUS	Aggregate	Aggregate	Gasoline	6518.894	200291.2509	200291.3	0	130430	0	0.05617	0.000375	0.050243	0.106787	0.000238	0	3.91E-05	0.000277	0.000662	0.00342	0.004359	0.000259	0	4.25E-05	0.000302	0.002649	0.00977	0.012721	335.532	2.54547	4.164346
Statewide Totals	2043	OBUS	Aggregate	Aggregate	Diesel	11994.29	784046.2613	784046.3	0	140836.4	0	0.760533	0.076605	0.156815	0.993954	0.011971	6.82E-05	0	0.012039	0.002593	0.018734	0.033366	0.012512	7.13E-05	0	0.012583	0.010371	0.053526	0.07648	1046.852	28.24441	0
Statewide Totals	2043	OBUS	Aggregate	Aggregate	Electricity	2889.698	192191.0856	0	192191.1	57817.08	207951.8	0	0	0	0	0	0	0	0	0.000636	0.00164	0.002275	0	0	0	0	0.002542	0.004685	0.007227	0	0	0
Statewide Totals	2043	OBUS	Aggregate	Aggregate	Natural Ga:	1030.885	53362.48504	53362.49	0	9174.877	0	0.005098	0.001703	0	0.006801	7.08E-05	5.49E-06	0	7.62E-05	0.000176	0.000916	0.001169	7.7E-05	5.97E-06	0	8.29E-05	0.000706	0.002618	0.003406	48.40058	1.320282	0
Statewide Totals	2043	SBUS	Aggregate	Aggregate	Gasoline	4648.834	239294.4951	239294.5	0	18595.34	0	0.03954	0.003766	0.016719	0.060026	0.000325	0	1.51E-05	0.000341	0.000528	0.004224	0.005092	0.000354	0	1.64E-05	0.00037	0.00211	0.01207	0.01455	207.0425	12.37532	1.048209
Statewide Totals	2043	SBUS	Aggregate	Aggregate	Diesel	11890.85	242990.9959	242991	0	172179.5	0	0.140735	0.096195	0.127983	0.364913	0.001036	3.13E-05	0	0.001067	0.000804	0.004247	0.006118	0.001083	3.27E-05	0	0.001115	0.003214	0.012134	0.016464	287.1655	25.09561	0
Statewide Totals	2043	SBUS	Aggregate	Aggregate	Natural Ga:	4674.347	94511.49042	94511.49	0	67684.54	0	0.039022	0.026165	0	0.065187	0.00041	8.22E-05	0	0.000493	0.000313	0.001691	0.002496	0.000446	8.94E-05	0	0.000536	0.00125	0.004831	0.006617	147.7579	21.86828	0
Statewide Totals	2043	UBUS	Aggregate	Aggregate	Gasoline	1866.826	172547.9774	172548	0	7467.304	0	0.003288	0	0.002316	0.005605	0.000207	0	1.12E-06	0.000208	0.000381	0.006059	0.006648	0.000225	0	1.22E-06	0.000226	0.001522	0.017312	0.019061	131.874	0	0.284374
Statewide Totals	2043	UBUS	Aggregate	Aggregate	Diesel	181.4998	17214.51472	17214.51	0	725.9993	0	0.005863	0	0	0.005863	0.000146	0	0	0.000146	0.000123	0.000704	0.000972	0.000152	0	0	0.000152	0.000493	0.002011	0.002655	19.4656	0	0
Statewide Totals	2043	UBUS	Aggregate	Aggregate	Electricity	15643.07	1704817.78	0	1704818	62572.28	3291521	0	0	0	0	0	0	0	0	0.014707	0.036175	0.050883	0	0	0	0	0.058829	0.103358	0.162187	0	0	0
Statewide Totals	2043	UBUS	Aggregate	Aggregate	Natural Ga:	729.1489	79496.01281	79496.01	0	2916.596	0	0.010577	0	0	0.010577	0.000224	0	0	0.000224	0.000652	0.003245	0.00412	0.000234	0	0	0.000234	0.002607	0.009271	0.012111	152.4417	0	0
Statewide Totals	2044	HHDT	Aggregate	Aggregate	Gasoline	34.69663	4055.16603	4055.166	0	694.2101	0	0.00954	0	0.000361	0.009901	5.2E-06	0	3.54E-07	5.55E-06	2.24E-05	0.000143	0.000171	5.65E-06	0	3.85E-07	6.04E-06	8.94E-05	0.000408	0.000503	7.670378	0	0.033027
Statewide Totals	2044	HHDT	Aggregate	Aggregate	Diesel	405462.4	60834233.65	60834234	0	7035643	0	84.09762	31.11211	19.46478	134.6745	1.722855	0.012717	0	1.735572	0.59892	1.939999	4.274491	1.800755	0.013292	0	1.814047	2.395681	5.542854	9.752582	85274.82	5865.175	0
Statewide Totals	2044	HHDT	Aggregate	Aggregate	Electricity	99225.04	10066109.3	0	10066109	1278980	18357347	0	0	0	0	0	0	0	0	0.095741	0.169427	0.265168	0	0	0	0	0.382964	0.484078	0.867042	0	0	0
Statewide Totals	2044	HHDT	Aggregate	Aggregate	Natural Ga:	19984.2	1241961.206	1241961	0	152785.6	0	0.360068	0.183288	0	0.543356	0.002067	0.000633	0	0.002699	0.012321	0.070355	0.085376	0.002248	0.000688	0	0.002936	0.049285	0.201014	0.253235	1523.895	195.9029	0
Statewide Totals	2044	LDA	Aggregate	Aggregate	Gasoline	12726626	496314486.5	4.96E+08	0	59177438	0	10.80734	0	10.55084	21.35818	0.273134	0	0.051465	0.324598	1.094187	1.466839	2.885624	0.297058	0	0.055973	0.35303	4.376748	4.190968	8.920746	125333.5	0	3510.758
Statewide Totals	2044	LDA	Aggregate	Aggregate	Diesel	8971.276	303326.3368	303326.3	0	39448	0	0.008705	0	0	0.008705	0.000509	0	0	0.000509	0.000669	0.0009	0.002078	0.000532	0	0	0.000532	0.002675	0.002571	0.005778	62.57421	0	0
Statewide Totals	2044	LDA	Aggregate	Aggregate	Electricity	1722898	69542077.6	0	69542078	8113576	26848982	0	0	0	0	0	0	0	0	0.153314	0.117839	0.271153	0	0	0	0	0	0.613256	0.336683	0.949939	0	0	0
Statewide Totals	2044	LDA	Aggregate	Aggregate	Plug-in Hyb	595148.2	23610777.33	9658689	13952089	2460938	4213947	0.07067	0	0.307994	0.378665	0.005338	0	0.002221	0.007559	0.052053	0.036774	0.096386	0.005805	0	0.002416	0.008221	0.208211	0.105067	0.3215	3056.045	0	151.0007
Statewide Totals	2044	LDT1	Aggregate	Aggregate	Gasoline	981072.2	34932814.65	34932815	0	4405235	0	0.898985	0	0.894175	1.79316	0.022261	0	0.004445	0.026706	0.077014	0.125474	0.229194	0.024211	0	0.004835	0.029046	0.308055	0.358498	0.695598	10318.42	0	308.6338
Statewide Totals	2044	LDT1	Aggregate	Aggregate	Diesel	10.62396	399.9127648	399.9128	0	49.11702	0	1.65E-05	0	0	1.65E-05	1.9E-06	0	0	1.9E-06	8.82E-07	1.42E-06	4.21E-06	1.99E-06	0	0	1.99E-06	3.53E-06	4.06E-06	9.57E-06	0.152546	0	0
Statewide Totals	2044	LDT1	Aggregate	Aggregate	Electricity	26398.72	1067414.163	0	1067414	124841.7	412110	0	0	0	0	0	0	0	0	0.002353	0.001809	0.004163	0	0	0	0	0.009413	0.00517	0.014583	0	0	0
Statewide Totals	2044	LDT1	Aggregate	Aggregate	Plug-in Hyb	20224.4	799302.792	325542.2	473760.6	83627.88	143089.8	0.002387	0	0.010453	0.01284	0.000173	0	6.96E-05	0.000243	0.001762	0.001249	0.003253	0.000188	0	7.57E-05	0.000264	0.007049	0.003567	0.01088	103.3306	0	5.86023
Statewide Totals	2044	LDT2	Aggregate	Aggregate	Gasoline	7624261	286357415.1	2.86E+08	0	35137351	0	7.540446	0	7.981533	15.52198	0.165323	0	0.031635	0.196958	0.63131	1.011203	1.839472	0.179804	0	0.034406	0.21421	2.525242	2.889153	5.628605	87098.77	0	2565.414
Statewide Totals	2044	LDT2	Aggregate	Aggregate	Diesel	28932.16	1093628.365	1093628	0	133997.9	0	0.036129	0	0	0.036129	0.004931	0	0	0.004931	0.002411	0.003857	0.0112	0.005154	0	0	0.005154	0.009644	0.011021	0.025819	308.8241	0	0
Statewide Totals	2044	LDT2	Aggregate	Aggregate	Electricity	289032	8088307.11	0	8088307	1367410	3122754	0	0	0	0	0	0	0	0	0.017832	0.013711	0.031543	0	0	0	0	0.071327	0.039175	0.110502	0	0	0
Statewide Totals	2044	LDT2	Aggregate	Aggregate	Plug-in Hyb	200296.6	7742091.376	3160850	4581242	828226.5	1383672	0.023159	0	0.103622	0.126782	0.001715	0	0.000712	0.002427	0.017068	0.012084	0.03158	0.001865	0	0.000775	0.002639	0.068274	0.034527	0.10544	1001.9	0	61.07171
Statewide Totals	2044	LHDT1	Aggregate	Aggregate	Gasoline	349280.1	12070496.52	12070497	0	5203752	0	0.314488	0.009797	2.39441	2.718695	0.014514	0	0.000632	0.015146	0.026611	0.363239	0.404995	0.015785	0	0.000687	0.016472	0.106444	1.037825	1.160741	8440.592	41.67054	136.0164
Statewide Totals	2044	LHDT1	Aggregate	Aggregate	Diesel	250272.2	8427109.393	8427109	0	3148110	0	2.897342	0.294317	0	3.191659	0.149992	0.007256	0	0.157248	0.027868	0.253598	0.438714	0.156774	0.007584	0	0.164358	0.111472	0.724565	1.000395	4969.329	32.32316	0
Statewide Totals	2044	LHDT1	Aggregate	Aggregate	Electricity	337243.1	15093524.53	0	15093525	4716235	9161279	0	0	0	0	0	0	0	0	0.033276	0.227105	0.260381	0	0	0	0	0.133102	0.648873	0.781975	0	0	0
Statewide Totals	2044	LHDT2	Aggregate	Aggregate	Gasoline	44541.84	1493751.029	1493751	0	663607.1	0	0.040598	0.001107	0.268307	0.310012	0.001744	0	6.73E-05	0.001811	0.003293	0.052444	0.057548	0.001896	0	7.32E-05	0.00197	0.013173	0.149839	0.164981	1157.831	6.126661	17.05773
Statewide Totals	2044	LHDT2	Aggregate	Aggregate	Diesel	122916.6	3970496.445	3970496	0	1546136	0	1.958533	0.155059	0	2.113592	0.087866	0.003553	0	0.091419	0.01313	0.139399	0.243948	0.091839	0.003714	0	0.095553	0.052521	0.398282	0.546355	2740.402	25.90491	0
Statewide Totals	2044	LHDT2	Aggregate	Aggregate	Electricity	86862.12	3749187.857	0	3749188	1149653	2251281	0	0	0	0	0	0	0	0	0.008266	0.065814	0.07408	0	0	0	0	0.033062	0.188041	0.221103	0	0	0
Statewide Totals	2044	MCY	Aggregate	Aggregate	Gasoline	759218.6	4116954.292	4116954	0	1518437	0	2.158102	0	0.12606	2.284162	0.009713	0	0.005486	0.015199	0.004538	0.01906	0.038798	0.010417	0	0.005879	0.016296	0.018153	0.054458	0.088907	857.4332	0	63.74364
Statewide Totals	2044	MDV	Aggregate	Aggregate	Gasoline	4485205	161836216.3	1.62E+08	0	20451980	0	5.045694	0	5.211509	10.2572	0.096207	0	0.019264	0.115471	0.356788	0.579711	1.05197	0.104634	0	0.020951	0.125585	1.427152	1.656318	3.209055	59823.28	0	1828.833
Statewide Totals	2044	MDV	Aggregate	Aggregate	Diesel	50760.32	1787503.886	1787504	0	229555.2	0	0.029143	0	0	0.029143	0.00236	0	0	0.00236	0.003941	0.006425	0.012726	0.002467	0	0	0.002467	0.015763	0.018358	0.036588	662.2669	0	0
Statewide Totals	2044	MDV	Aggregate	Aggregate	Electricity	265890	7352898.819	0	7352899	1252691	2838826	0	0	0	0	0	0	0	0	0.01621	0.01248	0.02869	0	0	0	0	0.064841	0.035656	0.100497	0	0	0
Statewide Totals	2044	MDV	Aggregate	Aggregate	Plug-in Hyb	126694.7	4758697.458	1944698	2814000	523882.6	849911.8	0.014237	0	0.065535	0.079773	0.001075	0	0.000463	0.001538	0.010491	0.00743	0.019459	0.001169	0	0.000503	0.001672	0.041965	0.021229	0.064866	616.0246	0	47.06682
Statewide Totals	2044	MH	Aggregate	Aggregate	Gasoline	46432.85	491779.7458	491779.7	0	4645.142	0	0.090932	0	0.00201	0.092941	0.000627	0	1.71E-06	0.000629	0.001626	0.008345	0.0106	0.000682	0	1.86E-06	0.000684	0.006505	0.023843	0.031032	1003.956	0	0.153347
Statewide Totals	2044	MH	Aggregate	Aggregate	Diesel	30808.36	284059.1049	284059.1	0	3080.836	0	0.733316	0	0	0.733316	0.009836	0	0	0.009836	0.001252	0.004801	0.015889	0.010281	0	0	0.010281	0.00501	0.013716	0.029007	328.046	0	0
Statewide Totals	2044	MHDT	Aggregate	Aggregate	Gasoline	24765.86	1191168.207	1191168	0	495515.3	0	0.097137	0.001645	0.179181	0.277963	0.001535	0	0.000248	0.001783	0.003939	0.020199	0.025922	0.00167	0	0.00027	0.001939	0.015756	0.057712	0.075408	1940.828	12.89689	20.61276
Statewide Totals	2044	MHDT	Aggregate	Aggregate	Diesel	236737.4	9910440.323	9910440	0	2865857	0	3.362619	1.786069	3.761166	8.909854	0.039969	0.000681	0	0.04065	0.032773	0.168708	0.242131	0.041776	0.000712	0	0.042488	0.131093	0.482022	0.655603	10853.41	498.8865	0
Statewide Totals	2044	MHDT	Aggregate	Aggregate	Electricity	203054.3	9452544.677	0	9452545	2595625	10090734	0	0	0	0	0	0	0	0	0.031259	0.080606	0.111865	0	0	0	0	0.125036	0.230303	0.355339	0	0	0

Statewide Totals	2044	MHDT	Aggregate	Aggregate	Natural Ga:	3798.098	151249.147	151249.1	0	34592.11	0	0.010372	0.026618	0	0.036991	0.000214	9.5E-05	0	0.000309	0.0005	0.002588	0.003397	0.000233	0.000103	0	0.000336	0.002001	0.007394	0.009731	144.0618	22.71652	0
Statewide Totals	2044	OBUS	Aggregate	Aggregate	Gasoline	6201.257	192631.2766	192631.3	0	124074.8	0	0.055014	0.000352	0.047677	0.103042	0.000229	0	3.65E-05	0.000265	0.000637	0.003289	0.004191	0.000249	0	3.97E-05	0.000289	0.002548	0.009396	0.012233	321.0487	2.408324	3.907165
Statewide Totals	2044	OBUS	Aggregate	Aggregate	Diesel	12070.49	786749.1227	786749.1	0	141664.1	0	0.739906	0.074325	0.154601	0.968832	0.011342	6.51E-05	0	0.011407	0.002602	0.018826	0.032835	0.011854	6.81E-05	0	0.011922	0.010407	0.053789	0.076119	1048.452	28.23904	0
Statewide Totals	2044	OBUS	Aggregate	Aggregate	Electricity	3021.659	197864.497	0	197864.5	60457.36	214099.6	0	0	0	0	0	0	0	0	0.000654	0.001688	0.002342	0	0	0	0	0.002617	0.004823	0.00744	0	0	0
Statewide Totals	2044	OBUS	Aggregate	Aggregate	Natural Ga:	1042.194	53593.29896	53593.3	0	9275.53	0	0.0051	0.001721	0	0.006821	7.12E-05	5.56E-06	0	7.67E-05	0.000177	0.00092	0.001174	7.74E-05	6.05E-06	0	8.35E-05	0.000709	0.002629	0.003421	48.5592	1.333097	0
Statewide Totals	2044	SBUS	Aggregate	Aggregate	Gasoline	4509.457	231116.9114	231116.9	0	18037.83	0	0.037666	0.003587	0.015597	0.056851	0.00032	0	1.49E-05	0.000335	0.00051	0.004081	0.004926	0.000348	0	1.62E-05	0.000364	0.002038	0.01166	0.014062	199.0321	11.94779	1.016131
Statewide Totals	2044	SBUS	Aggregate	Aggregate	Diesel	11425.63	233494.6296	233494.6	0	165443.1	0	0.117167	0.088135	0.120548	0.32585	0.000915	2.94E-05	0	0.000944	0.000772	0.004081	0.005797	0.000956	3.08E-05	0	0.000987	0.003089	0.011661	0.015736	275.0235	23.88038	0
Statewide Totals	2044	SBUS	Aggregate	Aggregate	Electricity	10192.37	300783.4529	0	300783.5	128787.1	328911.4	0	0	0	0	0	0	0	0	0.000896	0.00265	0.003546	0	0	0	0	0.003586	0.007571	0.011156	0	0	0
Statewide Totals	2044	SBUS	Aggregate	Aggregate	Natural Ga:	4461.562	90315.86084	90315.86	0	64603.42	0	0.034199	0.024894	0	0.059093	0.000392	8.04E-05	0	0.000472	0.000299	0.001616	0.002387	0.000426	8.74E-05	0	0.000514	0.001195	0.004616	0.006324	139.7321	20.92431	0
Statewide Totals	2044	UBUS	Aggregate	Aggregate	Gasoline	1892.514	175798.9886	175799	0	7570.056	0	0.003248	0	0.002298	0.005546	0.000211	0	1.12E-06	0.000212	0.000388	0.006172	0.006771	0.000229	0	1.21E-06	0.00023	0.00155	0.017634	0.019415	133.7457	0	0.285377
Statewide Totals	2044	UBUS	Aggregate	Aggregate	Diesel	67.47016	3670.206399	3670.206	0	269.8806	0	0.000782	0	0	0.000782	5.64E-05	0	0	5.64E-05	1.21E-05	0.000129	0.000197	5.9E-05	0	0	5.9E-05	4.85E-05	0.000368	0.000476	2.67526	0	0
Statewide Totals	2044	UBUS	Aggregate	Aggregate	Electricity	16562.66	1817313.098	0	1817313	66250.64	3512789	0	0	0	0	0	0	0	0	0.015742	0.038562	0.054304	0	0	0	0	0.062967	0.110178	0.173145	0	0	0
Statewide Totals	2044	UBUS	Aggregate	Aggregate	Natural Ga:	247.8676	18021.79271	18021.79	0	991.4704	0	0.002904	0	0	0.002904	0.000209	0	0	0.000209	5.96E-05	0.000633	0.000902	0.000219	0	0	0.000219	0.000238	0.001808	0.002265	12.1815	0	0
Statewide Totals	2045	HHDT	Aggregate	Aggregate	Gasoline	33.58427	3944.822118	3944.822	0	671.954	0	0.009278	0	0.00049	0.009768	5.06E-06	0	3.44E-07	5.41E-06	2.17E-05	0.000139	0.000166	5.51E-06	0	3.74E-07	5.88E-06	8.7E-05	0.000397	0.00049	7.435315	0	0.03187
Statewide Totals	2045	HHDT	Aggregate	Aggregate	Diesel	413177.8	62367936.88	62367937	0	7201774	0	85.83697	31.9077	19.8316	137.5763	1.766209	0.013032	0	1.779241	0.614153	1.989551	4.382945	1.84607	0.013621	0	1.85969	2.456612	5.684432	10.00073	87227.98	6012.59	0
Statewide Totals	2045	HHDT	Aggregate	Aggregate	Electricity	104732.8	10493015.66	0	10493016	1345128	19136513	0	0	0	0	0	0	0	0	0.099767	0.176657	0.276424	0	0	0	0	0.399068	0.504733	0.903801	0	0	0
Statewide Totals	2045	HHDT	Aggregate	Aggregate	Natural Ga:	19849.46	1235829.09	1235829	0	152775	0	0.340229	0.18346	0	0.523689	0.002041	0.00064	0	0.00268	0.01226	0.069679	0.08462	0.002219	0.000696	0	0.002915	0.049042	0.199084	0.251041	1512.578	195.5651	0
Statewide Totals	2045	LDA	Aggregate	Aggregate	Gasoline	12765277	497148656.4	4.97E+08	0	59369327	0	10.75533	0	10.49878	21.25412	0.269094	0	0.050402	0.319495	1.096026	1.469051	2.884572	0.292664	0	0.054817	0.34748	4.384104	4.197288	8.928873	125353.3	0	3512.088
Statewide Totals	2045	LDA	Aggregate	Aggregate	Diesel	8803.722	300272.4512	300272.5	0	38832.61	0	0.007722	0	0	0.007722	0.00046	0	0	0.00046	0.000662	0.00089	0.002012	0.00048	0	0	0.00048	0.002648	0.002543	0.005671	61.65272	0	0
Statewide Totals	2045	LDA	Aggregate	Aggregate	Electricity	1739474	69887031.25	0	69887031	8182998	26982162	0	0	0	0	0	0	0	0	0.154075	0.118429	0.272504	0	0	0	0	0.616298	0.338369	0.954668	0	0	0
Statewide Totals	2045	LDA	Aggregate	Aggregate	Plug-in Hyb	597981.1	23648188.87	9661687	13986502	2472652	4224340	0.070686	0	0.309466	0.380152	0.00525	0	0.002185	0.007435	0.052135	0.036835	0.096405	0.00571	0	0.002376	0.008086	0.208541	0.105243	0.32187	3056.782	0	151.4588
Statewide Totals	2045	LDT1	Aggregate	Aggregate	Gasoline	977494.5	34854646.37	34854646	0	4396912	0	0.862947	0	0.873498	1.736445	0.0215	0	0.004265	0.025765	0.076841	0.125105	0.227711	0.023383	0	0.004639	0.028022	0.307366	0.357442	0.692829	10249.96	0	306.0035
Statewide Totals	2045	LDT1	Aggregate	Aggregate	Diesel	10.74282	403.0902837	403.0903	0	49.65331	0	1.54E-05	0	0	1.54E-05	1.89E-06	0	0	1.89E-06	8.89E-07	1.43E-06	4.21E-06	1.98E-06	0	0	1.98E-06	3.55E-06	4.09E-06	9.62E-06	0.153482	0	0
Statewide Totals	2045	LDT1	Aggregate	Aggregate	Electricity	27212.29	1087971.914	0	1087972	128280	420047	0	0	0	0	0	0	0	0	0.002399	0.001845	0.004243	0	0	0	0	0.009594	0.005271	0.014865	0	0	0
Statewide Totals	2045	LDT1	Aggregate	Aggregate	Plug-in Hyb	20822.72	814621.2185	331701.2	482920	86101.93	145856.2	0.002432	0	0.010762	0.013194	0.000175	0	7.12E-05	0.000247	0.001796	0.001273	0.003315	0.000191	0	7.74E-05	0.000268	0.007184	0.003636	0.011088	105.275	0	6.03156
Statewide Totals	2045	LDT2	Aggregate	Aggregate	Gasoline	7654517	286882303.4	2.87E+08	0	35294410	0	7.364654	0	7.925767	15.29042	0.162307	0	0.030973	0.19328	0.632468	1.012952	1.838699	0.176524	0	0.033686	0.210209	2.52987	2.894148	5.634228	87048.29	0	2566.378
Statewide Totals	2045	LDT2	Aggregate	Aggregate	Diesel	29111.72	1096783.774	1096784	0	134722.1	0	0.036148	0	0	0.036148	0.004946	0	0	0.004946	0.002418	0.003869	0.011233	0.00517	0	0	0.00517	0.009672	0.011054	0.025896	309.1327	0	0
Statewide Totals	2045	LDT2	Aggregate	Aggregate	Electricity	295076.2	8187172.023	0	8187172	1392724	3160924	0	0	0	0	0	0	0	0	0.01805	0.013881	0.03193	0	0	0	0	0.072198	0.03966	0.111858	0	0	0
Statewide Totals	2045	LDT2	Aggregate	Aggregate	Plug-in Hyb	203444.4	7813805.232	3188062	4625743	841242.5	1397112	0.023356	0	0.105255	0.128611	0.001711	0	0.000714	0.002425	0.017226	0.012198	0.03185	0.001861	0	0.000777	0.002638	0.068906	0.03485	0.106394	1010.427	0	61.97803
Statewide Totals	2045	LHDT1	Aggregate	Aggregate	Gasoline	339775.6	11778277.7	11778278	0	5062150	0	0.282716	0.009407	2.298872	2.590995	0.01411	0	0.000585	0.014695	0.025967	0.354445	0.395107	0.015346	0	0.000636	0.015982	0.103867	1.0127	1.132549	8204.012	40.41532	131.9558
Statewide Totals	2045	LHDT1	Aggregate	Aggregate	Diesel	244164.2	8224312.164	8224312	0	3071279	0	2.576506	0.278961	0	2.855467	0.142289	0.007084	0	0.149373	0.027197	0.247495	0.424066	0.148723	0.007404	0	0.156127	0.108789	0.707129	0.972045	4838.708	31.40447	0
Statewide Totals	2045	LHDT1	Aggregate	Aggregate	Electricity	354827	15621566.93	0	15621567	4961444	9483361	0	0	0	0	0	0	0	0	0.03444	0.235051	0.26949	0	0	0	0	0.137759	0.671573	0.809332	0	0	0
Statewide Totals	2045	LHDT2	Aggregate	Aggregate	Gasoline	43334.85	1455788.313	1455788	0	645624.6	0	0.037691	0.001055	0.254532	0.293278	0.001705	0	6.48E-05	0.00177	0.003209	0.051111	0.05609	0.001855	0	7.05E-05	0.001925	0.012838	0.146031	0.160794	1124.022	5.939602	16.55328
Statewide Totals	2045	LHDT2	Aggregate	Aggregate	Diesel	120625	3885951.054	3885951	0	1517311	0	1.781842	0.149394	0	1.931236	0.085272	0.003489	0	0.08876	0.012851	0.13643	0.238041	0.089127	0.003647	0	0.092774	0.051402	0.389801	0.533977	2676.956	25.35007	0
Statewide Totals	2045	LHDT2	Aggregate	Aggregate	Electricity	91503.85	3886304.252	0	3886304	1210982	2333825	0	0	0	0	0	0	0	0	0.008568	0.068221	0.076789	0	0	0	0	0.034271	0.194918	0.22919	0	0	0
Statewide Totals	2045	MCY	Aggregate	Aggregate	Gasoline	760274.6	4116645.18	4116645	0	1520549	0	2.147016	0	0.121908	2.268924	0.009725	0	0.005489	0.015214	0.004538	0.019059	0.038811	0.010431	0	0.005883	0.016314	0.018151	0.054454	0.088919	856.9509	0	63.06287
Statewide Totals	2045	MDV	Aggregate	Aggregate	Gasoline	4495436	162014289.2	1.62E+08	0	20505695	0	4.807795	0	5.110881	9.918676	0.093975	0	0.01871	0.112685	0.357181	0.580277	1.050142	0.102206	0	0.020349	0.122555	1.428722	1.657933	3.209211	59705.2	0	1824.946
Statewide Totals	2045	MDV	Aggregate	Aggregate	Diesel	50648.27	1782762.67	1782763	0	229075.4	0	0.028162	0	0	0.028162	0.00224	0	0	0.00224	0.00393	0.006405	0.012575	0.002341	0	0	0.002341	0.015721	0.018299	0.036361	658.0498	0	0
Statewide Totals	2045	MDV	Aggregate	Aggregate	Electricity	271389.7	7437827.378	0	7437827	1275358	2871615	0	0	0	0	0	0	0	0	0.016398	0.012625	0.029023	0	0	0	0	0.06559	0.036073	0.101663	0	0	0
Statewide Totals	2045	MDV	Aggregate	Aggregate	Plug-in Hyb	128944.5	4808574.65	1963454	2845120	533185.5	859311.1	0.014374	0	0.066701	0.081075	0.001072	0	0.000464	0.001536	0.010601	0.007509	0.019646	0.001165	0	0.000505	0.00167	0.042404	0.021456	0.06553	621.9194	0	47.84856
Statewide Totals	2045	MH	Aggregate	Aggregate	Gasoline	46081.57	489416.4407	489416.4	0	4610	0	0.101049	0	0.001944	0.102993	0.000626	0	1.71E-06	0.000628	0.001618	0.008305	0.010552	0.000681	0	1.86E-06	0.000683	0.006474	0.023728	0.030886	999.1252	0	0.152173
Statewide Totals	2045	MH	Aggregate	Aggregate	Diesel	30489.85	282005.3335	282005.3	0	3048.985	0	0.710016	0	0	0.710016	0.008817	0	0	0.008817	0.001243	0.004766	0.014826	0.009216	0	0	0.009216	0.004974	0.013616	0.027806	325.7269	0	0
Statewide Totals	2045	MHDT	Aggregate	Aggregate	Gasoline	23972.29	1155978.901	1155979	0	479637.5	0	0.089402	0.001568	0.182578	0.273548	0.001493	0	0.000241	0.001735	0.003823	0.019604	0.025161	0.001624	0	0.000262	0.001887	0.015291	0.05601	0.073188	1877.174	12.41983	19.8452
Statewide Totals	2045	MHDT	Aggregate	Aggregate	Diesel	234923.2	9898340.664	9898341	0	2847509	0	3.24447	1.744187	3.686332	8.674989	0.039461	0.000665	0	0.040126	0.032733	0.168474	0.241333	0.041246	0.000695	0	0.04194	0.130933	0.481354	0.654227	10796.5	491.8088	0
Statewide Totals	2045	MHDT	Aggregate	Aggregate	Electricity	215166.6	9917612.667	0	9917613	2749224	10585636	0	0	0	0	0	0	0	0	0.032797	0.084573	0.11737	0	0	0	0	0.131188	0.241638	0.372825	0	0	0
Statewide Totals	2045	MHDT	Aggregate	Aggregate	Natural Ga:	3758.648	150185.6351	150185.6	0	34381.45	0	0.010119	0.026266	0	0.036385	0.000213	9.43E-05	0	0.000307	0.000497	0.00257	0.003374	0.000232	0.000103	0	0.000334	0.001987	0.007342	0.009663	142.8298	22.43183	0
Statewide Totals	2045	OBUS	Aggregate	Aggregate	Gasoline	5954.305	186428.122	186428.1	0	119133.7	0	0.054303	0.000335	0.046635	0.101273	0.000221	0	3.48E-05	0.000256	0.000617	0.003183	0.004055	0.000241	0	3.78E-05	0.000279	0.002466	0.009093	0.011838	309.3822	2.30153	3.703469
Statewide Totals	2045	OBUS	Aggregate	Aggregate	Diesel	12146.33	789405.8489	789405.8	0	142530.3	0	0.721981	0.072501	0.152651	0.947134	0.010806	6.26E-05	0	0.010869	0.002611	0.018915	0.032394	0.011295	6.54E-05	0	0.01136	0.010442	0.054043	0.075845	1050.381	28.28626	0
Statewide Totals	2045	OBUS	Aggregate	Aggregate	Electricity	3144.142	202824.4368	0	202824.4	62907.99	219475.7	0	0	0	0	0	0	0	0	0.000671	0.00173	0.002401	0	0	0	0	0.002683	0.004944	0.007627	0	0	0
Statewide Totals	2045	OBUS	Aggregate	Aggregate	Natural Ga:	1052.127	53795.63115	53795.63	0	9363.932	0	0.005094	0.001737	0	0.006831	7.16E-05	5.63E-06	0	7.72E-05	0.000178	0.000924	0.001179	7.79E-05	6.12E-06	0	8.4E-05	0.000712	0.002639	0.003435	48.69145	1.344318	0
Statewide Totals	2045	SBUS	Aggregate	Aggregate	Gasoline	4352.345	221970.8428	221970.8	0	17409.38	0	0.035164	0.003391	0.014782	0.053337	0.000313	0	1.46E-05	0.000327	0.000489	0.00392	0.004737	0.00034	0	1.58E-05	0.000356	0.001957	0.011201	0.013514	190.2104	11.47476	0.976758
Statewide Totals	2045	SBUS	Aggregate	Aggregate	Diesel	10946.96	223917.7059	223917.7	0	158511.9	0	0.099105	0.080767	0.112521	0.292393	0.000822	2.79E-05	0	0.00085	0.00074	0.003914	0.005505	0.000859	2.92E-05	0	0.000889	0.002962	0.011183	0.015033	262.7895	22.67379	0
Statewide Totals	2045	SBUS	Aggregate	Aggregate	Electricity	10919.81	320337.5368	0	320337.5	138063	350307.3	0	0	0	0	0	0	0	0	0.000955	0.002822	0.003777	0	0	0	0	0.003819	0.008063	0.011882	0	0	0
Statewide Totals	2045	SBUS	Aggregate	Aggregate	Natural Ga:	4239.402	86135.1912	86135.19	0	61386.53	0	0.029461	0.023573	0	0.053033	0.000374	7.83E-05	0	0.000452	0.000285	0.001541	0.002278	0.000406	8.52E-05	0	0.000492	0.001139	0.004402	0.006033	131.8296	19.94037	0
Statewide Totals	2045	UBUS	Aggregate	Aggregate	Gasoline	1923.357	179245.6814	179245.7	0	7693.428	0	0.003319	0	0.002329	0.005649	0.000215	0	1.13E-06	0.000216	0.000395	0.006293	0.006904	0.000233	0	1.23E-06	0.000235	0.001581	0.01798	0.019795	136.0254	0	0.289548
Statewide Totals	2045	UBUS	Aggregate	Aggregate	Diesel	67.50585	3672.363318	3672.363	0	270.0234	0	0.000815	0	0	0.000815	6.16E-05	0	0	6.16E-05	1.21E-05	0.000129	0.000203	6.44E-05	0	0	6.44E-05	4.86E-05	0.000368	0.000481	2.676834	0	0
Statewide Totals	2045	UBUS	Aggregate	Aggregate	Electricity	16876.1	1854150.056	0	1854150	67504.38	3587654	0	0	0	0	0	0	0	0	0.016071	0.039344	0.055415	0	0	0	0	0.064283	0.112412	0.176695	0	0	0
Statewide Totals	2045	UBUS	Aggregate	Aggregate	Natural Ga:	253.3101	18444.73233	18444.73	0	1013.241	0	0.003054	0	0	0.003054	0.000227	0	0	0.000227	6.1E-05	0.000648	0.000936	0.000238	0	0	0.000238	0.000244	0.00185	0.002332	12.44155	0	0
Statewide Totals	2046	HHDT	Aggregate	Aggregate	Gasoline	32.50381	3850.651423	3850.651	0	650.3363	0	0.00912	0	0.00063	0.00975	4.95E-06	0	3.34E-07	5.28E-06	2.12E-05	0.000136	0.000162	5.38E-06	0	3.63E-07	5.74E-06	8.49E-05	0.000388	0.000479	7.236882	0	0.030731
Statewide Totals	2046	HHDT	Aggregate	Aggregate	Diesel	421414	63975214.01	63975214	0	7376963	0	87.70611	32.74932	20.23232	140.6877	1.812313	0.013362	0	1.825675	0.630102	2.04123	4.497007	1.894257	0.013967	0	1.908224	2.520409	5.832085	10.26072	89300	6168.448	0
Statewide Totals	2046	HHDT	Aggregate	Aggregate	Electricity	110107.9	10905644.57	0	10905645	1409731	19889654	0	0	0	0	0	0	0	0	0.103659	0.183629	0.287288	0	0	0	0	0.414636	0.524655	0.939291	0	0	0
Statewide Totals	2046	HHDT	Aggregate	Aggregate	Natural Ga:	19741.62	1231645.934	1231646	0	152974.6	0	0.31594	0.184036	0	0.499976	0.002013	0.000648	0	0.00266	0.012219	0.069117	0.083996	0.002189	0.000704	0	0.002893	0.048876	0.197476	0.249245	1503.581	195.5224	0
Statewide Totals	2046	LDA	Aggregate	Aggregate	Gasoline	12804510	497940053.4	4.98E+08	0	59560592	0	10.71638	0	10.46191	21.17829	0.265924	0	0.049543	0.315467	1.097771	1.471146	2.884384	0.289217	0	0.053883	0.3431	4.391083	4.203274	8.937457	125401.4	0	3515.108
Statewide Totals	2046	LDA	Aggregate	Aggregate	Diesel	8673.866	297992.7073	297992.7	0	38363.45	0	0.006866	0	0	0.006866	0.000419	0	0	0.000419	0.000657	0.000883	0.001959	0.000438	0	0	0.000438	0.002628	0.002522	0.005588	60.95116	0	0
Statewide Totals	2046	LDA	Aggregate	Aggregate	Electricity	1754491	70184477.09	0	70184477	8245684	27097001	0	0	0	0	0	0	0	0	0.15473	0.118938	0.273669	0	0	0	0	0.618921	0.339824	0.958745	0	0	0
Statewide Totals	2046	LDA	Aggregate	Aggregate	Plug-in Hyb	600699.6	23683754.71	9666741	14017014	2483893	4233556	0.070718	0	0.310877	0.381595	0.005182	0	0.002156	0.007337	0.052214	0.036893	0.096444	0.005635	0	0.002345	0.00798	0.208855	0.105407	0.322242	3058.166	0	151.9377
Statewide Totals	2046	LDT1	Aggregate	Aggregate	Gasoline	975118.8	34797981.63	34797982	0	4392619	0	0.834759	0	0.857508	1.692267	0.020856	0	0.004113	0.024968	0.076716	0.124825	0.22651	0.022682	0	0.004473	0.027155	0.306866	0.356644	0.690665	10194.6	0	303.9565
Statewide Totals	2046	LDT1	Aggregate	Aggregate	Diesel	10.83869	405.8970827	405.8971	0	50.10632	0	1.45E-05	0	0	1.45E-05	1.88E-06	0	0	1.88E-06	8.95E-07	1.44E-06	4.22E-06	1.97E-06	0	0	1.97E-06	3.58E-06	4.12E-06	9.67E-06	0.154314	0	0
Statewide Totals	2046	LDT1	Aggregate	Aggregate	Electricity	27972.69	1106096.665	0	1106097	131443.8	427044.6	0	0	0	0	0	0	0	0	0.002439	0.001876	0.004314	0	0	0	0	0.009754	0.005359	0.015113	0	0	0
Statewide Totals	2046	LDT1	Aggregate	Aggregate	Plug-in Hyb	21373.46	828213.1384	337166.2	491046.9	88379.24	148310.8	0.002472	0	0.011047	0.013519	0.000177	0	7.26E-05	0.00025	0.001826	0.001294	0.00337	0.000193	0	7.9E-05	0.000272	0.007304	0.003698	0.011273	106.9993	0	6.189259
Statewide Totals	2046	LDT2	Aggregate	Aggregate	Gasoline	7684536	287379144.1	2.87E+08	0	35428337	0	7.227845	0	7.887428	15.11527	0.15983	0	0.030424	0.190254	0.633563	1.01461	1.838427	0.173829	0	0.033089	0.206919	2.534252	2.898884	5.640055	87023.15	0	2568.468
Statewide Totals	2046	LDT2	Aggregate	Aggregate	Diesel	29286.17	1099710.407	1099710	0	135420.5	0	0.036176	0	0	0.036176	0.00496	0	0	0.00496	0.002424	0.00388	0.011264	0.005184	0	0	0.005184	0.009698	0.011084	0.025967	309.4743	0	0
Statewide Totals	2046	LDT2	Aggregate	Aggregate	Electricity	300491.9	8271149.228	0	8271149	1415192	3193346	0	0	0	0	0	0	0	0	0.018235	0.014025	0.03226	0	0	0	0	0.072939	0.040071	0.11301	0	0	0
Statewide Totals	2046	LDT2	Aggregate	Aggregate	Plug-in Hyb	206295.8	7876064.336	3211795	4664269	853033	1408748	0.023528	0	0.106734	0.130262	0.001709	0	0.000717	0.002426	0.017364	0.012296	0.032085	0.001859	0	0.000779	0.002638	0.069455	0.035131	0.107224	1017.852	0	62.80282
Statewide Totals	2046	LHDT1	Aggregate	Aggregate	Gasoline	330696.5	11510323.06	11510323	0	4926886	0	0.252339	0.00904	2.208994	2.470373	0.013731	0	0.000538	0.014269	0.025376	0.346381	0.386026	0.014934	0	0.000585	0.015519	0.101504	0.989661	1.106683	7987.185	39.22083	128.1258
Statewide Totals	2046	LHDT1	Aggregate	Aggregate	Diesel	238147	8034848.409	8034848	0	2995590	0	2.265249	0.264073	0	2.529322	0.134914	0.006915	0	0.141828	0.026571	0.241793	0.410193	0.141014	0.007227	0	0.148241	0.106283	0.690839	0.945363	4717.156	30.50145	0
Statewide Totals	2046	LHDT1	Aggregate	Aggregate	Electricity	371462.8	16102783.51	0	16102784	5193297	9777073	0	0	0	0	0	0	0	0	0.035501	0.242291	0.277792	0	0	0	0	0.142002	0.692261	0.834263	0	0	0

Statewide Totals	2046	LHDT2	Aggregate	Aggregate	Gasoline	42220.34	1421617.699	1421618	0	629020.2	0	0.035028	0.001007	0.241894	0.277929	0.00167	0	6.23E-05	0.001733	0.003134	0.049911	0.054778	0.001817	0	6.78E-05	0.001884	0.012537	0.142603	0.157024	1093.764	5.767661	16.08933
Statewide Totals	2046	LHDT2	Aggregate	Aggregate	Diesel	118177.8	3803701.75	3803702	0	1486528	0	1.577182	0.143319	0	1.720502	0.082568	0.00342	0	0.085988	0.012579	0.133543	0.232109	0.086301	0.003575	0	0.089876	0.050314	0.381551	0.521741	2615.567	24.75586	0
Statewide Totals	2046	LHDT2	Aggregate	Aggregate	Electricity	95925.32	4012374.79	0	4012375	1269397	2409755	0	0	0	0	0	0	0	0	0.008846	0.070434	0.07928	0	0	0	0	0.035383	0.201241	0.236624	0	0	0
Statewide Totals	2046	MCY	Aggregate	Aggregate	Gasoline	759992.6	4115081.193	4115081	0	1519985	0	2.135102	0	0.116944	2.252046	0.00973	0	0.005474	0.015204	0.004536	0.019052	0.038792	0.010437	0	0.005868	0.016305	0.018144	0.054433	0.088883	856.1992	0	62.15853
Statewide Totals	2046	MDV	Aggregate	Aggregate	Gasoline	4502082	162141988.4	1.62E+08	0	20549502	0	4.542771	0	4.974831	9.517602	0.091911	0	0.018182	0.110093	0.357462	0.580632	1.048187	0.099962	0	0.019775	0.119736	1.429848	1.658949	3.208534	59584.82	0	1820.59
Statewide Totals	2046	MDV	Aggregate	Aggregate	Diesel	50590.64	1779337.21	1779337	0	228813.3	0	0.027446	0	0	0.027446	0.002144	0	0	0.002144	0.003923	0.006389	0.012456	0.002241	0	0	0.002241	0.015691	0.018255	0.036186	654.7311	0	0
Statewide Totals	2046	MDV	Aggregate	Aggregate	Electricity	276324.9	7510261.341	0	7510261	1295523	2899581	0	0	0	0	0	0	0	0	0.016557	0.01275	0.029307	0	0	0	0	0.066229	0.036429	0.102658	0	0	0
Statewide Totals	2046	MDV	Aggregate	Aggregate	Plug-in Hyb	130972.5	4851754.709	1979722	2872032	541571.5	867439.4	0.014491	0	0.067752	0.082243	0.001069	0	0.000465	0.001534	0.010696	0.007578	0.019808	0.001162	0	0.000506	0.001668	0.042785	0.021651	0.066105	627.0245	0	48.55435
Statewide Totals	2046	MH	Aggregate	Aggregate	Gasoline	45868.11	487778.4145	487778.4	0	4588.646	0	0.108342	0	0.001919	0.110261	0.000626	0	1.71E-06	0.000628	0.001613	0.008277	0.010518	0.000681	0	1.87E-06	0.000683	0.006452	0.023649	0.030785	995.7939	0	0.151464
Statewide Totals	2046	MH	Aggregate	Aggregate	Diesel	30232.53	280295.4544	280295.5	0	3023.253	0	0.69087	0	0	0.69087	0.007935	0	0	0.007935	0.001236	0.004737	0.013907	0.008293	0	0	0.008293	0.004944	0.013533	0.02677	323.7982	0	0
Statewide Totals	2046	MHDT	Aggregate	Aggregate	Gasoline	23246.83	1125279.932	1125280	0	465122.6	0	0.083398	0.001499	0.188468	0.273364	0.001457	0	0.000235	0.001692	0.003721	0.019084	0.024497	0.001584	0	0.000256	0.00184	0.014885	0.054526	0.071251	1821.918	11.98617	19.1464
Statewide Totals	2046	MHDT	Aggregate	Aggregate	Diesel	233657.4	9912056.087	9912056	0	2835943	0	3.149311	1.710195	3.625597	8.485103	0.039107	0.000652	0	0.039759	0.032779	0.16868	0.241217	0.040875	0.000681	0	0.041557	0.131114	0.481943	0.654613	10770.72	486.1081	0
Statewide Totals	2046	MHDT	Aggregate	Aggregate	Electricity	226956	10362957.75	0	10362958	2898562	11059377	0	0	0	0	0	0	0	0	0.03427	0.088372	0.122642	0	0	0	0	0.137078	0.252492	0.38957	0	0	0
Statewide Totals	2046	MHDT	Aggregate	Aggregate	Natural Ga:	3721.746	149308.3344	149308.3	0	34192.82	0	0.009878	0.025933	0	0.035812	0.000213	9.36E-05	0	0.000306	0.000494	0.002555	0.003355	0.000231	0.000102	0	0.000333	0.001975	0.007299	0.009607	141.7935	22.16515	0
Statewide Totals	2046	OBUS	Aggregate	Aggregate	Gasoline	5688.935	180675.9802	180676	0	113824.2	0	0.053095	0.000316	0.043775	0.097186	0.000214	0	3.26E-05	0.000247	0.000597	0.003084	0.003928	0.000233	0	3.55E-05	0.000268	0.00239	0.008812	0.01147	298.4947	2.186519	3.481971
Statewide Totals	2046	OBUS	Aggregate	Aggregate	Diesel	12219.61	791938.4618	791938.5	0	143398.8	0	0.702503	0.070949	0.150937	0.92439	0.010265	6E-05	0	0.010325	0.002619	0.019	0.031944	0.010729	6.27E-05	0	0.010792	0.010476	0.054285	0.075553	1052.496	28.36623	0
Statewide Totals	2046	OBUS	Aggregate	Aggregate	Electricity	3257.834	207131.5124	0	207131.5	65182.75	224146	0	0	0	0	0	0	0	0	0.000685	0.001767	0.002452	0	0	0	0	0.00274	0.005049	0.007789	0	0	0
Statewide Totals	2046	OBUS	Aggregate	Aggregate	Natural Ga:	1061.885	54015.58579	54015.59	0	9450.778	0	0.005083	0.001752	0	0.006835	7.21E-05	5.7E-06	0	7.78E-05	0.000179	0.000927	0.001184	7.84E-05	6.2E-06	0	8.46E-05	0.000715	0.00265	0.003449	48.84318	1.355598	0
Statewide Totals	2046	SBUS	Aggregate	Aggregate	Gasoline	4167.675	211727.994	211728	0	16670.7	0	0.03316	0.003168	0.013663	0.049991	0.000302	0	1.41E-05	0.000316	0.000467	0.00374	0.004523	0.000328	0	1.53E-05	0.000343	0.001867	0.010686	0.012897	180.5231	10.93249	0.930787
Statewide Totals	2046	SBUS	Aggregate	Aggregate	Diesel	10454.21	214492.5625	214492.6	0	151377	0	0.085718	0.073784	0.104159	0.263661	0.000752	2.66E-05	0	0.000778	0.000709	0.003749	0.005237	0.000786	2.78E-05	0	0.000814	0.002837	0.010713	0.014363	250.6942	21.46853	0
Statewide Totals	2046	SBUS	Aggregate	Aggregate	Electricity	11649.82	339688.9757	0	339689	147369.4	371479.2	0	0	0	0	0	0	0	0	0.001012	0.002993	0.004005	0	0	0	0	0.004049	0.00855	0.012599	0	0	0
Statewide Totals	2046	SBUS	Aggregate	Aggregate	Natural Ga:	4015.343	82017.4511	82017.45	0	58142.17	0	0.025071	0.022248	0	0.047319	0.000356	7.61E-05	0	0.000432	0.000271	0.001467	0.00217	0.000387	8.27E-05	0	0.00047	0.001085	0.004191	0.005746	124.2193	18.9437	0
Statewide Totals	2046	UBUS	Aggregate	Aggregate	Gasoline	1954.198	182692.6967	182692.7	0	7816.794	0	0.003502	0	0.002411	0.005913	0.000218	0	1.15E-06	0.00022	0.000403	0.006414	0.007036	0.000238	0	1.25E-06	0.000239	0.001611	0.018326	0.020176	138.3049	0	0.295416
Statewide Totals	2046	UBUS	Aggregate	Aggregate	Diesel	67.5415	3674.543757	3674.544	0	270.166	0	0.000797	0	0	0.000797	5.88E-05	0	0	5.88E-05	1.22E-05	0.000129	0.0002	6.15E-05	0	0	6.15E-05	4.86E-05	0.000369	0.000479	2.678425	0	0
Statewide Totals	2046	UBUS	Aggregate	Aggregate	Electricity	17189.45	1890981.291	0	1890981	68757.8	3662509	0	0	0	0	0	0	0	0	0.0164	0.040126	0.056525	0	0	0	0	0.065599	0.114645	0.180244	0	0	0
Statewide Totals	2046	UBUS	Aggregate	Aggregate	Natural Ga:	258.7508	18867.61483	18867.61	0	1035.003	0	0.003064	0	0	0.003064	0.000225	0	0	0.000225	6.24E-05	0.000662	0.000949	0.000235	0	0	0.000235	0.00025	0.001893	0.002377	12.70155	0	0
Statewide Totals	2047	HHDT	Aggregate	Aggregate	Gasoline	31.59968	3771.89212	3771.892	0	632.2464	0	0.00908	0	0.000788	0.009868	4.85E-06	0	3.25E-07	5.18E-06	2.08E-05	0.000133	0.000159	5.27E-06	0	3.54E-07	5.63E-06	8.32E-05	0.000381	0.00047	7.072717	0	0.029802
Statewide Totals	2047	HHDT	Aggregate	Aggregate	Diesel	430170.2	65655402.72	65655403	0	7560784	0	89.72814	33.6358	20.66499	144.0289	1.860991	0.013712	0	1.874703	0.646764	2.095132	4.616599	1.945137	0.014332	0	1.959469	2.587056	5.986092	10.53262	91490.12	6332.162	0
Statewide Totals	2047	HHDT	Aggregate	Aggregate	Electricity	115349.5	11307626.71	0	11307627	1472962	20623307	0	0	0	0	0	0	0	0	0.107451	0.190388	0.297839	0	0	0	0	0.429803	0.543966	0.973769	0	0	0
Statewide Totals	2047	HHDT	Aggregate	Aggregate	Natural Ga:	19648.73	1228502.117	1228502	0	153338	0	0.28817	0.184873	0	0.473043	0.001985	0.000656	0	0.002641	0.012188	0.068589	0.083418	0.002159	0.000713	0	0.002872	0.048751	0.195969	0.247592	1495.86	195.6789	0
Statewide Totals	2047	LDA	Aggregate	Aggregate	Gasoline	12843643	498668587.2	4.99E+08	0	59748938	0	10.68582	0	10.43551	21.12134	0.26345	0	0.048853	0.312302	1.099377	1.473072	2.884751	0.286526	0	0.053132	0.339657	4.397507	4.208776	8.94594	125464.3	0	3519.333
Statewide Totals	2047	LDA	Aggregate	Aggregate	Diesel	8536.527	296041.3619	296041.4	0	37907.43	0	0.005744	0	0	0.005744	0.000374	0	0	0.000374	0.000653	0.000877	0.001903	0.00039	0	0	0.00039	0.002611	0.002504	0.005505	60.34065	0	0
Statewide Totals	2047	LDA	Aggregate	Aggregate	Electricity	1768130	70439315.25	0	70439315	8302439	27195389	0	0	0	0	0	0	0	0	0.155292	0.119374	0.274667	0	0	0	0	0.621168	0.34107	0.962238	0	0	0
Statewide Totals	2047	LDA	Aggregate	Aggregate	Plug-in Hyb	603321.3	23717044.97	9673047	14043998	2494734	4241706	0.070758	0	0.312239	0.382997	0.005129	0	0.002133	0.007262	0.052287	0.036946	0.096495	0.005578	0	0.00232	0.007898	0.209149	0.105559	0.322606	3059.953	0	152.4329
Statewide Totals	2047	LDT1	Aggregate	Aggregate	Gasoline	973713.4	34759773.63	34759774	0	4391685	0	0.811769	0	0.844693	1.656461	0.020316	0	0.003984	0.0243	0.076632	0.124627	0.225559	0.022095	0	0.004333	0.026428	0.306529	0.356078	0.689035	10150.43	0	302.3879
Statewide Totals	2047	LDT1	Aggregate	Aggregate	Diesel	10.91829	408.0268589	408.0269	0	50.49645	0	1.32E-05	0	0	1.32E-05	1.86E-06	0	0	1.86E-06	9E-07	1.45E-06	4.21E-06	1.94E-06	0	0	1.94E-06	3.6E-06	4.15E-06	9.68E-06	0.154843	0	0
Statewide Totals	2047	LDT1	Aggregate	Aggregate	Electricity	28661.71	1121826.516	0	1121827	134293.2	433117.6	0	0	0	0	0	0	0	0	0.002473	0.001903	0.004376	0	0	0	0	0.009893	0.005437	0.015329	0	0	0
Statewide Totals	2047	LDT1	Aggregate	Aggregate	Plug-in Hyb	21878.33	840207.3236	341989	498218.4	90466.91	150476.8	0.002507	0	0.011308	0.013815	0.000179	0	7.4E-05	0.000253	0.001852	0.001313	0.003419	0.000195	0	8.04E-05	0.000275	0.007409	0.003752	0.011436	108.5201	0	6.333834
Statewide Totals	2047	LDT2	Aggregate	Aggregate	Gasoline	7712817	287821315.9	2.88E+08	0	35555244	0	7.10505	0	7.853847	14.9589	0.157751	0	0.029961	0.187712	0.634538	1.016072	1.838322	0.171569	0	0.032586	0.204154	2.538151	2.903064	5.645369	87004.2	0	2570.911
Statewide Totals	2047	LDT2	Aggregate	Aggregate	Diesel	118177.8	4807174.085	4807174	0	1913370	0	2.231133	0.008723	2.137341	2.377197	0.013402	0	0.000498	0.0139	0.024854	0.339254	0.378008	0.014576	0	0.000542	0.015117	0.099415	0.969298	1.08383	7797.955	38.17076	124.7485
Statewide Totals	2047	LDT2	Aggregate	Aggregate	Electricity	305332.9	8342011.25	0	8342011	1435095	3220705	0	0	0	0	0	0	0	0	0.018391	0.014147	0.032538	0	0	0	0	0.073564	0.040419	0.113983	0	0	0
Statewide Totals	2047	LDT2	Aggregate	Aggregate	Plug-in Hyb	208878.5	7929850.605	3232366	4697485	863712.8	1418780	0.023677	0	0.108074	0.131751	0.001708	0	0.000719	0.002427	0.017482	0.012381	0.03229	0.001857	0	0.000782	0.00264	0.069929	0.035373	0.107942	1024.278	0	63.55267
Statewide Totals	2047	LHDT1	Aggregate	Aggregate	Gasoline	322661.4	11273488.85	11273489	0	4807174	0	0.231133	0.008723	2.137341	2.377197	0.013402	0	0.000498	0.0139	0.024854	0.339254	0.378008	0.014576	0	0.000542	0.015117	0.099415	0.969298	1.08383	7797.955	38.17076	124.7485
Statewide Totals	2047	LHDT1	Aggregate	Aggregate	Diesel	232434.4	7859621.836	7859622	0	2923733	0	2.029445	0.250429	0	2.279874	0.12892	0.006753	0	0.135673	0.025991	0.23652	0.398185	0.134749	0.007058	0	0.141807	0.103965	0.675773	0.921545	4604.423	29.65322	0
Statewide Totals	2047	LHDT1	Aggregate	Aggregate	Electricity	387121.5	16539108.76	0	16539109	5411383	10043541	0	0	0	0	0	0	0	0	0.036462	0.248857	0.285319	0	0	0	0	0.14585	0.711019	0.856869	0	0	0
Statewide Totals	2047	LHDT2	Aggregate	Aggregate	Gasoline	41180.73	1390304.59	1390305	0	613531.5	0	0.032988	0.000964	0.23065	0.264602	0.001638	0	6.04E-05	0.001698	0.003065	0.048812	0.053575	0.001782	0	6.56E-05	0.001847	0.01226	0.139462	0.15357	1066.404	5.608383	15.65842
Statewide Totals	2047	LHDT2	Aggregate	Aggregate	Diesel	116050.1	3730797.675	3730798	0	1459764	0	1.440563	0.138183	0	1.578746	0.080169	0.003361	0	0.083529	0.012338	0.130983	0.22685	0.083793	0.003513	0	0.087306	0.04935	0.374238	0.510894	2561.426	24.24406	0
Statewide Totals	2047	LHDT2	Aggregate	Aggregate	Electricity	100118.3	4127821.112	0	4127821	1324787	2479318	0	0	0	0	0	0	0	0	0.0091	0.072461	0.081561	0	0	0	0	0.036401	0.207032	0.243433	0	0	0
Statewide Totals	2047	MCY	Aggregate	Aggregate	Gasoline	758448.1	4112391.375	4112391	0	1516896	0	2.122264	0	0.11109	2.233354	0.00973	0	0.005442	0.015172	0.004533	0.019039	0.038745	0.010437	0	0.005836	0.016274	0.018133	0.054398	0.088804	855.1987	0	61.02188
Statewide Totals	2047	MDV	Aggregate	Aggregate	Gasoline	4508448	162251507.7	1.62E+08	0	20591945	0	4.297313	0	4.849221	9.146534	0.09009	0	0.01771	0.1078	0.357704	0.580921	1.046424	0.097981	0	0.019261	0.117242	1.430814	1.659773	3.207829	59479.3	0	1817.02
Statewide Totals	2047	MDV	Aggregate	Aggregate	Diesel	50580.41	1776959.437	1776959	0	228733.3	0	0.026858	0	0	0.026858	0.002066	0	0	0.002066	0.003918	0.006378	0.012361	0.002159	0	0	0.002159	0.01567	0.018223	0.036052	652.159	0	0
Statewide Totals	2047	MDV	Aggregate	Aggregate	Electricity	280743.2	7571629.473	0	7571629	1313425	2923274	0	0	0	0	0	0	0	0	0.016693	0.012856	0.029548	0	0	0	0	0.06677	0.03673	0.1035	0	0	0
Statewide Totals	2047	MDV	Aggregate	Aggregate	Plug-in Hyb	132793.5	4888856.45	1993727	2895129	549101.2	874415.4	0.014593	0	0.068696	0.083289	0.001066	0	0.000466	0.001533	0.010778	0.007637	0.019948	0.00116	0	0.000507	0.001667	0.043112	0.021819	0.066598	631.4141	0	49.18921
Statewide Totals	2047	MH	Aggregate	Aggregate	Gasoline	45656.4	486205.5908	486205.6	0	4567.466	0	0.113125	0	0.001875	0.115	0.000626	0	1.72E-06	0.000628	0.001608	0.008251	0.010486	0.000681	0	1.87E-06	0.000683	0.006431	0.023573	0.030687	992.5997	0	0.150795
Statewide Totals	2047	MH	Aggregate	Aggregate	Diesel	30011.05	278797.708	278797.7	0	3001.105	0	0.674237	0	0	0.674237	0.007179	0	0	0.007179	0.001229	0.004711	0.01312	0.007504	0	0	0.007504	0.004917	0.01346	0.025881	322.1066	0	0
Statewide Totals	2047	MHDT	Aggregate	Aggregate	Gasoline	22599.92	1098904.175	1098904	0	452179.3	0	0.078953	0.001439	0.193046	0.273439	0.001425	0	0.00023	0.001655	0.003634	0.018638	0.023926	0.00155	0	0.00025	0.0018	0.014536	0.05325	0.069586	1774.664	11.60109	18.54128
Statewide Totals	2047	MHDT	Aggregate	Aggregate	Diesel	232960.1	9950946.195	9950946	0	2831342	0	3.073994	1.684273	3.579153	8.33742	0.038902	0.000643	0	0.039545	0.032907	0.169315	0.241768	0.040661	0.000672	0	0.041333	0.131628	0.483758	0.65672	10776.18	481.8208	0
Statewide Totals	2047	MHDT	Aggregate	Aggregate	Electricity	238404.2	10789888.2	0	10789888	3043445	11513336	0	0	0	0	0	0	0	0	0.035681	0.092014	0.127696	0	0	0	0	0.142726	0.262897	0.405623	0	0	0
Statewide Totals	2047	MHDT	Aggregate	Aggregate	Natural Ga:	3686.25	148552.1817	148552.2	0	34010.69	0	0.00966	0.025614	0	0.035274	0.000213	9.29E-05	0	0.000305	0.000491	0.002541	0.003338	0.000231	0.000101	0	0.000332	0.001965	0.007261	0.009558	140.8743	21.90771	0
Statewide Totals	2047	OBUS	Aggregate	Aggregate	Gasoline	5443.249	175649.575	175649.6	0	108908.5	0	0.050793	0.000299	0.041926	0.093017	0.000208	0	3.06E-05	0.000238	0.000581	0.002998	0.003817	0.000226	0	3.33E-05	0.000259	0.002323	0.008566	0.011149	288.9614	2.079849	3.272323
Statewide Totals	2047	OBUS	Aggregate	Aggregate	Diesel	12280.67	794343.3408	794343.3	0	144189.8	0	0.682188	0.069662	0.14926	0.901111	0.009736	5.77E-05	0	0.009794	0.002627	0.01908	0.0315	0.010176	6.03E-05	0	0.010236	0.010507	0.054514	0.075258	1054.571	28.47374	0
Statewide Totals	2047	OBUS	Aggregate	Aggregate	Electricity	3363.166	210851.5097	0	210851.5	67290.23	228181.2	0	0	0	0	0	0	0	0	0.000697	0.001799	0.002496	0	0	0	0	0.002789	0.00514	0.007929	0	0	0
Statewide Totals	2047	OBUS	Aggregate	Aggregate	Natural Ga:	1071.199	54283.78084	54283.78	0	9533.675	0	0.005066	0.001767	0	0.006832	7.27E-05	5.77E-06	0	7.84E-05	0.00018	0.000932	0.00119	7.9E-05	6.27E-06	0	8.53E-05	0.000718	0.002663	0.003466	49.03309	1.366342	0
Statewide Totals	2047	SBUS	Aggregate	Aggregate	Gasoline	3857.611	195023.8161	195023.8	0	15430.44	0	0.028984	0.002819	0.011891	0.043694	0.000282	0	1.32E-05	0.000295	0.00043	0.003446	0.004171	0.000307	0	1.44E-05	0.000321	0.00172	0.009846	0.011887	164.9865	10.03969	0.860338
Statewide Totals	2047	SBUS	Aggregate	Aggregate	Diesel	9961.557	205141.4258	205141.4	0	144243.3	0	0.075865	0.067137	0.095785	0.238787	0.000696	2.53E-05	0	0.000721	0.000678	0.003586	0.004986	0.000728	2.65E-05	0	0.000754	0.002714	0.010246	0.013713	238.6343	20.29132	0
Statewide Totals	2047	SBUS	Aggregate	Aggregate	Electricity	12386.3	358897.0495	0	358897	156764.3	392491	0	0	0	0	0	0	0	0	0.001069	0.003162	0.004231	0	0	0	0	0.004278	0.009034	0.013311	0	0	0
Statewide Totals	2047	SBUS	Aggregate	Aggregate	Natural Ga:	3795.506	77973.97895	77973.98	0	54958.93	0	0.021214	0.020958	0	0.042172	0.000338	7.36E-05	0	0.000412	0.000258	0.001395	0.002064	0.000368	8.01E-05	0	0.000448	0.001031	0.003985	0.005464	116.9669	17.95465	0
Statewide Totals	2047	UBUS	Aggregate	Aggregate	Gasoline	1985.026	186139.0831	186139.1	0	7940.106	0	0.003675	0	0.002513	0.006188	0.000222	0	1.17E-06	0.000224	0.00041	0.006535	0.007169	0.000242	0	1.27E-06	0.000243	0.001641	0.018672	0.020556	140.5842	0	0.301716
Statewide Totals	2047	UBUS	Aggregate	Aggregate	Diesel	67.57615	3676.672505	3676.673	0	270.3046	0	0.000808	0	0	0.000808	6.05E-05	0	0	6.05E-05	1.22E-05	0.000129	0.000202	6.32E-05	0	0	6.32E-05	4.86E-05	0.000369	0.000481	2.679978	0	0
Statewide Totals	2047	UBUS	Aggregate	Aggregate	Electricity	17502.61	1927793.046	0	1927793	70010.46	3737329	0	0	0	0	0	0	0	0	0.016729	0.040907	0.057635	0	0	0	0	0.066914	0.116877	0.183791	0	0	0
Statewide Totals	2047	UBUS	Aggregate	Aggregate	Natural Ga:	264.188	19290.34694	19290.35	0	1056.752	0	0.003146	0	0	0.003146	0.000232	0	0	0.000232	6.38E-05	0.000677	0.000973	0.000242	0	0	0.000242	0.000255	0.001935	0.002432	12.96142	0	0
Statewide Totals	2048	HHDT	Aggregate	Aggregate	Gasoline	30.79587	3706.58865	3706.589	0	616.1637	0	0.009235	0	0.000936	0.01017	4.77E-06	0	3.18E-07	5.09E-06	2.04E-05	0.000131	0.000157	5.19E-06	0	3.46E-07	5.53E-06	8.17E-05	0.000375	0.000462	6.938747	0	0.028941
Statewide Totals	2048	HHDT	Aggregate	Aggregate	Diesel	439454	67407269.15	67407269	0	7753031	0	91.93376	34.56375	21.12935	147.6269	1.912115	0.01408	0	1.926196	0.664126	2.151195	4.741517	1.998573	0.014717	0	2.01329	2.656505	6.146271	10.81607	93792.47	6503.258	0
Statewide Totals	2048	HHDT	Aggregate	Aggregate	Electricity	120457.3	11701637.38	0	11701637	1534956	21342331	0	0	0	0	0	0	0	0	0.111168	0.196975	0.308142	0	0	0	0	0.444671	0.562784	1.007456	0	0	0
Statewide Totals	2048	HHDT	Aggregate	Aggregate	Natural Ga:	19583.43	1227112.713	1227113	0	153933.5	0	0.272751	0.186027	0	0.458778	0.001962	0.000665	0	0.002627	0.012174	0.068159	0.082959	0.002134	0.000723	0	0.002857	0.048696	0.194739	0.246291	1490.946	196.1517	0
Statewide Totals	2048	LDA	Aggregate	Aggregate	Gasoline	12881527	499353512.8	4.99E+08	0	59931087	0	10.66294	0	10.41773	21.08067	0.261531	0	0.048291	0.309822	1.100887	1.474867	2.885576	0.284439	0	0.052521	0.33696	4.403547	4.213906	8.954413	125539.6	0	3524.253
Statewide Totals	2048	LDA	Aggregate	Aggregate	Diesel	8400.794	294377.6449	294377.6	0	37480.53	0	0.004532	0	0	0.004532	0.000328	0	0	0.000328	0.000649	0.000871	0.001849	0.000343	0	0	0.000343	0.002596	0.002489	0.005428	59.81339	0	0

Statewide Totals	2048	LDA	Aggregate	Aggregate	Electricity	1780564	70660763	0	70660763	8354001	27280886	0	0	0	0	0	0	0	0	0.15578	0.119754	0.275534	0	0	0	0	0.623121	0.342153	0.965274	0	0	0
Statewide Totals	2048	LDA	Aggregate	Aggregate	Plug-in Hyb	605881	23749606.07	9680758	14068848	2505318	4249211	0.070809	0	0.313568	0.384377	0.005089	0	0.002116	0.007205	0.052359	0.036997	0.096561	0.005534	0	0.002302	0.007836	0.209436	0.105706	0.322978	3062.182	0	152.9465
Statewide Totals	2048	LDT1	Aggregate	Aggregate	Gasoline	974120.4	34748219.78	34748220	0	4395774	0	0.800481	0	0.838348	1.638829	0.019912	0	0.003891	0.023803	0.076607	0.124542	0.224952	0.021656	0	0.004232	0.025888	0.306427	0.355834	0.688149	10121.47	0	301.528
Statewide Totals	2048	LDT1	Aggregate	Aggregate	Diesel	11.04964	410.5561809	410.5562	0	51.00364	0	1.33E-05	0	0	1.33E-05	1.87E-06	0	0	1.87E-06	9.05E-07	1.46E-06	4.24E-06	1.96E-06	0	0	1.96E-06	3.62E-06	4.18E-06	9.75E-06	0.155705	0	0
Statewide Totals	2048	LDT1	Aggregate	Aggregate	Electricity	29301.57	1135565.697	0	1135566	136895.7	438422.1	0	0	0	0	0	0	0	0	0.002503	0.001926	0.00443	0	0	0	0	0.010014	0.005504	0.015518	0	0	0
Statewide Totals	2048	LDT1	Aggregate	Aggregate	Plug-in Hyb	22339.19	850771.9426	346237.1	504534.9	92372.55	152384.6	0.002538	0	0.011547	0.014084	0.000181	0	7.52E-05	0.000256	0.001876	0.00133	0.003461	0.000197	0	8.17E-05	0.000278	0.007503	0.003799	0.01158	109.8587	0	6.465815
Statewide Totals	2048	LDT2	Aggregate	Aggregate	Gasoline	7739565	288226617.4	2.88E+08	0	35675837	0	6.984213	0	7.819159	14.80337	0.156002	0	0.02957	0.185573	0.635431	1.017398	1.838402	0.169667	0	0.03216	0.201827	2.541725	2.906853	5.650405	86992.57	0	2573.58
Statewide Totals	2048	LDT2	Aggregate	Aggregate	Diesel	29613.26	1104818.263	1104818	0	136718	0	0.036209	0	0	0.036209	0.004985	0	0	0.004985	0.002436	0.003898	0.011319	0.00521	0	0	0.00521	0.009743	0.011137	0.02609	310.1568	0	0
Statewide Totals	2048	LDT2	Aggregate	Aggregate	Electricity	309658.3	8401845.399	0	8401845	1452708	3243806	0	0	0	0	0	0	0	0	0.018523	0.014249	0.032772	0	0	0	0	0.074092	0.040712	0.114804	0	0	0
Statewide Totals	2048	LDT2	Aggregate	Aggregate	Plug-in Hyb	211210.7	7976384.329	3250195	4726189	873356.4	1427450	0.023805	0	0.109285	0.13309	0.001707	0	0.000722	0.00243	0.017585	0.012454	0.032468	0.001857	0	0.000785	0.002642	0.07034	0.035583	0.108565	1029.835	0	64.23132
Statewide Totals	2048	LHDT1	Aggregate	Aggregate	Gasoline	314412	11049043.7	11049044	0	4684271	0	0.207761	0.008394	2.062981	2.279136	0.013076	0	0.000452	0.013528	0.024359	0.3325	0.370387	0.014221	0	0.000492	0.014713	0.097436	0.95	1.062149	7616.127	37.08971	121.3532
Statewide Totals	2048	LHDT1	Aggregate	Aggregate	Diesel	226894.2	7696445.814	7696446	0	2854044	0	1.810357	0.237606	0	2.047963	0.123518	0.006596	0	0.130114	0.025452	0.23161	0.387175	0.129103	0.006894	0	0.135997	0.101807	0.661743	0.899546	4499.892	28.83832	0
Statewide Totals	2048	LHDT1	Aggregate	Aggregate	Electricity	401792.2	16933675.5	0	16933675	5615569	10284695	0	0	0	0	0	0	0	0	0.037332	0.254793	0.292126	0	0	0	0	0.149329	0.727981	0.877311	0	0	0
Statewide Totals	2048	LHDT2	Aggregate	Aggregate	Gasoline	40213.85	1361921.595	1361922	0	599126.4	0	0.031208	0.000924	0.220597	0.252729	0.001608	0	5.84E-05	0.001666	0.003003	0.047815	0.052484	0.001749	0	6.35E-05	0.001812	0.01201	0.136615	0.150437	1041.823	5.460929	15.25948
Statewide Totals	2048	LHDT2	Aggregate	Aggregate	Diesel	113892.3	3661126.795	3661127	0	1432622	0	1.302154	0.133035	0	1.435189	0.077802	0.0033	0	0.081103	0.012107	0.128537	0.221747	0.08132	0.00345	0	0.08477	0.048428	0.367249	0.500447	2509.966	23.72798	0
Statewide Totals	2048	LHDT2	Aggregate	Aggregate	Electricity	104076.1	4233241.266	0	4233241	1377068	2542879	0	0	0	0	0	0	0	0	0.009333	0.074312	0.083644	0	0	0	0	0.037331	0.212319	0.24965	0	0	0
Statewide Totals	2048	MCY	Aggregate	Aggregate	Gasoline	755953.1	4109030.098	4109030	0	1511906	0	2.109167	0	0.104612	2.213779	0.009726	0	0.005398	0.015125	0.004529	0.019024	0.038678	0.010434	0	0.005791	0.016225	0.018118	0.054353	0.088696	854.0605	0	59.71912
Statewide Totals	2048	MDV	Aggregate	Aggregate	Gasoline	4513466	162338649.6	1.62E+08	0	20630334	0	4.10182	0	4.750538	8.852358	0.088437	0	0.017272	0.105709	0.357896	0.581115	1.044721	0.096183	0	0.018785	0.114969	1.431583	1.66033	3.206881	59380.41	0	1813.759
Statewide Totals	2048	MDV	Aggregate	Aggregate	Diesel	50618.39	1775554.101	1775554	0	228830.7	0	0.026351	0	0	0.026351	0.002002	0	0	0.002002	0.003914	0.006371	0.012287	0.002092	0	0	0.002092	0.015658	0.018203	0.035953	650.2453	0	0
Statewide Totals	2048	MDV	Aggregate	Aggregate	Electricity	284699.5	7623808.246	0	7623808	1329325	2943419	0	0	0	0	0	0	0	0	0.016808	0.012945	0.029753	0	0	0	0	0.06723	0.036987	0.104217	0	0	0
Statewide Totals	2048	MDV	Aggregate	Aggregate	Plug-in Hyb	134430.3	4920890.898	2005856	2915035	555869.1	880427.5	0.01468	0	0.069544	0.084225	0.001064	0	0.000467	0.001532	0.010849	0.007687	0.020068	0.001158	0	0.000508	0.001666	0.043395	0.021964	0.067025	635.2085	0	49.76143
Statewide Totals	2048	MH	Aggregate	Aggregate	Gasoline	45493.79	484925.6756	484925.7	0	4551.199	0	0.116416	0	0.001843	0.118259	0.000626	0	1.72E-06	0.000627	0.001604	0.008229	0.01046	0.000681	0	1.87E-06	0.000682	0.006414	0.023512	0.030608	990.0136	0	0.149255
Statewide Totals	2048	MH	Aggregate	Aggregate	Diesel	29812.73	277456.7194	277456.7	0	2981.273	0	0.663457	0	0	0.663457	0.006453	0	0	0.006453	0.001223	0.004688	0.012365	0.006745	0	0	0.006745	0.004893	0.013395	0.025033	320.5971	0	0
Statewide Totals	2048	MHDT	Aggregate	Aggregate	Gasoline	22010.42	1076293.374	1076293	0	440384.5	0	0.076066	0.001386	0.201544	0.278996	0.001398	0	0.000225	0.001624	0.003559	0.018255	0.023438	0.001521	0	0.000245	0.001766	0.014237	0.052157	0.06816	1734.308	11.25154	17.92229
Statewide Totals	2048	MHDT	Aggregate	Aggregate	Diesel	232860.4	10014245.37	10014245	0	2834055	0	3.018786	1.665649	3.54702	8.231455	0.038829	0.000637	0	0.039466	0.033116	0.170366	0.242949	0.040585	0.000666	0	0.04125	0.132466	0.486761	0.660478	10811.64	478.9942	0
Statewide Totals	2048	MHDT	Aggregate	Aggregate	Electricity	249502.5	11199773.41	0	11199773	3183757	11949006	0	0	0	0	0	0	0	0	0.037037	0.095511	0.132548	0	0	0	0	0.148148	0.272888	0.421035	0	0	0
Statewide Totals	2048	MHDT	Aggregate	Aggregate	Natural Ga	3655.215	147997.8199	147997.8	0	33868.34	0	0.009473	0.025328	0	0.034802	0.000212	9.23E-05	0	0.000305	0.000489	0.002532	0.003326	0.000231	0.0001	0	0.000331	0.001958	0.007234	0.009523	140.1545	21.67597	0
Statewide Totals	2048	OBUS	Aggregate	Aggregate	Gasoline	5195.634	171078.9621	171079	0	103954.2	0	0.046442	0.000281	0.041131	0.087854	0.000202	0	2.86E-05	0.00023	0.000566	0.00292	0.003716	0.000219	0	3.11E-05	0.00025	0.002263	0.008343	0.010857	280.2509	1.972193	3.048605
Statewide Totals	2048	OBUS	Aggregate	Aggregate	Diesel	12329.56	796676.2907	796676.3	0	144886.3	0	0.666819	0.068589	0.147444	0.882852	0.009321	5.62E-05	0	0.009378	0.002635	0.019158	0.03117	0.009743	5.88E-05	0	0.009802	0.010538	0.054736	0.075076	1056.694	28.59441	0
Statewide Totals	2048	OBUS	Aggregate	Aggregate	Electricity	3460.713	214064.6725	0	214064.7	69241.95	231668.5	0	0	0	0	0	0	0	0	0.000708	0.001826	0.002534	0	0	0	0	0.002832	0.005218	0.00805	0	0	0
Statewide Totals	2048	OBUS	Aggregate	Aggregate	Natural Ga	1078.765	54549.44001	54549.44	0	9601.01	0	0.005029	0.001778	0	0.006807	7.34E-05	5.83E-06	0	7.92E-05	0.00018	0.000937	0.001196	7.98E-05	6.35E-06	0	8.61E-05	0.000722	0.002676	0.003484	49.20358	1.374853	0
Statewide Totals	2048	SBUS	Aggregate	Aggregate	Gasoline	3410.114	171037.0724	171037.1	0	13640.46	0	0.022486	0.002329	0.009235	0.03405	0.000252	0	1.19E-05	0.000264	0.000377	0.003024	0.003665	0.000274	0	1.29E-05	0.000287	0.001508	0.00864	0.010435	142.7831	8.760324	0.746034
Statewide Totals	2048	SBUS	Aggregate	Aggregate	Diesel	9478.429	196050.689	196050.7	0	137247.7	0	0.06848	0.060742	0.087562	0.216784	0.00065	2.41E-05	0	0.000674	0.000648	0.003427	0.00475	0.00068	2.52E-05	0	0.000705	0.002593	0.009792	0.01309	226.8553	19.15818	0
Statewide Totals	2048	SBUS	Aggregate	Aggregate	Electricity	13115.12	377615.5164	0	377615.5	166046.7	412964.3	0	0	0	0	0	0	0	0	0.001125	0.003327	0.004452	0	0	0	0	0.0045	0.009505	0.014005	0	0	0
Statewide Totals	2048	SBUS	Aggregate	Aggregate	Natural Ga	3587.622	74150.59014	74150.59	0	51948.77	0	0.018052	0.019749	0	0.037801	0.000322	7.1E-05	0	0.000393	0.000245	0.001326	0.001964	0.00035	7.73E-05	0	0.000427	0.000981	0.00379	0.005197	110.3089	17.00523	0
Statewide Totals	2048	UBUS	Aggregate	Aggregate	Gasoline	2015.849	189585.2891	189585.3	0	8063.397	0	0.003769	0	0.002576	0.006344	0.000226	0	1.19E-06	0.000227	0.000418	0.006656	0.007301	0.000246	0	1.29E-06	0.000247	0.001672	0.019017	0.020937	142.8629	0	0.306983
Statewide Totals	2048	UBUS	Aggregate	Aggregate	Diesel	67.61099	3678.838356	3678.838	0	270.444	0	0.000841	0	0	0.000841	6.58E-05	0	0	6.58E-05	1.22E-05	0.000129	0.000207	6.88E-05	0	0	6.88E-05	4.87E-05	0.000369	0.000486	2.681559	0	0
Statewide Totals	2048	UBUS	Aggregate	Aggregate	Electricity	17815.63	1964591.604	0	1964592	71262.52	3812127	0	0	0	0	0	0	0	0	0.017057	0.041688	0.058745	0	0	0	0	0.06823	0.119108	0.187337	0	0	0
Statewide Totals	2048	UBUS	Aggregate	Aggregate	Natural Ga	269.6232	19712.98499	19712.98	0	1078.493	0	0.003199	0	0	0.003199	0.000235	0	0	0.000235	6.52E-05	0.000692	0.000992	0.000246	0	0	0.000246	0.000261	0.001977	0.002484	13.22121	0	0
Statewide Totals	2049	HHDT	Aggregate	Aggregate	Gasoline	30.09666	3653.204687	3653.205	0	602.174	0	0.009378	0	0.001096	0.010475	4.71E-06	0	3.12E-07	5.02E-06	2.01E-05	0.000129	0.000155	5.12E-06	0	3.4E-07	5.46E-06	8.05E-05	0.00037	0.000456	6.827646	0	0.0282
Statewide Totals	2049	HHDT	Aggregate	Aggregate	Diesel	449284.9	69230432.59	69230433	0	7953883	0	94.27581	35.5318	21.62405	151.4317	1.965441	0.014466	0	1.979907	0.682186	2.209457	4.871549	2.054309	0.01512	0	2.06943	2.728742	6.312734	11.11091	96207.29	6681.832	0
Statewide Totals	2049	HHDT	Aggregate	Aggregate	Electricity	125446.5	12090648.14	0	12090648	1596042	22052136	0	0	0	0	0	0	0	0	0.11484	0.203431	0.318271	0	0	0	0	0.459358	0.581232	1.04059	0	0	0
Statewide Totals	2049	HHDT	Aggregate	Aggregate	Natural Ga	19539.18	1227039.601	1227040	0	154721	0	0.252785	0.187506	0	0.440292	0.001925	0.000675	0	0.0026	0.012173	0.067793	0.082566	0.002093	0.000734	0	0.002827	0.048693	0.193694	0.245214	1487.324	196.864	0
Statewide Totals	2049	LDA	Aggregate	Aggregate	Gasoline	12919645	499985494.8	5E+08	0	60110740	0	10.67043	0	10.43808	21.10851	0.260303	0	0.048047	0.30835	1.10228	1.476515	2.887145	0.283103	0	0.052256	0.335359	4.40912	4.218615	8.963094	125619.5	0	3530.049
Statewide Totals	2049	LDA	Aggregate	Aggregate	Diesel	8340.151	293325.8852	293325.9	0	37269.89	0	0.004048	0	0	0.004048	0.000306	0	0	0.000306	0.000647	0.000868	0.001821	0.00032	0	0	0.00032	0.002587	0.002479	0.005386	59.4737	0	0
Statewide Totals	2049	LDA	Aggregate	Aggregate	Electricity	1791984	70851899.91	0	70851900	8401165	27354681	0	0	0	0	0	0	0	0	0.156202	0.120081	0.276283	0	0	0	0	0.624807	0.343088	0.967895	0	0	0
Statewide Totals	2049	LDA	Aggregate	Aggregate	Plug-in Hyb	608402	23780699.99	9689184	14091516	2515742	4256058	0.070865	0	0.314877	0.385742	0.005059	0	0.002104	0.007163	0.052427	0.037046	0.096636	0.005502	0	0.002289	0.007791	0.20971	0.105845	0.323346	3064.637	0	153.4786
Statewide Totals	2049	LDT1	Aggregate	Aggregate	Gasoline	975176.5	34745438.16	34745438	0	4401691	0	0.798442	0	0.837	1.635442	0.019637	0	0.003833	0.02347	0.076601	0.124495	0.224566	0.021357	0	0.004169	0.025526	0.306403	0.355701	0.687629	10099.44	0	301.0047
Statewide Totals	2049	LDT1	Aggregate	Aggregate	Diesel	11.16894	412.7579485	412.7579	0	51.46077	0	1.34E-05	0	0	1.34E-05	1.89E-06	0	0	1.89E-06	9.1E-07	1.47E-06	4.27E-06	1.97E-06	0	0	1.97E-06	3.64E-06	4.2E-06	9.81E-06	0.156454	0	0
Statewide Totals	2049	LDT1	Aggregate	Aggregate	Electricity	29884.15	1147405.803	0	1147406	139239.7	442993.3	0	0	0	0	0	0	0	0	0.00253	0.001947	0.004476	0	0	0	0	0.010118	0.005562	0.01568	0	0	0
Statewide Totals	2049	LDT1	Aggregate	Aggregate	Plug-in Hyb	22758.48	860019.0593	349955.4	510063.6	94106.31	154054.4	0.002565	0	0.011763	0.014328	0.000182	0	7.62E-05	0.000258	0.001896	0.001344	0.003499	0.000198	0	8.29E-05	0.000281	0.007584	0.003841	0.011706	111.0293	0	6.585903
Statewide Totals	2049	LDT2	Aggregate	Aggregate	Gasoline	7763910	288577623	2.89E+08	0	35788038	0	6.986967	0	7.849642	14.83661	0.154967	0	0.029383	0.18435	0.636205	1.018523	1.839079	0.168541	0	0.031957	0.200498	2.544821	2.910066	5.655384	86982.02	0	2576.537
Statewide Totals	2049	LDT2	Aggregate	Aggregate	Diesel	29766	1107047.082	1107047	0	137318	0	0.036224	0	0	0.036224	0.004996	0	0	0.004996	0.002441	0.003906	0.011342	0.005222	0	0	0.005222	0.009762	0.01116	0.026144	310.485	0	0
Statewide Totals	2049	LDT2	Aggregate	Aggregate	Electricity	313518.3	8451951.606	0	8451952	1468283	3263151	0	0	0	0	0	0	0	0	0.018633	0.014335	0.032969	0	0	0	0	0.074533	0.040958	0.115491	0	0	0
Statewide Totals	2049	LDT2	Aggregate	Aggregate	Plug-in Hyb	213316.4	8016358.282	3265526	4750833	882063.4	1434893	0.023915	0	0.110378	0.134293	0.001707	0	0.000725	0.002432	0.017673	0.012517	0.032622	0.001857	0	0.000788	0.002645	0.070692	0.035762	0.1091	1034.602	0	64.84508
Statewide Totals	2049	LHDT1	Aggregate	Aggregate	Gasoline	307225.6	10853676.69	10853677	0	4577203	0	0.190703	0.008113	1.965786	2.164602	0.012898	0	0.000445	0.013343	0.023928	0.326621	0.363892	0.014028	0	0.000484	0.014512	0.095713	0.933202	1.043427	7459.654	36.153	118.3172
Statewide Totals	2049	LHDT1	Aggregate	Aggregate	Diesel	221609.6	7546252.94	7546253	0	2787570	0	1.655677	0.225655	0	1.881331	0.117219	0.006446	0	0.123665	0.024955	0.22709	0.37571	0.122519	0.006738	0	0.129256	0.09982	0.648829	0.877905	4405.252	28.06698	0
Statewide Totals	2049	LHDT1	Aggregate	Aggregate	Electricity	415463.2	17288143.67	0	17288144	5805702	10501519	0	0	0	0	0	0	0	0	0.038114	0.260127	0.298241	0	0	0	0	0.152455	0.74322	0.895675	0	0	0
Statewide Totals	2049	LHDT2	Aggregate	Aggregate	Gasoline	39291.48	1335718.941	1335719	0	585384.5	0	0.029677	0.000887	0.210203	0.240768	0.001583	0	5.74E-05	0.00164	0.002945	0.046895	0.05148	0.001721	0	6.24E-05	0.001784	0.011779	0.133986	0.147549	1019.295	5.321081	14.87763
Statewide Totals	2049	LHDT2	Aggregate	Aggregate	Diesel	111767	3595642.736	3595643	0	1405888	0	1.20694	0.127999	0	1.334938	0.07406	0.003241	0	0.077301	0.011891	0.126238	0.21543	0.077409	0.003388	0	0.080796	0.047562	0.36068	0.489039	2461.017	23.22131	0
Statewide Totals	2049	LHDT2	Aggregate	Aggregate	Electricity	107800.5	4329129.169	0	4329129	1426267	2600730	0	0	0	0	0	0	0	0	0.009544	0.075995	0.085539	0	0	0	0	0.038176	0.217128	0.255305	0	0	0
Statewide Totals	2049	MCY	Aggregate	Aggregate	Gasoline	755062.1	4107074.073	4107074	0	1510124	0	2.098807	0	0.098792	2.197599	0.009755	0	0.005465	0.015221	0.004527	0.019015	0.038763	0.010465	0	0.005863	0.016328	0.018109	0.054327	0.088764	853.2644	0	58.65734
Statewide Totals	2049	MDV	Aggregate	Aggregate	Gasoline	4518185	162415732.7	1.62E+08	0	20667526	0	4.084073	0	4.760879	8.844952	0.087639	0	0.01711	0.104749	0.358066	0.581279	1.044093	0.095315	0	0.018609	0.113924	1.432262	1.660796	3.206983	59291.87	0	1811.495
Statewide Totals	2049	MDV	Aggregate	Aggregate	Diesel	50688.77	1774820.773	1774821	0	229047.3	0	0.025854	0	0	0.025854	0.001947	0	0	0.001947	0.003913	0.006367	0.012227	0.002035	0	0	0.002035	0.015651	0.018191	0.035877	648.816	0	0
Statewide Totals	2049	MDV	Aggregate	Aggregate	Electricity	288256.1	7668056.314	0	7668056	1343503	2960503	0	0	0	0	0	0	0	0	0.016905	0.013021	0.029927	0	0	0	0	0.067621	0.037204	0.104825	0	0	0
Statewide Totals	2049	MDV	Aggregate	Aggregate	Plug-in Hyb	135907.4	4948491.739	2016341	2932150	561977.1	885596.8	0.014756	0	0.07031	0.085066	0.001063	0	0.000468	0.001531	0.01091	0.007731	0.020172	0.001156	0	0.000509	0.001665	0.043638	0.022089	0.067392	638.4826	0	50.27977
Statewide Totals	2049	MH	Aggregate	Aggregate	Gasoline	45337.66	483702.7493	483702.7	0	4535.579	0	0.116195	0	0.001806	0.118001	0.000626	0	1.72E-06	0.000628	0.0016	0.008208	0.010436	0.000681	0	1.87E-06	0.000683	0.006398	0.023453	0.030534	987.5511	0	0.147372
Statewide Totals	2049	MH	Aggregate	Aggregate	Diesel	29613.08	276143.8267	276143.8	0	2961.308	0	0.653414	0	0	0.653414	0.005752	0	0	0.005752	0.001218	0.004666	0.011636	0.006012	0	0	0.006012	0.00487	0.013331	0.024214	319.1203	0	0
Statewide Totals	2049	MHDT	Aggregate	Aggregate	Gasoline	21473.13	1057013.277	1057013	0	429634.4	0	0.073723	0.001338	0.212808	0.287869	0.001375	0	0.000221	0.001596	0.003495	0.017929	0.023021	0.001496	0	0.000241	0.001736	0.013982	0.051225	0.066943	1699.992	10.93395	17.31443
Statewide Totals	2049	MHDT	Aggregate	Aggregate	Diesel	233352.1	10100592.17	10100592	0	2843959	0	2.980327	1.654743	3.529133	8.164202	0.038901	0.000634	0	0.039535	0.033402	0.171811	0.244748	0.04066	0.000663	0	0.041323	0.133608	0.490888	0.665818	10875.33	477.6185	0
Statewide Totals	2049	MHDT	Aggregate	Aggregate	Electricity	260254.2	11594574.05	0	11594574	3319565	12368463	0	0	0	0	0	0	0	0	0.038342	0.098879	0.137221	0	0	0	0	0.15337	0.28251	0.43588	0	0	0
Statewide Totals	2049	MHDT	Aggregate	Aggregate	Natural Ga	3629.907	147672.1337	147672.1	0	33781.39	0	0.00932	0.025083	0	0.034404	0.000213	9.17E-05	0	0.000304	0.000488	0.002526	0.003319	0.000231	9.98E-05	0	0.000331	0.001953	0.007217	0.009502	139.6633	21.47601	0
Statewide Totals	2049	OBUS	Aggregate	Aggregate	Gasoline	4949.542	166921.4158	166921.4	0	99030.44	0	0.045827	0.000263	0.037506	0.083596	0.000199	0	2.84E-05	0.000227	0.000552	0.002849	0.003628	0.000216	0	3.08E-05	0.000247	0.002208	0.00814	0.010595	272.3504	1.865163	2.866389
Statewide Totals	2049	OBUS	Aggregate	Aggregate	Diesel	12365.33	798909.3451	798909.3	0	145465.4	0	0.651057	0.067754	0.145527	0.864338	0.009071	5.55E-05	0	0.009126	0.002642	0.019233	0.031001	0.009481	5.8E-05	0	0.009539	0.010568	0.05495	0.075057	1058.918	28.71379	0
Statewide Totals	2049	OBUS	Aggregate	Aggregate	Electricity	3551.377	216830.7855	0	216830.8	71055.96	234672.4	0	0	0	0	0	0	0	0	0.000717	0.00185	0.002567	0	0	0	0	0.002868	0.005286	0.008154	0	0	0
Statewide Totals	2049	OBUS	Aggregate	Aggregate	Natural Ga	1085.322	54838.75403	54838.75	0	9659.364	0	0.004975	0.001787	0	0.006763	7.42E-05	5.9E-06	0	8.01E-05	0.000181	0.000942	0.001203	8.07E-05	6.42E-06	0	8.71E-05	0.000725	0.00269	0.003503	49.3787	1.382029	0
Statewide Totals	2049	SBUS	Aggregate	Aggregate	Gasoline	2971.285	147360.949	147360.9	0	11885.14	0	0.016921	0.001849	0.006747	0.025518	0.00022	0	1.05E-05	0.000231	0.000325	0.002606	0.003162	0.00024	0	1.14E-05	0.000251	0.0013	0.007447	0.008997	121.1036	7.522132	0.636456

Statewide Totals	2049	SBUS	Aggregate	Aggregate	Diesel	9022.82	187496.7376	187496.7	0	130650.4	0	0.062825	0.054817	0.079834	0.197477	0.000612	2.29E-05	0	0.000635	0.00062	0.003278	0.004532	0.000639	2.4E-05	0	0.000663	0.00248	0.009364	0.012508	215.7821	18.10693	0
Statewide Totals	2049	SBUS	Aggregate	Aggregate	Electricity	13823.64	395500.8002	0	395500.8	175039.1	432527	0	0	0	0	0	0	0	0	0.001178	0.003484	0.004662	0	0	0	0	0.004711	0.009955	0.014666	0	0	0
Statewide Totals	2049	SBUS	Aggregate	Aggregate	Natural Ga:	3394.381	70589.20099	70589.2	0	49150.64	0	0.015625	0.018639	0	0.034263	0.000306	6.83E-05	0	0.000375	0.000233	0.001263	0.001871	0.000333	7.43E-05	0	0.000408	0.000934	0.003608	0.004949	104.2979	16.10356	0
Statewide Totals	2049	UBUS	Aggregate	Aggregate	Gasoline	2046.671	193031.8001	193031.8	0	8186.683	0	0.003892	0	0.002616	0.006508	0.00023	0	1.21E-06	0.000231	0.000426	0.006777	0.007434	0.00025	0	1.31E-06	0.000252	0.001702	0.019363	0.021317	145.1405	0	0.311995
Statewide Totals	2049	UBUS	Aggregate	Aggregate	Diesel	67.64571	3681.023995	3681.024	0	270.5829	0	0.000853	0	0	0.000853	6.76E-05	0	0	6.76E-05	1.22E-05	0.000129	0.000209	7.06E-05	0	0	7.06E-05	4.87E-05	0.000369	0.000489	2.683154	0	0
Statewide Totals	2049	UBUS	Aggregate	Aggregate	Electricity	18128.57	2001384.278	0	2001384	72514.27	3886915	0	0	0	0	0	0	0	0	0.017386	0.042468	0.059855	0	0	0	0	0.069545	0.121338	0.190883	0	0	0
Statewide Totals	2049	UBUS	Aggregate	Aggregate	Natural Ga:	275.0556	20135.50384	20135.5	0	1100.222	0	0.003271	0	0	0.003271	0.00024	0	0	0.00024	6.66E-05	0.000707	0.001014	0.000251	0	0	0.000251	0.000266	0.00202	0.002537	13.48089	0	0
Statewide Totals	2050	HHDT	Aggregate	Aggregate	Gasoline	29.48128	3609.663539	3609.664	0	589.8614	0	0.009421	0	0.001273	0.010694	4.65E-06	0	3.07E-07	4.96E-06	1.99E-05	0.000128	0.000153	5.06E-06	0	3.34E-07	5.39E-06	7.96E-05	0.000366	0.00045	6.731993	0	0.027575
Statewide Totals	2050	HHDT	Aggregate	Aggregate	Diesel	459625.8	71123345.85	71123346	0	8162888	0	96.71974	36.53532	22.14894	155.404	2.020825	0.014865	0	2.03569	0.700928	2.26986	5.006478	2.112197	0.015537	0	2.127735	2.803711	6.485314	11.41676	98727.43	6867.39	0
Statewide Totals	2050	HHDT	Aggregate	Aggregate	Electricity	130350.5	12478650.06	0	12478650	1656528	22759984	0	0	0	0	0	0	0	0	0.118504	0.209841	0.328345	0	0	0	0	0.474016	0.599547	1.073563	0	0	0
Statewide Totals	2050	HHDT	Aggregate	Aggregate	Natural Ga:	19502.11	1228095.025	1228095	0	155633.1	0	0.238622	0.189281	0	0.427902	0.001911	0.000685	0	0.002596	0.012184	0.067476	0.082256	0.002078	0.000745	0	0.002824	0.048735	0.192788	0.244347	1485.68	197.7288	0
Statewide Totals	2050	LDA	Aggregate	Aggregate	Gasoline	12955079	500531731.4	5.01E+08	0	60280110	0	10.67771	0	10.45926	21.13696	0.259381	0	0.047883	0.307264	1.103484	1.477908	2.888657	0.2821	0	0.052077	0.334178	4.413937	4.222595	8.97071	125691.6	0	3535.855
Statewide Totals	2050	LDA	Aggregate	Aggregate	Diesel	8270.795	292362.5082	292362.5	0	37049.55	0	0.003408	0	0	0.003408	0.000281	0	0	0.000281	0.000645	0.000865	0.00179	0.000294	0	0	0.000294	0.002578	0.00247	0.005342	59.16117	0	0
Statewide Totals	2050	LDA	Aggregate	Aggregate	Electricity	1802523	71014337.9	0	71014338	8444493	27417396	0	0	0	0	0	0	0	0	0.15656	0.120359	0.276919	0	0	0	0	0.626239	0.343883	0.970122	0	0	0
Statewide Totals	2050	LDA	Aggregate	Aggregate	Plug-in Hyb	610876.9	23809130.04	9697502	14111628	2525976	4262132	0.07092	0	0.316162	0.387082	0.005037	0	0.002096	0.007133	0.05249	0.03709	0.096713	0.005478	0	0.00228	0.007758	0.209961	0.105971	0.32369	3067.059	0	154.0211
Statewide Totals	2050	LDT1	Aggregate	Aggregate	Gasoline	976830.1	34749369.35	34749369	0	4409241	0	0.797019	0	0.836415	1.633435	0.019402	0	0.003785	0.023186	0.076609	0.12448	0.224275	0.021101	0	0.004116	0.025217	0.306437	0.355656	0.687311	10083.36	0	300.7683
Statewide Totals	2050	LDT1	Aggregate	Aggregate	Diesel	11.27726	414.6495567	414.6496	0	51.87281	0	1.34E-05	0	0	1.34E-05	1.9E-06	0	0	1.9E-06	9.14E-07	1.48E-06	4.29E-06	1.98E-06	0	0	1.98E-06	3.66E-06	4.22E-06	9.86E-06	0.157095	0	0
Statewide Totals	2050	LDT1	Aggregate	Aggregate	Electricity	30411.55	1157486.365	0	1157486	141339.9	446885.3	0	0	0	0	0	0	0	0	0.002552	0.001964	0.004516	0	0	0	0	0.010207	0.005612	0.015819	0	0	0
Statewide Totals	2050	LDT1	Aggregate	Aggregate	Plug-in Hyb	23138.67	868038.1304	353180.2	514858	95678.38	155502.5	0.002588	0	0.01196	0.014548	0.000183	0	7.72E-05	0.00026	0.001914	0.001357	0.003531	0.000199	0	8.4E-05	0.000283	0.007655	0.003877	0.011815	112.0435	0	6.694804
Statewide Totals	2050	LDT2	Aggregate	Aggregate	Gasoline	7787616	288887957.9	2.89E+08	0	35896549	0	6.990119	0	7.878714	14.86883	0.154117	0	0.029239	0.183356	0.636889	1.01951	1.839756	0.167617	0	0.0318	0.199416	2.547557	2.912887	5.65986	86975.28	0	2579.893
Statewide Totals	2050	LDT2	Aggregate	Aggregate	Diesel	29899.7	1108867.522	1108868	0	137853.6	0	0.036031	0	0	0.036031	0.004999	0	0	0.004999	0.002445	0.003913	0.011356	0.005225	0	0	0.005225	0.009779	0.011179	0.026183	310.7175	0	0
Statewide Totals	2050	LDT2	Aggregate	Aggregate	Electricity	316975.9	8493583.383	0	8493583	1482110	3279224	0	0	0	0	0	0	0	0	0.018725	0.014407	0.033132	0	0	0	0	0.074901	0.041162	0.116063	0	0	0
Statewide Totals	2050	LDT2	Aggregate	Aggregate	Plug-in Hyb	215228.8	8050473.278	3278620	4771853	889971.1	1441242	0.024009	0	0.11137	0.13538	0.001708	0	0.000728	0.002435	0.017748	0.01257	0.032754	0.001857	0	0.000791	0.002649	0.070993	0.035915	0.109557	1038.663	0	65.40373
Statewide Totals	2050	LHDT1	Aggregate	Aggregate	Gasoline	301498.7	10691036.99	10691037	0	4491882	0	0.178571	0.007897	1.893425	2.079892	0.012742	0	0.00044	0.013182	0.02357	0.321726	0.358478	0.013858	0	0.000478	0.014336	0.094279	0.919218	1.027833	7332.783	35.41433	115.8835
Statewide Totals	2050	LHDT1	Aggregate	Aggregate	Diesel	216951.8	7413722.086	7413722	0	2728981	0	1.532698	0.215433	0	1.748131	0.112082	0.006314	0	0.118396	0.024517	0.223102	0.366014	0.11715	0.006599	0	0.123749	0.098067	0.637434	0.85925	4321.921	27.39292	0
Statewide Totals	2050	LHDT1	Aggregate	Aggregate	Electricity	428139.8	17604208.39	0	17604208	5981876	10695066	0	0	0	0	0	0	0	0	0.038811	0.264883	0.303693	0	0	0	0	0.155243	0.756807	0.91205	0	0	0
Statewide Totals	2050	LHDT2	Aggregate	Aggregate	Gasoline	38433.52	1311919.259	1311919	0	572602.2	0	0.028316	0.000854	0.200724	0.229893	0.00156	0	5.64E-05	0.001616	0.002892	0.04606	0.050568	0.001696	0	6.14E-05	0.001758	0.011569	0.131599	0.144926	998.996	5.191734	14.52398
Statewide Totals	2050	LHDT2	Aggregate	Aggregate	Diesel	109198.4	3527295.355	3527295	0	1373579	0	1.072576	0.121622	0	1.194199	0.068903	0.003171	0	0.072074	0.011665	0.123838	0.207577	0.072019	0.003314	0	0.075333	0.046658	0.353824	0.475815	2410.116	22.5991	0
Statewide Totals	2050	LHDT2	Aggregate	Aggregate	Electricity	111287.8	4415718.651	0	4415719	1472330	2653015	0	0	0	0	0	0	0	0	0.009735	0.077515	0.08725	0	0	0	0	0.03894	0.221471	0.260411	0	0	0
Statewide Totals	2050	MCY	Aggregate	Aggregate	Gasoline	751899	4102973.011	4102973	0	1503798	0	2.086306	0	0.091344	2.17765	0.009781	0	0.005531	0.015312	0.004523	0.018996	0.03883	0.010492	0	0.005933	0.016425	0.018091	0.054273	0.08879	851.978	0	57.18049
Statewide Totals	2050	MDV	Aggregate	Aggregate	Gasoline	4525945	162516082.6	1.63E+08	0	20712181	0	4.074203	0	4.774055	8.848258	0.086995	0	0.016984	0.103979	0.358287	0.581555	1.043822	0.094615	0	0.018472	0.113087	1.433147	1.661587	3.207821	59236.34	0	1810.972
Statewide Totals	2050	MDV	Aggregate	Aggregate	Diesel	50618.16	1772512.003	1772512	0	228926.1	0	0.021176	0	0	0.021176	0.001779	0	0	0.001779	0.003908	0.006356	0.012043	0.001859	0	0	0.001859	0.015631	0.01816	0.03565	646.54	0	0
Statewide Totals	2050	MDV	Aggregate	Aggregate	Electricity	291460.9	7705208.465	0	7705208	1356175	2974846	0	0	0	0	0	0	0	0	0.016987	0.013085	0.030072	0	0	0	0	0.067948	0.037387	0.105335	0	0	0
Statewide Totals	2050	MDV	Aggregate	Aggregate	Plug-in Hyb	137244.3	4972064.436	2025329	2946735	567505.3	890001.9	0.014821	0	0.071004	0.085824	0.001062	0	0.00047	0.001531	0.010962	0.007768	0.020261	0.001155	0	0.000511	0.001665	0.043846	0.022195	0.067706	641.2821	0	50.75101
Statewide Totals	2050	MH	Aggregate	Aggregate	Gasoline	45271.34	482893.1737	482893.2	0	4528.945	0	0.111257	0	0.001672	0.112929	0.000627	0	1.73E-06	0.000629	0.001597	0.008195	0.010421	0.000682	0	1.88E-06	0.000684	0.006388	0.023414	0.030485	985.9321	0	0.145667
Statewide Totals	2050	MH	Aggregate	Aggregate	Diesel	29447.47	275006.9349	275006.9	0	2944.747	0	0.644717	0	0	0.644717	0.005139	0	0	0.005139	0.001213	0.004647	0.010998	0.005371	0	0	0.005371	0.00485	0.013276	0.023498	317.8446	0	0
Statewide Totals	2050	MHDT	Aggregate	Aggregate	Gasoline	20973.6	1040535.219	1040535	0	419639.7	0	0.071766	0.001294	0.224099	0.297159	0.001356	0	0.000217	0.001573	0.003441	0.01765	0.022664	0.001475	0	0.000236	0.001711	0.013764	0.050428	0.065903	1670.705	10.63879	16.76053
Statewide Totals	2050	MHDT	Aggregate	Aggregate	Diesel	234387.9	10207488.26	10207488	0	2860504	0	2.952692	1.649791	3.523677	8.12616	0.039071	0.000634	0	0.039705	0.033755	0.173605	0.247066	0.040838	0.000662	0	0.0415	0.135022	0.496015	0.672537	10963.93	477.5331	0
Statewide Totals	2050	MHDT	Aggregate	Aggregate	Electricity	270697.6	11977372.61	0	11977373	3451350	12774993	0	0	0	0	0	0	0	0	0.039608	0.102144	0.141752	0	0	0	0	0.158434	0.29184	0.450273	0	0	0
Statewide Totals	2050	MHDT	Aggregate	Aggregate	Natural Ga:	3612.452	147639.6676	147639.7	0	33773.53	0	0.009197	0.024892	0	0.034089	0.000213	9.14E-05	0	0.000305	0.000488	0.002525	0.003318	0.000232	9.94E-05	0	0.000331	0.001953	0.007215	0.009499	139.4637	21.32034	0
Statewide Totals	2050	OBUS	Aggregate	Aggregate	Gasoline	4753.667	163536.8819	163536.9	0	95111.37	0	0.045081	0.000249	0.034059	0.079389	0.000197	0	2.82E-05	0.000225	0.000541	0.002791	0.003557	0.000214	0	3.06E-05	0.000244	0.002163	0.007975	0.010383	265.9194	1.779729	2.720527
Statewide Totals	2050	OBUS	Aggregate	Aggregate	Diesel	12384.87	801044.387	801044.4	0	145898.6	0	0.635318	0.067034	0.143437	0.84579	0.008861	5.5E-05	0	0.008916	0.002649	0.019304	0.030869	0.009262	5.75E-05	0	0.009319	0.010596	0.055155	0.07507	1060.844	28.82814	0
Statewide Totals	2050	OBUS	Aggregate	Aggregate	Electricity	3635.95	219208.1747	0	219208.2	72748.08	237256	0	0	0	0	0	0	0	0	0.000725	0.00187	0.002595	0	0	0	0	0.0029	0.005344	0.008243	0	0	0
Statewide Totals	2050	OBUS	Aggregate	Aggregate	Natural Ga:	1090.032	55137.86131	55137.86	0	9701.283	0	0.004891	0.001793	0	0.006685	7.52E-05	5.97E-06	0	8.12E-05	0.000182	0.000947	0.00121	8.18E-05	6.49E-06	0	8.83E-05	0.000729	0.002705	0.003523	49.54079	1.386918	0
Statewide Totals	2050	SBUS	Aggregate	Aggregate	Gasoline	2664.229	131130.3833	131130.4	0	10656.92	0	0.012678	0.001506	0.004926	0.019109	0.000197	0	9.44E-06	0.000207	0.000289	0.002319	0.002815	0.000214	0	1.03E-05	0.000225	0.001156	0.006627	0.008008	106.3975	6.668733	0.560929
Statewide Totals	2050	SBUS	Aggregate	Aggregate	Diesel	8596.971	179518.3677	179518.4	0	124484.1	0	0.05828	0.049368	0.072657	0.180305	0.000578	2.18E-05	0	0.0006	0.000594	0.003138	0.004331	0.000604	2.28E-05	0	0.000627	0.002375	0.008966	0.011967	205.535	17.14219	0
Statewide Totals	2050	SBUS	Aggregate	Aggregate	Electricity	14508.77	412455.8475	0	412455.8	183698.1	451074.7	0	0	0	0	0	0	0	0	0.001227	0.003634	0.004861	0	0	0	0	0.00491	0.010382	0.015292	0	0	0
Statewide Totals	2050	SBUS	Aggregate	Aggregate	Natural Ga:	3218.339	67334.47782	67334.48	0	46601.55	0	0.013866	0.017639	0	0.031505	0.000292	6.56E-05	0	0.000358	0.000223	0.001205	0.001785	0.000318	7.13E-05	0	0.000389	0.000891	0.003442	0.004722	98.96119	15.26427	0
Statewide Totals	2050	UBUS	Aggregate	Aggregate	Gasoline	2077.487	196478.228	196478.2	0	8309.949	0	0.00393	0	0.00263	0.00656	0.000234	0	1.23E-06	0.000235	0.000433	0.006898	0.007567	0.000255	0	1.33E-06	0.000256	0.001733	0.019709	0.021697	147.4184	0	0.316135
Statewide Totals	2050	UBUS	Aggregate	Aggregate	Diesel	67.68085	3683.258291	3683.258	0	270.7234	0	0.000878	0	0	0.000878	7.16E-05	0	0	7.16E-05	1.22E-05	0.000129	0.000213	7.49E-05	0	0	7.49E-05	4.87E-05	0.000369	0.000493	2.684784	0	0
Statewide Totals	2050	UBUS	Aggregate	Aggregate	Electricity	18441.39	2038168.128	0	2038168	73765.57	3961687	0	0	0	0	0	0	0	0	0.017715	0.043249	0.060964	0	0	0	0	0.070859	0.123568	0.194428	0	0	0
Statewide Totals	2050	UBUS	Aggregate	Aggregate	Natural Ga:	280.4868	20557.96795	20557.97	0	1121.947	0	0.003139	0	0	0.003139	0.000218	0	0	0.000218	6.8E-05	0.000722	0.001007	0.000228	0	0	0.000228	0.000272	0.002062	0.002562	13.74052	0	0

CO2_TOTE	CH4_RUNE	CH4_IDLEX	CH4_STREX	CH4_TOTE	N2O_RUNE	N2O_IDLEX	N2O_STRE	N2O_TOTE	ROG_RUNE	ROG_IDLEX	ROG_STRE	ROG_TOTE	ROG_DIUR	ROG_HOTS	ROG_RUNL	ROG_TOTA	TOG_RUNE	TOG_IDLEX	TOG_STRE	TOG_TOTE	TOG_DIUR	TOG_HOTS	TOG_RUNL	TOG_TOTA	CO_RUNEX	CO_IDLEX	CO_STREX	CO_TOTEX	SOx_RUNE	SOx_IDLEX	SOx_STREX	SOx_TOTE	NH3_RUNE	Fuel Consumption
1418.763	0.326952	0	0	0.326952	0.228418	0	0.00352	0.231937	2.673531	0	0	2.673531	0.119118	0.072875	0.224297	3.08982	3.079599	0	0	3.079599	0.119118	0.073188	0.225263	3.497168	82.69839	0	0.592826	83.29122	0.019102	0	0.000313	0.019415	0.018779	145.4735
70198.87	2.050309	0.263034	0	2.313343	10.60602	0.399196	0	11.00521	44.1426	5.663053	0	49.80565	0	0	0	49.80565	50.25299	6.446954	0	56.69994	0	0	0	56.69994	149.4709	19.9756	0	169.4465	5.826957	0.219754	0	6.046711	1.035157	6239.853
6.904432	0.018821	0.000506	0	0.019327	0.001475	3.84E-05	0	0.001513	0.003341	8.98E-05	0	0.003431	0	0	0	0.003431	0.022708	0.00061	0	0.023318	0	0	0	0.023318	0.001512	0.001949	0	0.003461	0	0	0	0	0.001445	0.857855
200089.1	22.79778	0	20.28621	43.08399	23.46194	0	4.925848	28.38779	135.2727	0	123.3392	258.612	62.14328	28.79688	116.0861	465.6383	161.5313	0	131.8651	293.3964	62.1433	28.92092	116.5862	501.0468	3179.268	0	1215.163	4394.431	2.599389	0	0.109233	2.708623	31.9556	20516.23
1061.047	0.049563	0	0	0.049563	0.166342	0	0	0.166342	1.067067	0	0	1.067067	0	0	0	1.067067	1.214784	0	0	1.214784	0	0	0	1.214784	5.35774	0	0	5.35774	0.090574	0	0	0.090574	0.009042	94.31463
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38253.79	6.05172	0	3.844121	9.895841	5.58234	0	0.908232	6.490571	41.00336	0	24.50248	65.50584	14.86443	7.57756	22.65411	110.6019	47.30852	0	26.23092	73.53944	14.86443	7.610199	22.75169	118.7658	985.6353	0	277.0958	1262.731	0.498111	0	0.023087	0.521197	5.133999	3922.369
97.21956	0.003277	0	0	0.003277	0.015241	0	0	0.015241	0.07056	0	0	0.07056	0	0	0	0.07056	0.080327	0	0	0.080327	0	0	0	0.080327	0.410293	0	0	0.410293	0.008384	0	0	0.008384	0.000698	8.641675
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80749.74	7.117971	0	6.456664	13.57464	9.889914	0	2.173425	12.06334	42.96178	0	39.27885	82.24063	14.83572	6.55495	28.98992	132.6212	51.201	0	41.97946	93.18046	14.83572	6.583184	29.11478	143.7141	1081.015	0	395.2402	1476.256	1.053879	0	0.040239	1.094119	9.238568	8279.711
7.862356	0.000245	0	0	0.000245	0.001233	0	0	0.001233	0.005269	0	0	0.005269	0	0	0	0.005269	0.005998	0	0	0.005998	0	0	0	0.005998	0.027513	0	0	0.027513	0.000674	0	0	0.000674	4.84E-05	0.698871
20312.63	1.968898	0.051872	0.363626	2.384396	1.482952	0.001275	0.167897	1.652124	12.70002	0.259031	2.345661	15.30471	2.133827	0.896271	5.757739	24.09255	15.50712	0.318469	2.510698	18.33629	2.133827	0.900131	5.782539	27.15278	260.3555	1.759018	37.77544	299.8899	0.273436	0.000866	0.002923	0.277225	0.853261	2082.765
4280.191	0.066696	0.000879	0	0.067575	0.667133	0.003881	0	0.671014	1.435927	0.018929	0	1.454857	0	0	0	1.454857	1.634708	0.02155	0	1.656257	0	0	0	1.656257	6.358903	0.156896	0	6.515798	0.369501	0.002146	0	0.371647	0.198441	380.4586
3122.885	0.295667	0.007201	0.058329	0.361197	0.20602	0.000171	0.023389	0.22958	1.961501	0.036555	0.392092	2.390148	0.322182	0.13992	0.834511	3.686761	2.370932	0.044847	0.420394	2.836173	0.322183	0.140523	0.838105	4.136984	40.60172	0.247754	5.267893	46.11736	0.0419	0.000141	0.000474	0.042515	0.11399	320.2065
1331.476	0.018893	0.000258	0	0.019151	0.207067	0.001671	0	0.208738	0.406746	0.005565	0	0.412311	0	0	0	0.412311	0.463054	0.006335	0	0.469389	0	0	0	0.469389	1.87493	0.046122	0	1.921051	0.113802	0.000916	0	0.114718	0.056423	118.3525
502.9431	0.879482	0	0.264159	1.143641	0.140233	0	0.012105	0.152338	7.076944	0	2.168265	9.24521	2.022944	2.498028	2.601203	16.36738	7.752456	0	2.343866	10.09632	2.022945	2.508787	2.612407	17.24046	76.96371	0	6.647252	83.61097	0.006086	0	0.000789	0.006875	0.011226	51.56949
43262.25	4.357306	0	3.468905	7.826211	5.20279	0	0.926766	6.129556	28.41563	0	21.54633	49.96196	6.979356	2.865661	12.7726	72.57957	33.40664	0	23.03764	56.44428	6.979359	2.878005	12.82761	79.12926	789.5817	0	204.0254	993.607	0.566063	0	0.021461	0.587524	4.530658	4435.914
165.0222	0.004672	0	0	0.004672	0.025871	0	0	0.025871	0.100594	0	0	0.100594	0	0	0	0.100594	0.11452	0	0	0.11452	0	0	0	0.11452	0.52421	0	0	0.52421	0.014268	0	0	0.014268	0.000911	14.66853
4575.734	0.440389	0	0.003491	0.44388	0.301735	0	0.000519	0.302254	3.138722	0	0.026367	3.165089	2.707436	1.341196	0.020501	7.234222	3.621207	0	0.028406	3.649613	2.707437	1.346973	0.020589	7.724613	106.5835	0	0.179435	106.763	0.062507	0	2.31E-05	0.06253	0.078711	469.1749
152.0889	0.001527	0	0	0.001527	0.023843	0	0	0.023843	0.032871	0	0	0.032871	0	0	0	0.032871	0.037422	0	0	0.037422	0	0	0	0.037422	0.119368	0	0	0.119368	0.0131	0	0	0.0131	0.003869	13.51891
7766.033	0.863573	0.015819	0.289932	1.169324	0.580248	0.00042	0.039732	0.620399	6.332185	0.101693	2.435237	8.869115	1.046162	0.549816	2.268217	12.73331	7.44965	0.119939	2.6269	10.19649	1.046162	0.552185	2.277986	14.07282	158.7051	1.268373	12.00687	171.9804	0.102745	0.000737	0.002414	0.105896	0.140161	796.2937
13632.97	0.379421	0.031255	0	0.410676	2.072885	0.064383	0	2.137268	8.168833	0.672906	0	8.841738	0	0	0	8.841738	9.299594	0.766052	0	10.06565	0	0	0	10.06565	20.91354	3.654737	0	24.56828	1.129506	0.035061	0	1.164567	0.297701	1211.811
946.1998	0.063279	0.001352	0.018108	0.082738	0.073233	2.93E-05	0.004044	0.077307	0.431357	0.007642	0.140372	0.579371	0.070931	0.034424	0.102461	0.787186	0.514825	0.009222	0.151163	0.67521	0.070931	0.034573	0.102902	0.883615	10.56975	0.050982	1.096484	11.71722	0.012684	5.16E-05	0.000151	0.012886	0.020015	97.01902
1061.344	0.042341	0.003814	0	0.046154	0.160882	0.005507	0	0.166389	0.91158	0.082112	0	0.993692	0	0	0	0.993692	1.037765	0.093478	0	1.131243	0	0	0	1.131243	2.505578	0.288777	0	2.794355	0.087972	0.003	0	0.090971	0.019407	94.341
258.0752	0.06367	0.008833	0.004058	0.07656	0.030742	0.000307	0.000404	0.031453	0.477963	0.055025	0.031678	0.564666	0.06259	0.03458	0.050426	0.712261	0.551258	0.064698	0.034097	0.650053	0.06259	0.034729	0.050643	0.798014	12.15782	0.361233	0.349479	12.86853	0.003346	0.000187	2.52E-05	0.003558	0.00661	26.46185
683.1776	0.023883	0.003238	0	0.027121	0.101322	0.005781	0	0.107103	0.514192	0.069719	0	0.583911	0	0	0	0.583911	0.585368	0.07937	0	0.664738	0	0	0	0.664738	1.247573	0.358048	0	1.605621	0.055622	0.003157	0	0.058779	0.013811	60.72645
73.81135	0.00321	0	0.000381	0.003591	0.00435	0	0.00013	0.00448	0.018151	0	0.002294	0.020446	0.00132	0.000407	0.002519	0.024692	0.022406	0	0.00245	0.024856	0.00132	0.000409	0.00253	0.029116	0.347826	0	0.051379	0.399206	0.001012	0	3.98E-06	0.001016	0.001954	7.56828
1814.512	0.00782	0	0	0.00782	0.284465	0	0	0.284465	0.168365	0	0	0.168365	0	0	0	0.168365	0.191671	0	0	0.191671	0	0	0	0.191671	1.15401	0	0	1.15401	0.153859	0	0	0.153859	0.026036	161.2888
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
369.5404	1.513825	0	0	1.513825	0.080979	0	0	0.080979	0.269007	0	0	0.269007	0	0	0	0.269007	1.826857	0	0	1.826857	0	0	0	1.826857	5.215392	0	0	5.215392	0	0	0	0	0.212962	45.91428
1221.214	0.274566	0	0	0.274566	0.188622	0	0.002681	0.191303	2.235079	0	0	2.235079	0.105175	0.066543	0.202609	2.609406	2.579958	0	0	2.579958	0.105175	0.066829	0.203481	2.955444	68.39087	0	0.484759	68.87562	0.016413	0	0.000284	0.016697	0.016393	125.1979
69682.93	1.973976	0.239389	0	2.213365	10.54057	0.383914	0	10.92449	42.49916	5.15398	0	47.65314	0	0	0	47.65314	48.38206	5.867414	0	54.24947	0	0	0	54.24947	136.7404	18.76106	0	155.5014	5.791032	0.211297	0	6.002329	1.033353	6194.081
14.32156	0.039877	0.000985	0	0.040862	0.002881	7.48E-05	0	0.002956	0.007079	0.000175	0	0.007254	0	0	0	0.007254	0.048113	0.001188	0	0.049301	0	0	0	0.049301	0.003121	0.003796	0	0.006917	0	0	0	0	0.00276	1.675762
197640.9	20.32362	0	20.00508	40.3287	21.50525	0	4.932068	26.43732	119.8306	0	121.0079	240.8385	60.3194	27.74655	107.2674	436.1719	143.6112	0	129.365	272.9761	60.31942	27.86606	107.7295	468.8911	2976.842	0	1182.452	4159.294	2.565731	0	0.109352	2.675083	30.84979	20262
918.4808	0.041824	0	0	0.041824	0.143994	0	0	0.143994	0.900439	0	0	0.900439	0	0	0	0.900439	1.025089	0	0	1.025089	0	0	0	1.025089	4.625919	0	0	4.625919	0.078413	0	0	0.078413	0.007892	81.64329
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36266.33	5.237364	0	3.64912	8.886484	4.88807	0	0.868382	5.756452	35.31962	0	23.12122	58.44084	13.89172	7.032515	20.65469	100.0198	40.84739	0	24.74869	65.59608	13.89172	7.062806	20.74365	107.2943	865.5581	0	258.2149	1123.773	0.471694	0	0.022146	0.49384	4.790825	3717.996
83.61976	0.002774	0	0	0.002774	0.013109	0	0	0.013109	0.059717	0	0	0.059717	0	0	0	0.059717	0.067984	0	0	0.067984	0	0	0	0.067984	0.348363	0	0	0.348363	0.007211	0	0	0.007211	0.000597	7.432918
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
83263.9	6.535748	0	6.632121	13.16787	9.377724	0	2.286609	11.66433	39.05091	0	40.05523	79.10614	14.76046	6.416538	27.36403	127.6472	46.7502	0	42.80543	89.55563	14.76046	6.444175	27.4819	138.2422	1046.003	0	398.3458	1444.349	1.085822	0	0.042098	1.12792	9.272272	8536.151
7.254412	0.000213	0	0	0.000213	0.001137	0	0	0.001137	0.00459	0	0	0.00459	0	0	0	0.00459	0.005226	0	0	0.005226	0	0	0	0.005226	0.025064	0	0	0.025064	0.000621	0	0	0.000621	4.56E-05	0.644841
21148.41	1.836695	0.057392	0.387293	2.28138	1.407142	0.001418	0.194157	1.602717	11.79154	0.28143	2.456114	14.52908	2.249392	0.919121	5.787839	23.48543	14.45774	0.347503	2.628225	17.43347	2.249392	0.92308	5.812769	26.41871	238.3752	1.914385	39.10958	279.3991	0.284557	0.000936	0.003086	0.288578	0.898358	2168.119
4813.431	0.074102	0.001001	0	0.075103	0.750204	0.004418	0	0.754622	1.595369	0.021551	0	1.61692	0	0	0	1.61692	1.816222	0.024534	0	1.840756	0	0	0	1.840756	6.98923	0.178624	0	7.167854	0.41556	0.002443	0	0.418003	0.223116	427.8634
3095.416	0.263714	0.007618	0.05958	0.330912	0.186914	0.000183	0.026026	0.213123	1.745568	0.037991	0.394999	2.178558	0.32664	0.139997	0.805675	3.45087	2.115305	0.046795	0.423452	2.585551	0.32664	0.1406	0.809146	3.861936	35.69129	0.257845	5.192155	41.14129	0.041501	0.000145	0.000481	0.042128	0.114196	317.3397
1394.489	0.019845	0.000279	0	0.020123	0.216794	0.001826	0	0.21862	0.427248	0.005999	0	0.433247	0	0	0	0.433247	0.486394	0.006829	0	0.493223	0	0	0	0.493223	1.947875	0.049721	0	1.997596	0.119243	0.001001	0	0.120245	0.058978	123.9554
679.5413	1.176921	0	0.314353	1.491274	0.193213	0	0.014683	0.207896	9.34696	0	2.562029	11.90899	2.487843	3.057293	3.163104	20.61723	10.28153	0	2.768701	13.05024	2.487844	3.070462	3.176729	21.78527	101.9971	0	8.324011	110.3211	0.008328	0	0.000962	0.00929	0.016138	69.66606
49908.39	4.225975	0	4.034009	8.259984	5.178375	0	1.172366	6.350741	27.12149	0	24.66453	51.78601	7.40096	2.990076	12.72559	74.90264	32.04678	0	26.36613	58.41291	7.400963	3.002955	12.7804	81.59722	777.646	0	219.624	997.2699	0.652753	0	0.02476	0.677513	4.99255	5116.57
141.9564	0.003974	0	0	0.003974	0.022255	0	0	0.022255	0.085557	0	0	0.085557	0	0	0	0.085557	0.097401	0	0	0.097401	0	0	0	0.097401	0.45079	0	0	0.45079	0.012267	0	0	0.012267	0.000786	12.61843
4271.565	0.384564	0	0.003243	0.387807	0.264443	0	0.00053	0.264973	2.730601	0	0.024314	2.754915	2.558004	1.253241	0.019311	6.585472	3.157417	0	0.026193	3.18361	2.558005	1.258639	0.019394	7.019648	91.71842	0	0.169002	91.88742	0.058366	0	2.18E-05	0.058388	0.075694	437.9176
172.3908	0.001619	0	0	0.001619	0.027026	0	0	0.027026	0.034853	0	0	0.034853	0	0	0	0.034853	0.039678	0	0	0.039678	0	0	0	0.039678	0.126697	0	0	0.126697	0.014847	0	0	0.014847	0.004398	15.32373
7178.902	0.72889	0.01529	0.270621	1.014801	0.521446	0.000394	0.038502	0.560343	5.284499	0.097373	2.268968	7.650839	0.953273	0.504034	2.087534	11.19568	6.243149	0.115427	2.446989	8.805564	0.953273	0.506205	2.096526	12.36157	131.4246	1.218117	11.88136	144.5241	0.094853	0.000704	0.002261	0.097818	0.134107	735.9756
13606.39	0.362131	0.031193	0	0.393324	2.062251	0.07088	0	2.133131	7.796582	0.671574	0	8.468156	0	0	0	8.468156	8.875815	0.764536	0	9.640351	0	0	0	9.640351	20.00699	3.76853	0	23.77552	1.123701	0.038615	0	1.162316	0.29719	1209.465
1029.607	0.057699	0.001513	0.018368	0.07758	0.073568	3.19E-05	0.004292	0.077891	0.382699	0.008356	0.139312	0.530367	0.067063	0.032532	0.096803	0.726765	0.459493	0.010154	0.149924	0.619571	0.067063	0.032672	0.09722	0.816527	10.43168	0.055903	1.210551	11.69813	0.013808	5.59E-05	0.000154	0.014018	0.022436	105.5545
1062.782	0.040961	0.004285	0	0.045246	0.160258	0.006359	0	0.166617	0.881882	0.092251	0	0.974133	0	0	0	0.974133	1.003956	0.105021	0	1.108976	0	0	0	1.108976	2.421731	0.327842	0	2.749573	0.087632	0.003464	0	0.091096	0.019374	94.47018
237.8401	0.06054	0.008325	0.003955	0.072819	0.029264	0.00027	0.0004	0.029935	0.452594	0.052162	0.030891	0.535647	0.056768	0.031192	0.047444	0.671052	0.523837	0.061727	0.033245	0.618809	0.056768	0.031326	0.047649	0.754552	11.40284	0.344421	0.349647	12.09691	0.003078	0.000178	2.41E-05	0.003279	0.006308	24.38318
680.395	0.023108	0.003037	0	0.026145	0.100804	0.005865	0	0.106668	0.497504	0.065381	0	0.562885	0	0	0	0.562885	0.56637	0.074432	0	0.640802	0	0	0	0.640802	1.209042	0.343113	0	1.552156	0.055337	0.003202	0	0.058539	0.013786	60.47997
70.74089	0.002734	0	0.000336	0.00307	0.003705	0	0.000121	0.003826	0.015584	0	0.001983	0.017568	0.001118	0.000345	0.001923	0.020954	0.019309	0	0.002118	0.021427	0.001118	0.000346	0.001931	0.024823	0.299355	0	0.04324	0.342595	0.000969	0	3.38E-06	0.000972	0.001888	7.252303
1713.117	0.007242	0	0	0.007242	0.268573	0	0	0.268573	0.155909	0	0	0.155909	0	0	0	0.155909	0.17749	0	0	0.17749	0	0	0	0.17749	1.073025	0	0	1.073025	0.14575	0	0	0.14575	0.024827	152.2781
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
526.6049	2.061239	0	0	2.061239	0.108675	0	0	0.108675	0.36621	0	0	0.36621	0	0	0	0.36621	2.487387	0	0	2.487387	0	0	0	2.487387	7.026404	0	0	7.026404	0	0	0	0	0.28238	61.61792
1140.487	0.244144	0	0	0.244144	0.163271	0	0.001949	0.16522	1.96332	0	0	1.96332	0.091549	0.057537	0.17392	2.286327	2.275734	0	0	2.275734	0.091549	0.057785	0.174669	2.599738	58.51371	0	0.434479	58.94819	0.015347	0	0.000248	0.015595	0.015706	116.7335
71036.47	2.018899	0.230588	0	2.249487	10.74058	0.396538	0	11.13712	43.46635	4.964496	0	48.43085	0	0	0	48.43085	49.48313	5.651701	0	55.13483	0	0	0	55.13483	137.024	18.83196	0	155.856	5.901042	0.218253	0	6.119295	1.056591	6314.644
58.68546	0.174235	0.004073	0	0.178308	0.011757	0.000309	0	0.012066	0.03093	0.000723	0	0.031653	0	0	0	0.031653	0.210223	0.004914	0	0.215137	0	0	0	0.215137	0.013354	0.015697	0	0.029052	0	0	0	0	0.011032	6.841303
204109	19.29259	0	19.44471	38.7373	20.82324	0	4.88217	25.70541	112.5869	0	116.5615	229.1484	57.63571	26.1161	97.07816	409.9784	135.4457	0	124.605	260.0508	57.63573	26.22859	97.4963	441.4114	2945.554	0	1127.127	4072.681	2.650778	0	0.107201	2.757979	31.20974	20891.4
866.8714	0.037673	0	0	0.037673	0.135908	0	0	0.135908	0.811082	0	0	0.811082	0	0	0	0.811082	0.923363	0	0	0.923363	0	0	0	0.923363	4.318603	0	0	4.318603	0.074036	0	0	0.074036	0.007563	77.05878
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35397.24	4.69408	0	3.33373	8.02781	4.399236	0	0.802723	5.201959	31.43942	0	20.9019	52.34133	12.52504	6.241068	17.93465	89.04209	36.43074	0	22.37085	58.80159	12.52505	6.26795	18.0119	95.60649	780.0462	0	228.9721	1009.018	0.460558	0	0.020375	0.480933	4.60775	3623.053

79.57054	0.002474	0	0	0.002474	0.012475	0	0	0.012475	0.053267	0	0	0.053267	0	0	0	0.053267	0.060641	0	0	0.060641	0	0	0	0.060641	0.317199	0	0	0.317199	0.006858	0	0	0.006858	0.000558	7.073262
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85401.43	6.227043	0	6.476231	12.70327	9.120079	0	2.261289	11.38137	36.76093	0	38.78404	75.54496	14.04977	5.992543	24.67653	120.2638	44.20453	0	41.44428	85.64881	14.04977	6.018354	24.78282	130.4998	1035.92	0	380.9179	1416.838	1.113777	0	0.041349	1.155126	9.322537	8741.187
6.412166	0.000184	0	0	0.000184	0.001005	0	0	0.001005	0.003961	0	0	0.003961	0	0	0	0.003961	0.004509	0	0	0.004509	0	0	0	0.004509	0.021893	0	0	0.021893	0.00055	0	0	0.00055	4.06E-05	0.569997
23316.24	1.774572	0.062734	0.40694	2.244246	1.390084	0.001572	0.221956	1.613612	11.31685	0.30029	2.522668	14.13981	2.273446	0.905433	5.612979	22.93167	13.93266	0.372429	2.698822	17.00391	2.273447	0.909333	5.637156	25.82384	225.7715	2.046012	39.43448	267.252	0.313556	0.000993	0.003198	0.317747	0.9998	2386.513
5692.192	0.088855	0.001125	0	0.08998	0.887458	0.004966	0	0.892424	1.912997	0.024225	0	1.937222	0	0	0	1.937222	2.17782	0.027578	0	2.205398	0	0	0	2.205398	8.646782	0.200789	0	8.847571	0.491581	0.002747	0	0.494327	0.264	505.9959
3204.649	0.213843	0.00786	0.055453	0.277156	0.165264	0.000194	0.028462	0.19392	1.389887	0.037657	0.351565	1.77911	0.278477	0.115371	0.682176	2.855134	1.694787	0.046642	0.376562	2.117991	0.278477	0.115868	0.685114	3.197451	28.08632	0.256002	4.807374	33.1497	0.042934	0.000143	0.000452	0.043528	0.12129	328.009
1533.636	0.022184	0.000294	0	0.022478	0.238491	0.001953	0	0.240444	0.477613	0.00633	0	0.483943	0	0	0	0.483943	0.54373	0.007207	0	0.550937	0	0	0	0.550937	2.210568	0.052469	0	2.263037	0.131238	0.001072	0	0.13231	0.064816	136.3295
779.7686	1.346625	0	0.337456	1.684082	0.223368	0	0.015885	0.239253	10.63695	0	2.738366	13.37532	2.743307	3.323577	3.438564	22.88076	11.72138	0	2.958836	14.68022	2.743307	3.337893	3.453375	24.21479	116.3446	0	9.146389	125.491	0.009602	0	0.001043	0.010645	0.018916	79.81252
60217.09	4.341623	0	4.620005	8.961629	5.448973	0	1.433991	6.882964	27.28926	0	27.73199	55.02126	7.635042	3.032085	12.36855	78.05694	32.42502	0	29.64	62.06502	7.635044	3.045145	12.42183	85.16704	804.5831	0	232.2536	1036.837	0.788198	0	0.028014	0.816212	5.785565	6163.466
143.3651	0.00379	0	0	0.00379	0.022477	0	0	0.022477	0.0816	0	0	0.0816	0	0	0	0.0816	0.092896	0	0	0.092896	0	0	0	0.092896	0.448276	0	0	0.448276	0.012381	0	0	0.012381	0.000806	12.74415
4147.09	0.345709	0	0.002888	0.348597	0.241336	0	0.00052	0.241856	2.438311	0	0.021437	2.459748	2.340092	1.125154	0.017621	5.942615	2.828815	0	0.02309	2.851905	2.340093	1.13	0.017697	6.339695	81.16992	0	0.155241	81.32516	0.056586	0	1.98E-05	0.056605	0.07564	424.4717
200.9391	0.001769	0	0	0.001769	0.031503	0	0	0.031503	0.038086	0	0	0.038086	0	0	0	0.038086	0.043359	0	0	0.043359	0	0	0	0.043359	0.138521	0	0	0.138521	0.017309	0	0	0.017309	0.005138	17.86207
7054.815	0.636379	0.014528	0.244871	0.895778	0.495169	0.000364	0.036651	0.532184	4.536397	0.090878	2.03471	6.661985	0.843085	0.440637	1.831173	9.776879	5.380677	0.108374	2.19381	7.682861	0.843086	0.442535	1.83906	10.80754	113.101	1.140567	11.1924	125.434	0.093173	0.000655	0.002043	0.095871	0.136674	722.0893
13855.67	0.356136	0.028326	0	0.384462	2.102305	0.069992	0	2.172296	7.667521	0.609843	0	8.277364	0	0	0	8.277364	8.728889	0.69426	0	9.423149	0	0	0	9.423149	19.80333	3.51908	0	23.32241	1.145516	0.038132	0	1.183648	0.30397	1231.672
1295.882	0.059342	0.001807	0.019125	0.080273	0.085297	3.68E-05	0.004872	0.090206	0.37587	0.009682	0.13892	0.524471	0.062504	0.029344	0.09061	0.706929	0.455188	0.011867	0.149331	0.616386	0.062504	0.029471	0.091	0.79936	11.25534	0.065033	1.290136	12.61051	0.017382	6.4E-05	0.00016	0.017606	0.029063	132.6388
1077.417	0.036356	0.003746	0	0.040101	0.163093	0.005825	0	0.168918	0.782725	0.080645	0	0.863371	0	0	0	0.863371	0.891073	0.091809	0	0.982882	0	0	0	0.982882	2.196925	0.293696	0	2.49062	0.089182	0.003173	0	0.092355	0.01982	95.77477
236.3252	0.062685	0.008029	0.003704	0.074418	0.030104	0.000238	0.000398	0.03074	0.463865	0.050412	0.02891	0.543186	0.052007	0.027179	0.043919	0.666292	0.54076	0.060249	0.031109	0.632118	0.052007	0.027297	0.044109	0.755529	11.37659	0.335465	0.359972	12.07203	0.00305	0.000171	2.31E-05	0.003245	0.006576	24.18885
692.9595	0.022995	0.002776	0	0.025771	0.102703	0.005939	0	0.108642	0.495066	0.059776	0	0.554842	0.563594	0.068051	0	0.554842	0.563594	0.068051	0	0.631645	0	0	0	0.631645	1.205106	0.325635	0	1.530741	0.05638	0.003246	0	0.059626	0.014101	61.59924
109.0395	0.003047	0	0.000396	0.003443	0.004409	0	0.000169	0.004577	0.017047	0	0.002208	0.019254	0.001202	0.000359	0.001765	0.02258	0.021204	0	0.002357	0.023561	0.001202	0.00036	0.001772	0.026896	0.329596	0	0.043912	0.373508	0.001463	0	3.97E-06	0.001467	0.00274	11.16064
1678.352	0.007143	0	0	0.007143	0.263133	0	0	0.263133	0.15379	0	0	0.15379	0	0	0	0.15379	0.175078	0	0	0.175078	0	0	0	0.175078	1.054949	0	0	1.054949	0.1427	0	0	0.1427	0.024285	149.1937
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
752.2232	2.976873	0	0	2.976873	0.15466	0	0	0.15466	0.528744	0	0	0.528744	0	0	0	0.528744	3.592167	0	0	3.592167	0	0	0	3.592167	10.10416	0	0	10.10416	0	0	0	0	0.393796	87.69101
1068.568	0.226811	0	0	0.226811	0.148404	0	0.00185	0.150255	1.824193	0	0	1.824193	0.091356	0.057243	0.171047	2.14384	2.115962	0	0	2.115962	0.091357	0.057489	0.171784	2.436592	54.2458	0	0.439326	54.68512	0.010195	0	0.000174	0.010369	0.015008	110.6014
69188.51	1.954229	0.237375	0	2.191604	10.42051	0.425974	0	10.84648	42.07402	5.110619	0	47.18464	0	0	0	47.18464	47.89807	5.818051	0	53.71612	0	0	0	53.71612	130.5705	19.8528	0	150.4233	5.725286	0.234399	0	5.959686	1.027615	6149.852
69.67611	0.201003	0.005501	0	0.206503	0.013898	0.000418	0	0.014316	0.035681	0.000976	0	0.036658	0	0	0	0.036658	0.242518	0.006637	0	0.249155	0	0	0	0.249155	0.018453	0.021201	0	0.039654	0	0	0	0	0.013158	8.117283
195047.2	17.29677	0	18.7184	36.01517	18.87354	0	4.772853	23.6464	100.6182	0	111.9212	212.5394	55.57884	24.92729	87.7959	380.8414	121.4352	0	119.6429	241.0781	55.57886	25.03465	88.17406	409.8657	2745.934	0	1069.342	3815.276	1.818398	0	0.074286	1.892684	29.50341	20188.22
787.5572	0.032388	0	0	0.032388	0.123463	0	0	0.123463	0.697297	0	0	0.697297	0	0	0	0.697297	0.793826	0	0	0.793826	0	0	0	0.793826	3.86975	0	0	3.86975	0.067307	0	0	0.067307	0.006995	70.00239
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33065.58	4.311623	0	3.230676	7.542299	4.035508	0	0.771378	4.806887	28.7861	0	20.25756	49.04366	12.36608	6.039852	16.93363	84.38321	33.44647	0	21.67943	55.1259	12.36608	6.065867	17.00656	90.56441	721.7036	0	219.1956	940.8992	0.306966	0	0.013894	0.320859	4.309295	3422.43
73.98015	0.002254	0	0	0.002254	0.011598	0	0	0.011598	0.048518	0	0	0.048518	0	0	0	0.048518	0.055235	0	0	0.055235	0	0	0	0.055235	0.291415	0	0	0.291415	0.006372	0	0	0.006372	0.000516	6.57576
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
87907.67	5.97135	0	6.728486	12.69984	8.856087	0	2.406905	11.26299	35.05369	0	40.10136	75.15505	14.39253	6.044783	23.57468	119.167	42.30475	0	42.85021	85.15496	14.39254	6.07082	23.67622	129.2945	1031.533	0	387.7347	1419.267	0.822173	0	0.030859	0.853032	9.471239	9098.822
6.136531	0.000176	0	0	0.000176	0.000962	0	0	0.000962	0.00378	0	0	0.00378	0	0	0	0.00378	0.004303	0	0	0.004303	0	0	0	0.004303	0.021039	0	0	0.021039	0.000526	0	0	0.000526	3.9E-05	0.545448
24939.05	1.682058	0.07107	0.446941	2.200069	1.353055	0.0018	0.260755	1.615611	10.66095	0.334496	2.724098	13.71955	2.424695	0.949939	5.722345	22.81652	13.17408	0.416649	2.913901	16.50463	2.424695	0.954031	5.746992	25.63035	211.0673	2.283505	41.56147	254.9123	0.238765	0.000779	0.002457	0.242002	1.091257	2581.3
6727.198	0.105453	0.001347	0	0.1068	1.048658	0.005945	0	1.054603	2.270337	0.029002	0	2.299338	0	0	0	2.299338	2.584627	0.033017	0	2.617644	0	0	0	2.617644	10.56646	0.240382	0	10.80684	0.580511	0.003287	0	0.583798	0.312466	597.9501
3198.389	0.18859	0.008374	0.056979	0.253943	0.154153	0.000207	0.031675	0.186035	1.209654	0.039559	0.352904	1.602117	0.275266	0.111355	0.656412	2.645151	1.483553	0.04924	0.377783	1.910576	0.275266	0.111835	0.659239	2.956916	24.3425	0.269689	4.88239	29.49458	0.030603	0.000106	0.000327	0.031036	0.12399	331.047
1678.938	0.024668	0.000331	0	0.024999	0.260983	0.002219	0	0.263202	0.531084	0.007121	0	0.538204	0	0	0	0.538204	0.604603	0.008107	0	0.61271	0	0	0	0.61271	2.502051	0.059021	0	2.561071	0.14365	0.001218	0	0.144868	0.070927	149.2331
829.8153	1.43788	0	0.360546	1.798426	0.240479	0	0.017108	0.257588	11.32275	0	2.919675	14.24243	2.99294	3.599408	3.715444	24.55022	12.49667	0	3.15433	15.651	2.992941	3.614912	3.731447	25.9903	124.0517	0	9.997878	134.0496	0.00726	0	0.000792	0.008052	0.020615	85.88946
67199.34	4.343801	0	5.291907	9.635708	5.681733	0	1.676729	7.358462	26.69939	0	31.52233	58.22171	8.148305	3.18376	12.41398	81.96776	31.94453	0	33.68609	65.63063	8.148307	3.197473	12.46745	89.44386	795.276	0	253.1272	1048.403	0.629495	0	0.022589	0.652084	6.347796	6955.421
124.801	0.003289	0	0	0.003289	0.019565	0	0	0.019565	0.070814	0	0	0.070814	0	0	0	0.070814	0.080617	0	0	0.080617	0	0	0	0.080617	0.391909	0	0	0.391909	0.010773	0	0	0.010773	0.000703	11.09299
3967.001	0.311158	0	0.002775	0.313933	0.216444	0	0.000542	0.216986	2.192178	0	0.02045	2.212628	2.274554	1.07813	0.016869	5.58218	2.546065	0	0.022028	2.568093	2.274554	1.082774	0.016941	5.942362	71.99727	0	0.14779	72.14506	0.038481	0	1.35E-05	0.038495	0.075099	410.6017
240.2136	0.001953	0	0	0.001953	0.037658	0	0	0.037658	0.042051	0	0	0.042051	0	0	0	0.042051	0.047873	0	0	0.047873	0	0	0	0.047873	0.155579	0	0	0.155579	0.020673	0	0	0.020673	0.006166	21.35149
6985.856	0.601244	0.015055	0.247431	0.863729	0.492295	0.000365	0.038238	0.530899	4.227242	0.093621	2.049911	6.370774	0.837436	0.430883	1.820325	9.459418	5.040878	0.112308	2.209545	7.36273	0.837436	0.432739	1.828166	10.46107	106.5114	1.179784	11.8133	119.5044	0.065867	0.000477	0.001445	0.067789	0.139938	723.0662
13537.77	0.338177	0.030613	0	0.36879	2.039514	0.082763	0	2.122277	7.280857	0.659093	0	7.93995	0	0	0	7.93995	8.288702	0.750327	0	9.039028	0	0	0	9.039028	18.96997	3.924413	0	22.89438	1.111295	0.045072	0	1.156367	0.295667	1203.311
1294.396	0.055722	0.001876	0.019255	0.076853	0.084372	3.77E-05	0.004974	0.089384	0.343384	0.010004	0.138615	0.492003	0.059431	0.027707	0.084689	0.66383	0.418265	0.012325	0.148946	0.579537	0.059431	0.027826	0.085054	0.751848	10.74702	0.067399	1.292876	12.1073	0.012401	4.68E-05	0.000113	0.01256	0.029688	133.9755
1044.873	0.037817	0.003246	0	0.041064	0.158614	0.005187	0	0.163802	0.814195	0.069891	0	0.884086	0	0	0	0.884086	0.926899	0.079566	0	1.006465	0	0	0	1.006465	2.256271	0.259553	0	2.515824	0.086734	0.002826	0	0.08956	0.019278	92.87398
238.6172	0.064106	0.008484	0.00382	0.07641	0.030714	0.000239	0.000432	0.031386	0.472368	0.0532	0.029871	0.55544	0.052421	0.02683	0.044028	0.678718	0.55228	0.063995	0.032145	0.648421	0.052421	0.026945	0.044217	0.772005	11.44938	0.35554	0.39089	12.19581	0.002172	0.000127	1.7E-05	0.002315	0.006944	24.6979
673.6605	0.021819	0.002577	0	0.024396	0.099573	0.006035	0	0.105608	0.469751	0.055483	0	0.525234	0	0	0	0.525234	0.534776	0.063163	0	0.597939	0	0	0	0.597939	1.14872	0.310531	0	1.459251	0.054661	0.0033	0	0.057961	0.013715	59.87862
101.1465	0.002408	0	0.000415	0.002823	0.003554	0	0.000182	0.003736	0.013499	0	0.00227	0.015769	0.001235	0.000368	0.001625	0.018996	0.016859	0	0.002424	0.019282	0.001235	0.00037	0.001632	0.022519	0.255311	0	0.043107	0.298418	0.000979	0	2.79E-06	0.000981	0.002598	10.4691
1628.575	0.006845	0	0	0.006845	0.255307	0	0	0.255307	0.147378	0	0	0.147378	0	0	0	0.147378	0.167779	0	0	0.167779	0	0	0	0.167779	1.01185	0	0	1.01185	0.138825	0	0	0.138825	0.023878	144.7567
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
869.0972	3.434269	0	0	3.434269	0.178574	0	0	0.178574	0.609911	0	0	0.609911	0	0	0	0.609911	4.14402	0	0	4.14402	0	0	0	4.14402	11.6297	0	0	11.6297	0	0	0	0	0.456261	101.25
1283.159	0.20718	0	9.18E-06	0.207189	0.143186	0	0.001577	0.144763	1.527702	0	4.64E-05	1.527748	0.083848	0.050672	0.152105	1.814373	1.922389	0	5.08E-05	1.92244	0.083848	0.050672	0.152105	2.209065	48.8777	0	0.534188	49.41188	0.012348	0	0.000166	0.012514	0.019845	133.4851
73857.54	2.03281	0.247352	0	2.280162	11.10537	0.473196	0	11.57856	43.76585	5.32541	0	49.09126	0	0	0	49.09126	49.82408	6.062574	0	55.88666	0	0	0	55.88666	139.3658	21.46516	0	160.831	6.101707	0.260458	0	6.362165	1.097468	6564.937
87.32722	0.248217	0.006513	0	0.25473	0.017448	0.000495	0	0.017942	0.044063	0.001156	0	0.045219	0	0	0	0.045219	0.299485	0.007858	0	0.307343	0	0	0	0.307343	0.025226	0.025102	0	0.050328	0	0	0	0	0.016612	10.17316
193815.7	15.88408	0	18.19518	34.07926	17.15254	0	4.559583	21.71213	83.39013	0	105.8546	189.2448	54.64867	23.60918	79.11509	346.6177	113.1236	0	115.809	228.9326	54.64867	23.60918	79.11509	386.3055	2601.041	0	1036.862	3637.903	1.815542	0	0.074717	1.890259	27.51564	20162.36
719.9765	0.028417	0	0	0.028417	0.11287	0	0	0.11287	0.611811	0	0	0.611811	0	0	0	0.611811	0.696507	0	0	0.696507	0	0	0	0.696507	3.498626	0	0	3.498626	0.061569	0	0	0.061569	0.006475	63.99617
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30207.63	3.861633	0	3.022771	6.884404	3.540753	0	0.701355	4.242108	24.2083	0	18.52002	42.72832	11.86648	5.54606	15.12666	75.26751	30.29213	0	20.24454	50.53667	11.86648	5.54606	15.12666	83.07587	648.6962	0	203.4547	852.1509	0.281543	0	0.013068	0.294611	3.851451	3142.455
71.4847	0.002041	0	0	0.002041	0.011207	0	0	0.011207	0.043951	0	0	0.043951	0	0	0	0.043951	0.050035	0	0	0.050035	0	0	0	0.050035	0.269741	0	0	0.269741	0.006154	0	0	0.006154	0.000491	6.354023
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
89052.34	5.577924	0	6.635937	12.21386	8.159484	0	2.31455	10.47403	29.53645	0	38.40194	67.93839	14.26694	5.775818	21.30262	109.2838	40.0526	0	42.02687	82.07947	14.26694	5.775818	21.30262	123.4249	990.4462	0	381.6963	1372.143	0.836767	0	0.031749	0.868516	8.998372	9263.983
5.050497	0.00014	0	0	0.00014	0.000792	0	0	0.000792	0.003024	0	0	0.003024	0	0	0	0.003024	0.003443	0	0	0.003443	0	0	0	0.003443	0.017093	0	0	0.017093	0.000434	0	0	0.000434	3.23E-05	0.448921
25041.21	1.554387	0.075521	0.464007	2.093915	1.272748	0.001889	0.300433	1.57507	8.65967	0.308259	2.728038	11.69597	2.493851	0.933799	5.502244	20.62586	12.35801	0.447585	2.983434	15.78903	2.493851	0.933799	5.502244	24.71893	192.6253	2.406531	41.88581	236.9177	0.240857	0.000818	0.002549	0.244224	1.107938	2605
7424.372	0.137637	0.001553	0	0.13919	1.157055	0.006856	0	1.16391	2.963237	0.033442	0	2.996679	0	0	0	2.996679	3.373448	0.038072	0	3.41152	0	0	0	3.41152	12.16882	0.277187	0	12.44601	0.640362	0.003788	0	0.64415	0.355286	659.9262
3292.09	0.153998	0.009003	0.056474	0.219475	0.134864	0.000224	0.037452	0.172541	0.869614	0.036216	0.333314	1.239144	0.255998	0.099377	0.571216	2.165735	1.219882	0.052533	0.364342	1.636757	0.255998	0.099377	0.571216	2.563348	19.68022	0.281917	4.680295	24.64243	0.031665	0.00011	0.000332	0.032107	0.130151	342.4713
1778.951	0.028428	0.000353	0	0.02878	0.276495	0.002389	0	0.278884	0.612034	0.007593	0	0.619627	0	0	0	0.619627	0.69676	0.008644	0	0.705404	0	0	0	0.705404	2.646254	0.062934	0	2.709188	0.152195	0.001311	0	0.153506	0.07427	158.1247
856.5724	1.473589	0	0.38178	1.855369	0.247942	0	0.018432	0.266374	11.43166	0	3.070317	14.50197	3.21075	3.758037	3.874412	25.34517	12.86308	0	3.331861	16.19494	3.21075	3.758037	3.874412	27.03814	125.5316	0	10.73326	136.2648	0.007501	0	0.000853	0.008354	0.021406	89.10796
74541.68	4.232061	0	5.503829	9.73589	5.632191	0	1.709546	7.341737	23.30773	0	31.85621	55.16395	8.491469	3.1894	11.7838	78.62862	31.20001	0	34.86225	66.06227	8.491469	3.1894	11.7838	89.52694	772.0742	0	260.4218	1032.496	0.701741	0	0.025254	0.726995	6.40036	7754.461
125.6155	0.003031	0	0	0.003031	0.019693	0	0	0.019693	0.065262	0	0	0.065262	0	0	0	0.065262	0.074296	0	0	0.074296	0	0	0	0.074296	0.380604	0	0	0.380604	0.010834	0	0	0.010834	0.00071	11.16552
3795.803	0.268838	0	0.002531	0.271369	0.189743	0	0.000554	0.190297	1.769062	0	0.018189	1.787251	2.14175	0.9639	0.015281	4.908182	2.215173	0	0.019786	2.234959	2.14175	0.9639	0.015281	5.35589	61.25545	0	0.139063	61.39451	0.037007	0	1.26E-05	0.03702	0.074521	394.8717
276.8192	0.002032	0	0	0.002032	0.043397	0	0	0.043397	0.043741	0	0	0.043741	0	0	0	0.043741	0.049797	0	0	0.049797	0	0	0	0.049797	0.165485	0	0	0.165485	0.023818	0	0	0	0.023818	0.007134	24.60549
6902.285	0.52347	0.015318	0.232492	0.771281	0.448998	0.000371	0.039449	0.488818	3.329785	0.084009	1.893252	5.307046	0.768103	0.380083	1.624197	8.079428	4.410716	0.11326	2.058472	6.582448	0.768103	0.380083	1.624197	9.354831	91.42384	1.16951	11.70992	104.3033	0.065477	0.00047	0.00137	0.067317	0.143199	718.0345
14426.54	0.350061	0.030204	0	0.380265	2.172498	0.089134	0	2.261632	7.536721	0.650277	0	8.186998	0	0	0	8.186998	8.579984	0.740291	0	9.320274	0	0	0	9.320274	19.89194	3.988424	0	23.88037	1.183748	0.048545	0	1.232294	0.315785	1282.324
1366.272	0.053204	0.002098	0.019326	0.074628	0.081206	4.45E-05	0.005845	0.

231.6652	0.061703	0.008588	0.003834	0.074125	0.029722	0.000231	0.000473	0.030426	0.424026	0.04828	0.029456	0.501761	0.049059	0.023524	0.040486	0.614831	0.537342	0.065633	0.032063	0.635038	0.049059	0.023524	0.040486	0.748108	10.92055	0.358653	0.395269	11.67447	0.002116	0.000127	1.68E-05	0.002259	0.007119	24.09979
715.806	0.022898	0.00239	0	0.025288	0.106098	0.006118	0	0.112216	0.492982	0.051453	0	0.544435	0	0	0	0.544435	0.561223	0.058575	0	0.619798	0	0	0	0.619798	1.210897	0.296786	0	1.507682	0.058244	0.003345	0	0.061589	0.014649	63.62547
105.1182	0.001844	0	0.000428	0.002271	0.003081	0	0.0002	0.003281	0.00885	0	0.002199	0.011049	0.001049	0.000289	0.000996	0.013383	0.012914	0	0.002407	0.015321	0.001049	0.000289	0.000996	0.017655	0.196417	0	0.040065	0.236482	0.001022	0	2.77E-06	0.001025	0.002719	10.93529
1465.763	0.006102	0	0	0.006102	0.229786	0	0	0.229786	0.13138	0	0	0.13138	0	0	0	0.13138	0.149567	0	0	0.149567	0	0	0	0.149567	0.909912	0	0	0.909912	0.124971	0	0	0.124971	0.021733	130.2865
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
878.955	3.463575	0	0	3.463575	0.180591	0	0	0.180591	0.61549	0	0	0.61549	0	0	0	0.61549	4.179793	0	0	4.179793	0	0	0	4.179793	11.33958	0	0	11.33958	0	0	0	0	0.471765	102.3936
911.9989	0.165948	0	1.79E-05	0.165966	0.10609	0	0.001011	0.107102	1.242745	0	9.35E-05	1.242838	0.074135	0.044589	0.131651	1.493213	1.551143	0	0.000102	1.551245	0.074135	0.044589	0.131651	1.80162	40.08522	0	0.371837	40.45706	0.008771	0	0.000143	0.008913	0.013593	95.07293
76533.43	1.968352	0.210337	0	2.178689	11.54115	0.457239	0	11.99839	42.37809	4.528496	0	46.90658	0	0	0	46.90658	48.24423	5.155348	0	53.39958	0	0	0	53.39958	142.4166	19.75845	0	162.1751	6.341301	0.251909	0	6.593211	1.144284	6802.976
127.97	0.368492	0.009275	0	0.377767	0.025507	0.000705	0	0.026212	0.065414	0.001646	0	0.06706	0	0	0	0.06706	0.444602	0.01119	0	0.455792	0	0	0	0.455792	0.041804	0.035747	0	0.077551	0	0	0	0	0.02419	14.86179
190173.6	13.91024	0	16.7173	30.62754	15.17889	0	4.271291	19.45018	72.80961	0	96.71485	169.5245	49.96959	21.44043	67.41372	308.3482	98.80502	0	105.8102	204.6153	49.96959	21.44043	67.41372	343.439	2334.072	0	938.9907	3273.062	1.786851	0	0.071779	1.85863	25.06087	19824.99
620.1757	0.023451	0	0	0.023451	0.097227	0	0	0.097227	0.504885	0	0	0.504885	0	0	0	0.504885	0.574778	0	0	0.574778	0	0	0	0.574778	2.994252	0	0	2.994252	0.053073	0	0	0.053073	0.005646	55.12676
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28167.62	3.495029	0	2.850645	6.345674	3.232839	0	0.655554	3.888392	21.66725	0	17.43715	39.1044	11.41581	5.171633	14.04805	69.73989	27.28233	0	19.06315	46.34548	11.41581	5.171633	14.04805	76.98097	589.3029	0	189.7804	779.0833	0.262993	0	0.012298	0.275291	3.552965	2936.383
59.87366	0.001742	0	0	0.001742	0.009387	0	0	0.009387	0.037495	0	0	0.037495	0	0	0	0.037495	0.042685	0	0	0.042685	0	0	0	0.042685	0.226987	0	0	0.226987	0.005152	0	0	0.005152	0.000412	5.322107
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
88919.93	4.979882	0	6.236109	11.21599	7.342799	0	2.187777	9.530576	26.24266	0	35.82901	62.07167	13.18835	5.285954	18.25391	98.79988	35.60573	0	39.21178	74.81751	13.18835	5.285954	18.25391	111.5457	903.5132	0	353.0861	1256.599	0.837711	0	0.031333	0.869044	8.381653	9269.614
5.504677	0.000162	0	0	0.000162	0.000863	0	0	0.000863	0.003484	0	0	0.003484	0	0	0	0.003484	0.003966	0	0	0.003966	0	0	0	0.003966	0.018698	0	0	0.018698	0.000474	0	0	0.000474	3.52E-05	0.489305
25011.22	1.360428	0.078529	0.470247	1.909204	1.164858	0.00194	0.342021	1.508819	7.538729	0.317258	2.716208	10.5722	2.482096	0.911687	5.186699	19.15268	10.75372	0.46095	2.970765	14.18543	2.482096	0.911687	5.186699	22.76591	166.0715	2.473884	40.34586	208.8913	0.24104	0.000836	0.002567	0.244443	1.116186	2607.339
8225.353	0.17256	0.001773	0	0.174333	1.281688	0.007827	0	1.289515	3.715112	0.03818	0	3.753292	0	0	0	3.753292	4.229408	0.043465	0	4.272873	0	0	0	4.272873	13.9374	0.316451	0	14.25385	0.70907	0.004322	0	0.713391	0.403376	731.1429
3143.41	0.121567	0.008984	0.053583	0.184135	0.119093	0.00022	0.040651	0.159965	0.663499	0.035717	0.304454	1.00367	0.232982	0.086193	0.504314	1.82716	0.944449	0.051959	0.33304	1.329448	0.232982	0.086193	0.504314	2.152937	14.93788	0.278311	4.418475	19.63467	0.030297	0.000108	0.000317	0.030722	0.126204	327.6903
2186.201	0.038056	0.000411	0	0.038466	0.339922	0.002816	0	0.342738	0.819313	0.008844	0	0.828157	0	0	0	0.828157	0.932733	0.010068	0	0.942801	0	0	0	0.942801	3.116838	0.073304	0	3.190142	0.187114	0.001545	0	0.188659	0.089805	194.3291
939.0089	1.6061	0	0.402356	2.008456	0.27284	0	0.019913	0.292753	12.42666	0	3.224913	15.65157	3.455519	4.039599	4.150785	27.29747	13.98362	0	3.499808	17.48343	3.455519	4.039599	4.150785	29.12933	134.1635	0	11.49304	145.6566	0.008258	0	0.000919	0.009177	0.023753	97.88863
81102.61	4.010444	0	5.524794	9.535238	5.528915	0	1.726539	7.255454	21.67596	0	31.80787	53.48384	8.455434	3.147688	10.84824	75.9352	29.1779	0	34.81109	63.989	8.455434	3.147688	10.84824	86.44036	732.4125	0	256.7725	989.185	0.76547	0	0.027172	0.792642	6.376497	8454.684
94.02126	0.00242	0	0	0.00242	0.01474	0	0	0.01474	0.052101	0	0	0.052101	0	0	0	0.052101	0.059314	0	0	0.059314	0	0	0	0.059314	0.292626	0	0	0.292626	0.008106	0	0	0.008106	0.000528	8.35745
3656.988	0.228721	0	0.002286	0.231006	0.164495	0	0.000564	0.16506	1.500155	0	0.016164	1.516319	1.942089	0.855923	0.013724	4.328055	1.877628	0	0.017585	1.895212	1.942089	0.855923	0.013724	4.706949	51.08331	0	0.127117	51.21043	0.035729	0	1.15E-05	0.035741	0.074462	381.2292
313.5958	0.002132	0	0	0.002132	0.049163	0	0	0.049163	0.045899	0	0	0.045899	0	0	0	0.045899	0.052253	0	0	0.052253	0	0	0	0.052253	0.177685	0	0	0.177685	0.026959	0	0	0.026959	0.008112	27.8752
6253.179	0.469445	0.014319	0.218839	0.702603	0.414332	0.000335	0.037774	0.452441	2.962955	0.0788	1.781366	4.823121	0.720112	0.348521	1.508387	7.400141	3.932554	0.106595	1.937051	5.9762	0.720112	0.348521	1.508387	8.553221	80.43952	1.099918	11.49629	93.03572	0.059398	0.000441	0.001275	0.061114	0.131167	651.8736
15025.77	0.349489	0.029392	0	0.378881	2.258819	0.096819	0	2.355638	7.524394	0.632805	0	8.157199	0	0	0	8.157199	8.56595	0.7204	0	9.28635	0	0	0	9.28635	20.20986	4.03964	0	24.2495	1.230791	0.052745	0	1.283536	0.32938	1335.625
1491.239	0.050001	0.002343	0.019383	0.071727	0.078095	5.13E-05	0.006878	0.085024	0.263932	0.010366	0.132269	0.406567	0.051173	0.022286	0.067923	0.547948	0.368276	0.014833	0.144227	0.527335	0.051173	0.022286	0.067923	0.668717	8.618999	0.079374	1.519217	10.21759	0.014401	5.43E-05	0.000119	0.014574	0.035299	155.4568
1151.95	0.041177	0.002591	0	0.043768	0.175649	0.004946	0	0.180595	0.886536	0.055774	0	0.94231	0	0	0	0.94231	1.009253	0.063495	0	1.072748	0	0	0	1.072748	2.467152	0.230106	0	2.697258	0.096051	0.002694	0	0.098745	0.021472	102.3956
219.1124	0.057512	0.008279	0.003668	0.069459	0.027609	0.000217	0.000487	0.028313	0.396125	0.046013	0.028112	0.47025	0.045481	0.020834	0.036847	0.573412	0.501116	0.063049	0.030601	0.594765	0.045481	0.020834	0.036847	0.697927	10.10987	0.343751	0.374001	10.82763	0.002005	0.000121	1.58E-05	0.002141	0.007099	22.84176
743.4192	0.023323	0.002201	0	0.025524	0.110347	0.006201	0	0.116548	0.502135	0.04738	0	0.549514	0	0	0	0.549514	0.571642	0.053938	0	0.62558	0	0	0	0.62558	1.242209	0.282931	0	1.525141	0.060576	0.003392	0	0.063968	0.015277	66.08174
109.5025	0.00174	0	0.000432	0.002172	0.002924	0	0.000224	0.003148	0.00849	0	0.002213	0.010702	0.001003	0.000282	0.000889	0.012877	0.012388	0	0.002423	0.014811	0.001003	0.000282	0.000889	0.016985	0.18457	0	0.039549	0.224119	0.001067	0	2.88E-06	0.00107	0.002738	11.41528
1349.72	0.005432	0	0	0.005432	0.2116	0	0	0.2116	0.116943	0	0	0.116943	0	0	0	0.116943	0.13313	0	0	0.13313	0	0	0	0.13313	0.821833	0	0	0.821833	0.115438	0	0	0.115438	0.020485	119.9752
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1090.032	4.446828	0	0	4.446828	0.223268	0	0	0.223268	0.790179	0	0	0.790179	0	0	0	0.790179	5.366325	0	0	5.366325	0	0	0	5.366325	13.50714	0	0	13.50714	0	0	0	0	0.57825	126.5909
868.924	0.147731	0	1.65E-05	0.147747	0.09463	0	0.000898	0.095528	1.101042	0	8.66E-05	1.101129	0.070443	0.042069	0.123278	1.336919	1.374708	0	9.48E-05	1.374802	0.070443	0.042069	0.123278	1.610593	36.58799	0	0.363327	36.95132	0.008318	0	0.000136	0.008454	0.013066	90.17748
76853.44	1.948454	0.2194	0	2.167855	11.55225	0.501374	0	12.05363	41.94969	4.723631	0	46.67332	0	0	0	46.67332	47.75653	5.377495	0	53.13402	0	0	0	53.13402	144.5227	21.10492	0	165.6276	6.34756	0.276264	0	6.623824	1.158697	6834.294
178.3707	0.516495	0.014514	0	0.531009	0.035448	0.001099	0	0.036547	0.090957	0.002473	0	0.093431	0	0	0	0.093431	0.622343	0.017394	0	0.639737	0	0	0	0.639737	0.07787	0.055767	0	0.133637	0	0	0	0	0.033866	20.72193
187859.2	12.36943	0	15.80006	28.16949	13.52385	0	4.085712	17.60956	64.79076	0	91.26786	156.0586	48.00485	20.32693	60.4055	284.7959	87.96586	0	99.85111	187.817	48.00485	20.32693	60.4055	316.5542	2114.183	0	878.249	2992.432	1.756858	0	0.070942	1.827801	22.91154	19496.15
554.7271	0.020001	0	0	0.020001	0.087003	0	0	0.087003	0.430614	0	0	0.430614	0	0	0	0.430614	0.490226	0	0	0.490226	0	0	0	0.490226	2.647281	0	0	2.647281	0.047517	0	0	0.047517	0.005118	49.32984
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26494.68	3.163864	0	2.72521	5.889075	2.935148	0	0.621721	3.556869	19.48512	0	16.68771	36.17283	11.39441	4.970932	13.39738	65.93555	24.65489	0	18.24549	42.90037	11.39441	4.970932	13.39738	72.6631	534.746	0	179.998	714.744	0.245974	0	0.011809	0.257783	3.252666	2749.635
54.96163	0.001566	0	0	0.001566	0.00862	0	0	0.00862	0.033716	0	0	0.033716	0	0	0	0.033716	0.038383	0	0	0.038383	0	0	0	0.038383	0.205392	0	0	0.205392	0.004728	0	0	0.004728	0.000376	4.887535
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86543.53	4.470793	0	5.955166	10.42596	6.60603	0	2.089365	8.695396	23.53447	0	34.14726	57.68173	12.65658	5.003034	16.3346	91.67594	31.95984	0	37.37183	69.33168	12.65658	5.003034	16.3346	103.3259	823.5217	0	332.9934	1156.515	0.811097	0	0.03094	0.842037	7.708719	8981.543
5.12421	0.000146	0	0	0.000146	0.000804	0	0	0.000804	0.003149	0	0	0.003149	0	0	0	0.003149	0.003585	0	0	0.003585	0	0	0	0.003585	0.017246	0	0	0.017246	0.000442	0	0	0.000442	3.31E-05	0.455677
25703.49	1.181015	0.083351	0.476375	1.74074	1.05943	0.002042	0.395111	1.456583	6.499328	0.332508	2.710887	9.542723	2.469781	0.88789	4.932001	17.8324	9.270143	0.483414	2.965216	12.71877	2.469781	0.88789	4.932001	21.00845	142.217	2.590129	39.49365	184.3007	0.246575	0.000871	0.002639	0.250085	1.150694	2667.525
8610.277	0.197655	0.001953	0	0.199608	1.341808	0.00862	0	1.350429	4.255391	0.042049	0	4.29744	0	0	0	4.29744	4.84448	0.04787	0	4.89235	0	0	0	4.89235	15.03562	0.348524	0	15.38415	0.742205	0.004758	0	0.746963	0.429436	765.6803
3256.273	0.1053	0.009662	0.054122	0.169083	0.111046	0.000235	0.047291	0.158571	0.559346	0.037978	0.300126	0.89745	0.233955	0.08245	0.486905	1.700759	0.805881	0.055342	0.328461	1.189685	0.233955	0.08245	0.486905	1.992994	12.5056	0.295996	4.458069	17.25966	0.031238	0.000114	0.00033	0.031682	0.131115	337.9381
2576.868	0.047758	0.000484	0	0.048242	0.400813	0.003341	0	0.404154	1.028205	0.010421	0	1.038627	0	0	0	1.038627	1.170543	0.011864	0	1.182407	0	0	0	1.182407	3.596076	0.086377	0	3.682452	0.220604	0.001833	0	0.222437	0.104764	229.1514
1041.479	1.758696	0	0.438523	2.197219	0.30068	0	0.022163	0.322843	13.59023	0	3.508462	17.09869	3.843161	4.479106	4.591771	30.01273	15.29242	0	3.807663	19.10008	3.843161	4.479106	4.591771	32.01412	144.7383	0	12.68736	157.4257	0.009112	0	0.001021	0.010133	0.026353	108.0854
85283.96	3.691357	0	5.431838	9.123196	5.177907	0	1.704278	6.882185	19.77361	0	31.25289	51.02651	8.433366	3.108989	10.04836	72.61722	26.7174	0	34.2048	60.9222	8.433366	3.108989	10.04836	82.51291	675.5283	0	248.9825	924.5109	0.801008	0	0.028773	0.829781	6.163003	8850.824
80.5883	0.002047	0	0	0.002047	0.012639	0	0	0.012639	0.04407	0	0	0.04407	0	0	0	0.04407	0.05017	0	0	0.05017	0	0	0	0.05017	0.250191	0	0	0.250191	0.006946	0	0	0.006946	0.000453	7.166421
3473.533	0.19292	0	0.002077	0.194997	0.141442	0	0.00057	0.142012	1.259066	0	0.014454	1.273519	1.772486	0.768465	0.012423	3.826893	1.577493	0	0.015726	1.593219	1.772486	0.768465	0.012423	4.146592	42.28307	0	0.117767	42.40084	0.033786	0	1.07E-05	0.033796	0.072195	360.4855
348.4842	0.002222	0	0	0.002222	0.054656	0	0	0.054656	0.047849	0	0	0.047849	0	0	0	0.047849	0.054473	0	0	0.054473	0	0	0	0.054473	0.189216	0	0	0.189216	0.029951	0	0	0.029951	0.009044	30.98942
5962.305	0.414091	0.014146	0.207656	0.635892	0.373713	0.000329	0.038201	0.412243	2.59833	0.076664	1.68485	4.359845	0.677879	0.322014	1.409275	6.769013	3.45547	0.10427	1.83236	5.392099	0.677879	0.322014	1.409275	7.801267	70.02071	1.073961	11.38263	82.4773	0.056369	0.000429	0.001212	0.058011	0.126323	618.7718
15103.53	0.342709	0.029889	0	0.372597	2.263038	0.105787	0	2.368825	7.378428	0.643491	0	8.02192	0	0	0	8.02192	8.399779	0.732566	0	9.132345	0	0	0	9.132345	20.10475	4.204573	0	24.30932	1.233086	0.057641	0	1.290727	0.331868	1343.101
1760	0.048023	0.00289	0.020544	0.071457	0.075349	6.69E-05	0.00893	0.084346	0.249842	0.012266	0.135837	0.397945	0.0503	0.021224	0.064823	0.534292	0.349954	0.017634	0.148176	0.515764	0.0503	0.021224	0.064823	0.652111	7.886201	0.094136	1.712269	9.692606	0.016927	6.39E-05	0.000133	0.017124	0.041826	182.6539
1157.445	0.040364	0.002703	0	0.043067	0.175943	0.00559	0	0.181533	0.869027	0.058184	0	0.927211	0	0	0	0.927211	0.989321	0.066238	0	1.055559	0	0	0	1.055559	2.429249	0.252034	0	2.681283	0.09621	0.003045	0	0.099256	0.02156	102.9273
218.6499	0.056513	0.008494	0.003802	0.068809	0.026873	0.000219	0.000536	0.027628	0.390935	0.04664	0.029043	0.466618	0.044823	0.019536	0.036243	0.56722	0.493886	0.064412	0.031616	0.589914	0.044823	0.019536	0.036243	0.690516	9.88044	0.350644	0.371287	10.60237	0.001989	0.000123	1.58E-05	0.002127	0.007192	22.69163
748.4922	0.025629	0.002448	0	0.028077	0.110969	0.006423	0	0.117393	0.551784	0.052701	0	0.604486	0	0	0	0.604486	0.628165	0.059996	0	0.688161	0	0	0	0.688161	1.361457	0.308714	0	1.670171	0.060917	0.003526	0	0.064442	0.015366	66.56066
107.6672	0.002142	0	0.000462	0.002604	0.003307	0	0.000261	0.003567	0.010786	0	0.002376	0.013162	0.001219	0.000357	0.001105	0.015844	0.015739	0	0.002601	0.01834	0.001219	0.000357	0.001105	0.021022	0.25341	0	0.043851	0.29726	0.001044	0	3.12E-06	0.001048	0.003092	11.17377
1279.729	0.005369	0	0	0.005369	0.200712	0	0	0.200712	0.115594	0	0	0.115594	0	0	0	0.115594	0.131596	0	0	0.131596	0	0	0	0.131596	0.783374	0	0	0.783374	0.109577	0	0	0.109577	0.020326	113.8016
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1192.843	5.145081	0	0	5.145081	0.244407	0	0	0.244407	0.914214	0	0	0.914214	0	0	0	0.914214	6.208916	0	0	6.208916	0	0	0	6.208916	13.1938	0	0	13.1938	0	0	0	0	0.637359	138.5766
826.8899	0.128403	0	1.92E-05	0.128422	0.083214	0	0.00075	0.083964	0.952481	0	0.000101	0.952582	0.062714	0.037262	0.108891	1.161449	1.190306	0	0.00011	1.190417	0.062714	0.037262	0.108891	1.399284	32.51433	0	0.354574	32.86891	0.007881	0	0.000124	0.008004	0.012635	85.37525
79328.1	1.963859	0.211459	0	2.175318	11.93358	0.507359	0	12.44093	42.28135	4.552645	0	46.83399	0	0	0	46.83399	48.13409	5.18284	0	53.31693	0	0	0	53.31693	146.8804	20.56648	0	167.4468	6.717255	0.030494	0	0.747749	1.245146	7053.893
202.657	0.579029	0.018228	0	0.597257	0.039904	0.001357	0	0.041261	0.0917	0.002558	0	0.094258	0	0	0	0.094258	0.685992	0.021221	0	0.707212	0	0	0	0.707212	0.357824	0.068278	0	0.426102	0	0	0	0	0.042641	23.39447
186304.5	10.92602	0	14.73944	25.66546	12.01481	0	3.886349	15.90116	57.07872	0	84.75228	141.831	45.2483	18.85798	53.16043	259.0977	77.61108	0	92.72454	170.3356	45.2483	18.85798	53.16043	287.6023	1900.22	0	808.9168	2709.136	1.733965	0	0.069416	1.803381	21.03624	19235.68
503.4225	0.017238	0	0	0.017238	0.078951	0	0	0.078951	0.371125	0	0	0.371125	0	0	0	0.371125	0.422501	0	0	0.422501	0	0	0	0.422501	2.370272	0	0	2.370272	0.004748	0	0	0.004748	0.004709	44.76457
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24936.75	2.820894	0	2.537956	5.35885	2.618552	0	0.578293	3.196845	17.26489	0	15.52498	32.78987	10.97295	4.62892	12.34034	60.73208	21.93894	0	16.97559	38.91454	10.97295	4.62892	12.34034	66.85674	477.0661	0	165.6787	642.7447	0.230258	0	0.011123	0.241382	2.951546	2574.685
50.88384	0.001394	0	0	0.001394	0.00798	0	0	0.00798	0.030009	0	0	0.030009	0	0	0	0.030009	0.034164	0	0	0.034164	0	0	0	0.034164	0.184951	0	0	0.184951	0.00048	0	0	0.00048	0.000344	4.524616
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86094.75	4.027842	0	5.658777	9.686619	5.965592	0	1.9941	7.959692	21.1439	0	32.30419	53.44809	12.12933	4.729617	14.56059	84.86762	28.7515	0	35.35536	64.10685	12.12933	4.729617	14.56059	95.52638	751.8693	0	311.7414	1063.611	0.802674	0	0.030702	0.833376	7.186272	8889.164
5.12796	0.000147	0	0	0.000147	0.000804	0	0

25166.42	1.022645	0.084653	0.471035	1.578334	0.957987	0.002052	0.423923	1.383962	5.594257	0.3355	2.649427	8.579184	2.387681	0.845815	4.584701	16.39738	7.982186	0.488036	2.898277	11.3685	2.387681	0.845815	4.584701	19.18669	121.9032	2.611566	37.69415	162.2089	0.240109	0.000875	0.002621	0.243605	1.126197	2598.398
8697.933	0.202732	0.002043	0	0.204775	1.355069	0.009018	0	1.364087	4.364707	0.043987	0	4.408694	0	0	0	4.408694	4.968928	0.050077	0	5.019005	0	0	0	5.019005	15.03645	0.364591	0	15.40104	0.081498	0.000542	0	0.08204	0.44507	773.4245
3020.52	0.074446	0.009306	0.04949	0.133241	0.08999	0.000224	0.048578	0.138792	0.386501	0.036173	0.267784	0.690457	0.200492	0.070631	0.397764	1.359344	0.555407	0.052719	0.29307	0.901196	0.200492	0.070631	0.397764	1.570083	8.47514	0.281451	3.818108	12.5747	0.028823	0.000108	0.000307	0.029238	0.121405	311.8645
2709.205	0.050201	0.000521	0	0.050722	0.421268	0.003614	0	0.424881	1.080797	0.011225	0	1.092023	0	0	0	1.092023	1.230416	0.012779	0	1.243195	0	0	0	1.243195	3.65964	0.09304	0	3.75268	0.025336	0.000217	0	0.025554	0.113432	240.9038
1101.563	1.838539	0	0.459968	2.298507	0.315607	0	0.02364	0.339247	14.19812	0	3.674057	17.87218	4.079804	4.762876	4.868634	31.5835	15.97621	0	3.9875	19.96371	4.079804	4.762876	4.868634	33.67502	149.8167	0	13.45089	163.2676	0.009575	0	0.001088	0.010663	0.030096	113.7349
87035.98	3.386998	0	5.292248	8.679245	4.827581	0	1.673897	6.501478	17.96386	0	30.36629	48.33015	8.307977	3.039974	9.209752	68.88785	24.37433	0	33.23557	57.6099	8.307977	3.039974	9.209752	78.1676	621.7285	0	238.2981	860.0266	0.813036	0	0.029451	0.842487	5.884442	8986.345
71.95807	0.001756	0	0	0.001756	0.011285	0	0	0.011285	0.03781	0	0	0.03781	0	0	0	0.03781	0.043044	0	0	0.043044	0	0	0	0.043044	0.219537	0	0	0.219537	0.000679	0	0	0.000679	0.000405	6.398547
3301.449	0.163255	0	0.001872	0.165127	0.122615	0	0.000566	0.123181	1.058563	0	0.012798	1.071361	1.614996	0.685573	0.011206	3.383135	1.328551	0	0.013927	1.342477	1.614996	0.685573	0.011206	3.654251	35.10745	0	0.108821	35.21628	0.031947	0	9.81E-06	0.031957	0.069717	340.8701
376.0182	0.002272	0	0	0.002272	0.058971	0	0	0.058971	0.048909	0	0	0.048909	0	0	0	0.048909	0.05568	0	0	0.05568	0	0	0	0.05568	0.194542	0	0	0.194542	0.003547	0	0	0.003547	0.010179	33.43573
6030.555	0.372415	0.014376	0.197378	0.584169	0.354435	0.000327	0.039286	0.394047	2.305277	0.075985	1.583297	3.964559	0.616417	0.287532	1.268767	6.137275	3.074436	0.104228	1.722315	4.900979	0.616417	0.287532	1.268767	7.073695	61.83525	1.069744	11.49212	74.39711	0.056795	0.000425	0.001154	0.058374	0.129735	622.6465
15619.47	0.343032	0.028749	0	0.371781	2.339154	0.11043	0	2.449584	7.385386	0.618965	0	8.004351	0	0	0	8.004351	8.407699	0.704645	0	9.112344	0	0	0	9.112344	20.31852	4.138477	0	24.45699	0.140592	0.006637	0	0.14723	0.354302	1388.891
1812.82	0.04447	0.003052	0.020343	0.067865	0.069691	7.19E-05	0.009705	0.079468	0.229279	0.012744	0.131902	0.373926	0.046789	0.01947	0.05861	0.498796	0.322195	0.018366	0.143925	0.484486	0.046789	0.01947	0.05861	0.609356	6.972401	0.097924	1.74898	8.819305	0.017348	6.62E-05	0.000134	0.017548	0.042991	187.1712
1196.296	0.041883	0.002679	0	0.044562	0.181891	0.005723	0	0.187614	0.901721	0.057679	0	0.9594	0	0	0	0.9594	1.026541	0.065663	0	1.092204	0	0	0	1.092204	2.531155	0.251921	0	2.783076	0.010932	0.000344	0	0.011276	0.022747	106.3752
0.023966	1.2E-05	4.12E-06	0	1.61E-05	4.67E-06	2.13E-07	0	4.88E-06	1.71E-07	5.88E-08	0	2.3E-07	0	0	0	2.3E-07	1.22E-05	4.2E-06	0	1.64E-05	0	0	0	1.64E-05	6.74E-05	4.19E-06	0	7.16E-05	0	0	0	0	2.68E-05	0.002767
209.5807	0.052752	0.008325	0.003653	0.06473	0.025023	0.000213	0.000547	0.025783	0.365328	0.045228	0.027818	0.438375	0.042259	0.017719	0.033818	0.53217	0.461426	0.06283	0.030283	0.554539	0.042259	0.017719	0.033818	0.648335	9.121512	0.341429	0.352142	9.815083	0.001894	0.000119	1.5E-05	0.002029	0.007035	21.63892
770.8943	0.025438	0.002319	0	0.027757	0.114145	0.006753	0	0.120898	0.547673	0.049923	0	0.597596	0	0	0	0.597596	0.623484	0.056833	0	0.680318	0	0	0	0.680318	1.357859	0.303783	0	1.661641	0.006861	0.000406	0	0.007266	0.016068	68.5483
1.762877	0.004327	0.001004	0	0.005331	0.000307	5.19E-05	0	0.000359	6.18E-05	1.43E-05	0	7.62E-05	0	0	0	7.62E-05	0.004416	0.001025	0	0.005441	0	0	0	0.005441	0.015625	0.001022	0	0.016647	0	0	0	0	0.000924	0.203504
123.4278	0.001266	0	0.000457	0.001723	0.002407	0	0.000309	0.002715	0.006014	0	0.002268	0.008281	0.00105	0.000296	0.000811	0.010439	0.008775	0	0.002483	0.011258	0.00105	0.000296	0.000811	0.013416	0.130803	0	0.040516	0.171319	0.001192	0	3.22E-06	0.001195	0.00363	12.74375
1238.477	0.005138	0	0	0.005138	0.194229	0	0	0.194229	0.110613	0	0	0.110613	0	0	0	0.110613	0.125924	0	0	0.125924	0	0	0	0.125924	0.752429	0	0	0.752429	0.011681	0	0	0.011681	0.019716	110.126
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1276.737	5.67346	0	0	5.67346	0.259942	0	0	0.259942	1.008151	0	0	1.008151	0	0	0	1.008151	6.846597	0	0	6.846597	0	0	0	6.846597	12.95875	0	0	12.95875	0	0	0	0	0.679749	147.3849
783.9499	0.114159	0	1.38E-05	0.114173	0.076734	0	0.000703	0.077437	0.84331	0	7.26E-05	0.843382	0.047653	0.034492	0.103589	1.029117	1.055219	0	7.95E-05	1.055299	0.047653	0.034492	0.103589	1.241034	29.89783	0	0.35674	30.25457	0.007527	0	0.000116	0.007643	0.012232	81.52195
71544.16	1.779507	0.114848	0	1.894355	10.9765	0.242423	0	11.21892	38.3123	2.472643	0	40.78494	0	0	0	40.78494	43.61563	2.814916	0	46.43055	0	0	0	46.43055	134.961	6.580523	0	141.5415	0.659731	0.014571	0	0.674302	1.16937	6361.024
222.2693	0.604933	0.027022	0	0.631955	0.043422	0.001904	0	0.045327	0.083519	0.002716	0	0.086235	0	0	0	0.086235	0.702686	0.030232	0	0.732919	0	0	0	0.732919	0.741087	0.089739	0	0.830826	0	0	0	0	0.056971	25.69973
177132.9	9.483636	0	13.61224	23.09588	10.49743	0	3.655887	14.15332	49.43581	0	77.99919	127.435	40.35755	17.33859	46.62521	231.7564	67.33325	0	85.33827	152.6715	40.35755	17.33859	46.62521	256.9929	1675.711	0	738.3563	2414.067	1.659973	0	0.066919	1.726893	18.95312	18419.82
445.7119	0.014509	0	0	0.014509	0.069893	0	0	0.069893	0.312361	0	0	0.312361	0	0	0	0.312361	0.355602	0	0	0.355602	0	0	0	0.355602	2.067781	0	0	2.067781	0.004204	0	0	0.004204	0.004221	39.62844
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23815.74	2.444547	0	2.328602	4.773149	2.264717	0	0.537607	2.802325	14.90559	0	14.19145	29.09705	9.699078	4.224819	11.02918	54.05013	18.99247	0	15.51846	34.51093	9.699078	4.224819	11.02918	59.46402	414.0334	0	149.5695	563.6029	0.221576	0	0.010607	0.232183	2.662959	2476.568
46.72106	0.001241	0	0	0.001241	0.007326	0	0	0.007326	0.026722	0	0	0.026722	0	0	0	0.026722	0.030421	0	0	0.030421	0	0	0	0.030421	0.165426	0	0	0.165426	0.000441	0	0	0.000441	0.000314	4.153991
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81650.98	3.618058	0	5.348459	8.966517	5.339973	0	1.883983	7.223957	19.00483	0	30.50048	49.50531	11.41639	4.556482	13.28465	78.76283	25.86494	0	33.38169	59.24663	11.41639	4.556482	13.28465	88.50415	681.0214	0	291.2238	972.2452	0.766106	0	0.029921	0.796027	6.56258	8490.782
5.138033	0.000136	0	0	0.000136	0.000806	0	0	0.000806	0.002934	0	0	0.002934	0	0	0	0.002934	0.00334	0	0	0.00334	0	0	0	0.00334	0.016738	0	0	0.016738	4.85E-05	0	0	4.85E-05	3.4E-05	0.456825
22893.33	0.845711	0.082154	0.452557	1.380422	0.829633	0.001974	0.428424	1.26003	4.597927	0.325196	2.518827	7.44195	2.198923	0.782019	4.157134	14.58003	6.562116	0.473261	2.755661	9.791038	2.198923	0.782019	4.157134	16.92911	100.0052	2.529927	35.05648	137.5916	0.21984	0.000845	0.002506	0.22319	1.039209	2380.648
8529.945	0.201528	0.002093	0	0.203621	1.328353	0.009237	0	1.337591	4.338775	0.045059	0	4.383834	0	0	0	4.383834	4.939407	0.051297	0	4.990703	0	0	0	4.990703	14.68558	0.373474	0	15.05905	0.079891	0.000556	0	0.080446	0.448613	758.4013
3143.017	0.079336	0.010202	0.054234	0.143772	0.092234	0.000244	0.05496	0.147438	0.415035	0.039739	0.294553	0.749327	0.227808	0.078659	0.434562	1.490356	0.598319	0.057931	0.322393	0.978644	0.227808	0.078659	0.434562	1.719673	9.231893	0.309188	4.20546	13.74654	0.030186	0.000118	0.000338	0.030642	0.128418	326.8384
2846.892	0.052191	0.00056	0	0.052751	0.442524	0.003901	0	0.446424	1.123633	0.012065	0	1.135698	0	0	0	1.135698	1.279181	0.013736	0	1.292917	0	0	0	1.292917	3.695947	0.100004	0	3.795951	0.026615	0.000235	0	0.026849	0.122409	253.1185
1111.102	1.692962	0	0.464724	2.157686	0.298477	0	0.023906	0.322382	12.97324	0	3.700651	16.67389	4.399777	5.141415	5.247935	31.46302	14.64172	0	4.016683	18.6584	4.399777	5.141415	5.247935	33.44753	136.8097	0	13.89193	150.7017	0.009722	0	0.00111	0.010832	0.033404	115.5421
84049.71	3.066941	0	5.124027	8.190968	4.441439	0	1.627281	6.06872	16.08647	0	29.39489	45.48136	7.933717	2.963972	8.56999	64.94904	21.95635	0	32.17372	54.13007	7.933717	2.963972	8.56999	73.59775	562.6543	0	226.7776	789.4319	0.79005	0	0.029363	0.819412	5.491452	8740.223
64.37419	0.00147	0	0	0.00147	0.010095	0	0	0.010095	0.031649	0	0	0.031649	0	0	0	0.031649	0.03603	0	0	0.03603	0	0	0	0.03603	0.187135	0	0	0.187135	0.000607	0	0	0.000607	0.000364	5.723539
2953.829	0.134399	0	0.001649	0.136048	0.103102	0	0.00054	0.103642	0.866205	0	0.011097	0.877302	1.336564	0.60028	0.009899	2.824044	1.088948	0	0.012077	1.101025	1.336564	0.60028	0.009899	3.047767	28.39512	0	0.09806	28.49318	0.028788	0	8.8E-06	0.028797	0.063767	307.1649
369.4161	0.002176	0	0	0.002176	0.057929	0	0	0.057929	0.04684	0	0	0.04684	0	0	0	0.04684	0.053324	0	0	0.053324	0	0	0	0.053324	0.186535	0	0	0.186535	0.003484	0	0	0.003484	0.010322	32.84495
5559.42	0.315428	0.013881	0.182289	0.511598	0.299429	0.000318	0.038735	0.338481	1.963152	0.071912	1.459767	3.494831	0.493903	0.259645	1.156346	5.404725	2.611093	0.099014	1.58798	4.298086	0.493903	0.259645	1.156346	6.20798	52.11992	1.014668	10.81174	63.94633	0.052727	0.000402	0.001071	0.0542	0.121635	578.1171
14488.18	0.305291	0.027455	0	0.332746	2.156721	0.115187	0	2.271908	6.572833	0.591103	0	7.163936	0	0	0	7.163936	7.48267	0.672926	0	8.155596	0	0	0	8.155596	18.22286	4.031835	0	22.25469	0.129627	0.006923	0	0.136551	0.334307	1288.151
0.903231	0.000412	0.000684	0	0.001096	0.000149	3.54E-05	0	0.000184	5.88E-06	9.78E-06	0	1.57E-05	0	0	0	1.57E-05	0.00042	0.000698	0	0.001118	0	0	0	0.001118	0.002141	0.000696	0	0.002837	0	0	0	0	0.000809	0.104435
1863.208	0.041052	0.003303	0.020444	0.064799	0.064283	7.95E-05	0.010587	0.07495	0.210531	0.013551	0.130406	0.354488	0.041394	0.018311	0.055004	0.469197	0.296486	0.01957	0.142325	0.458382	0.041394	0.018311	0.055004	0.57309	6.184582	0.104239	1.823242	8.112063	0.017956	7.03E-05	0.000138	0.018165	0.044648	193.7526
1099.028	0.037689	0.002232	0	0.039921	0.167203	0.005137	0	0.17234	0.811425	0.048056	0	0.859481	0	0	0	0.859481	0.923746	0.054708	0	0.978453	0	0	0	0.978453	2.301901	0.21055	0	2.512451	0.01005	0.000309	0	0.010358	0.021476	97.71511
2.142041	0.001156	0.00017	0	0.001326	0.000428	8.79E-06	0	0.000437	1.65E-05	2.43E-06	0	1.89E-05	0	0	0	1.89E-05	0.001179	0.000174	0	0.001353	0	0	0	0.001353	0.006136	0.000173	0	0.006309	0	0	0	0	0.002381	0.247672
210.3619	0.049568	0.008862	0.003648	0.062078	0.023598	0.000236	0.000614	0.024448	0.344048	0.047199	0.027613	0.41886	0.036836	0.01687	0.03246	0.505026	0.433861	0.065887	0.030063	0.529811	0.036836	0.01687	0.03246	0.615977	8.529338	0.357116	0.346444	9.232897	0.001912	0.000124	1.51E-05	0.002051	0.007339	21.87527
710.7446	0.022675	0.002277	0	0.024952	0.104315	0.007138	0	0.111453	0.488192	0.049028	0	0.537219	0	0	0	0.537219	0.555769	0.055814	0	0.611583	0	0	0	0.611583	1.21696	0.30265	0	1.51961	0.00627	0.000429	0	0.006699	0.014909	63.19263
7.787395	0.019769	0.003436	0	0.023205	0.001411	0.000178	0	0.001588	0.000282	4.91E-05	0	0.000332	0	0	0	0.000332	0.020175	0.003507	0	0.023683	0	0	0	0.023683	0.071055	0.003498	0	0.074552	0	0	0	0	0.004439	0.900412
194.0082	0.002337	0	0.00069	0.003027	0.004191	0	0.000485	0.004676	0.011237	0	0.003292	0.014529	0.00147	0.000417	0.001093	0.017509	0.016397	0	0.003604	0.020001	0.00147	0.000417	0.001093	0.022981	0.253802	0	0.055577	0.30938	0.001886	0	5.08E-06	0.001891	0.005669	20.17466
1132.904	0.004649	0	0	0.004649	0.177652	0	0	0.177652	0.100088	0	0	0.100088	0	0	0	0.100088	0.113943	0	0	0.113943	0	0	0	0.113943	0.670043	0	0	0.670043	0.010684	0	0	0.010684	0.018405	100.727
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1314.421	5.650769	0	0	5.650769	0.268045	0	0	0.268045	0.997242	0	0	0.997242	0	0	0	0.997242	6.811367	0	0	6.811367	0	0	0	6.811367	13.1707	0	0	13.1707	0	0	0	0	0.697479	151.979
736.8576	0.104612	0	6.96E-06	0.104619	0.070397	0	0.000602	0.070999	0.77012	0	3.68E-05	0.770157	0.044703	0.031911	0.096976	0.943746	0.964181	0	4.03E-05	0.964221	0.044703	0.031911	0.096976	1.13781	27.60861	0	0.332645	27.94126	0.007077	0	0.000109	0.007186	0.011355	76.65372
64892.17	1.575123	0.104564	0	1.679687	9.930285	0.244434	0	10.17472	33.91196	2.251237	0	36.16319	0	0	0	36.16319	38.60618	2.562862	0	41.16904	0	0	0	41.16904	120.4735	6.103211	0	126.5767	0.596849	0.014691	0	0.611541	1.078717	5768.971
261.8219	0.680522	0.040456	0	0.720978	0.050668	0.002758	0	0.053427	0.075323	0.002877	0	0.0782	0	0	0	0.0782	0.769262	0.043908	0	0.81317	0	0	0	0.81317	1.373651	0.125127	0	1.498778	0	0	0	0	0.079812	30.29244
176863.7	8.794547	0	12.94334	21.73789	9.792164	0	3.517898	13.31006	45.56585	0	73.85338	119.4192	39.16996	16.51818	42.8534	217.9608	62.26081	0	80.80572	143.0665	39.16996	16.51818	42.8534	241.6081	1567.856	0	692.5568	2260.413	1.658954	0	0.065963	1.724917	17.98385	18398.75
468.4362	0.013056	0	0	0.013056	0.073448	0	0	0.073448	0.281096	0	0	0.281096	0	0	0	0.281096	0.320009	0	0	0.320009	0	0	0	0.320009	1.924332	0	0	1.924332	0.004417	0	0	0.004417	0.004586	41.64439
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23111.37	2.17481	0	2.142141	4.316951	2.04155	0	0.499584	2.541134	13.06921	0	12.97679	26.04599	9.187743	3.831709	10.01316	49.07861	16.77831	0	14.19201	30.97032	9.187743	3.831709	10.01316	54.00293	370.0119	0	135.5681	505.58	0.215341	0	0.01006	0.225401	2.472387	2404.227
45.1035	0.001127	0	0	0.001127	0.007072	0	0	0.007072	0.024262	0	0	0.024262	0	0	0	0.024262	0.02762	0	0	0.02762	0	0	0	0.02762	0.151309	0	0	0.151309	0.000425	0	0	0.000425	0.000301	4.009741
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81056.9	3.421856	0	5.144959	8.566815	5.049739	0	1.809598	6.859337	17.90397	0	29.26212	47.16609	11.2785	4.457428	12.39261	75.29463	24.42281	0	32.02698	56.44979	11.2785	4.457428	12.39261	84.57834	646.5377	0	276.0165	922.5542	0.760977	0	0.029556	0.790532	6.259411	8432.176
5.933633	0.000142	0	0	0.000142	0.00093	0	0	0.00093	0.003049	0	0	0.003049	0	0	0	0.003049	0.003471	0	0	0.003471	0	0	0	0.003471	0.018325	0	0	0.018325	5.6E-05	0	0	5.6E-05	4.01E-05	0.527505
21077.06	0.725924	0.077205	0.42929	1.232419	0.741008	0.001837	0.414206	1.157051	3.927213	0.306052	2.371701	6.604965	2.099499	0.734564	3.81703	13.25606	5.605846	0.445553	2.594883	8.646283	2.099499	0.734564	3.81703	15.29738	85.35791	2.38031	32.02985	119.7681	0.202391	0.000803	0.002366	0.205561	0.946879	2192.602
8087.38	0.197952	0.00205	0	0.200002	1.259008	0.009047	0	1.268055	4.261792	0.044131	0	4.305923	0	0	0	4.305923	4.851767	0.050241	0	4.902007	0	0	0	4.902007	14.34287	0.365785	0	14.70866	0.07572	0.000544	0	0.076264	0.423404	718.9752
2925.965	0.067859	0.009675	0.051418	0.128951	0.082155	0.00023	0.053898	0.136283	0.35273	0.037679	0.276995	0.667403	0.217159	0.074519	0.396493	1.355575	0.508697	0.054934	0.303188	0.866819	0.217159	0.074519	0.396493	1.55499	7.867996	0.293004	3.871044	12.03204	0.028101	0.000113	0.000322	0.028536	0.118763	304.3819
2687.985	0.050945	0.000545	0	0.05149	0.417655	0.003806	0	0.421461	1.096812	0.011741	0	1.108552	0	0	0	1.108552	1.248647	0.013366	0	1.262013	0	0	0	1.262013	3.576949	0.097314	0	3.674262	0.025119	0.000229	0	0.025348	0.116144	238.9642
1063.465	1.517743	0	0.442423	1.960165	0.271952	0	0.022624	0.294577	11.55733	0	3.515244	15.07257	4.228041	5.090776	5.199135	29.59052	13.08186	0	3.815719	16.89758	4.228041	5.090776	5.199135	31.41553	122.4002	0	13.50754	135.9078	0.009295	0	0.001076	0.010372	0.032595	110.63
82169.66	2.901438	0	4.956312	7.85775	4.246751	0	1.571367	5.818119	15.08396	0	28.43039	43.51435	7.890703	2.947477	8.122155	62.47468	20.6829	0	31.11898	51.80188	7.890703	2.947477	8.122155	70.76221	529.5278	0	215.0643	744.592	0.772589	0	0.028796	0.801385	5.209395	8547.934
92.13579	0.001329	0	0	0.001329	0.014446	0	0	0.014446	0.028608	0	0	0.028608	0	0	0	0.028608	0.032568	0	0	0.032568	0	0	0	0.032568	0.176884	0	0	0.176884	0.000869	0	0	0.000869	0.000537	8.190952
2821.734	0.121763	0	0.001521	0.123284	0.094693	0	0.000521	0.095214	0.779738	0	0.01012	0.789858	1.282143	0.559184	0.009318	2.640504	0.9832	0	0.011015	0.994216	1.282143	0.559184	0.009318	2.844861	25.36949	0	0.092646	25.46214	0.027511	0	8.33E-06	0.02752	0.060598	293.539
362.0796	0.002147	0	0	0.002147	0.056772	0	0	0.056772	0.046226	0	0	0.046226	0	0	0	0.046226	0.052625	0	0	0.052625	0	0	0	0.052625	0.184265	0	0	0.184265	0.003414	0	0	0.003414	0.01026	32.18919
5070.813	0.268549	0.012613	0.162614	0.443776	0.25716	0.000284	0.03566	0.293104	1.676204	0.064666	1.298159	3.039029	0.434193	0.224226	0.99928	4.696727	2.220718	0.089294	1.412157	3.722169	0.434193	0.224226	0.99928	5.379868	44.23237

1994.972	0.039015	0.003515	0.020431	0.062962	0.0611	8.62E-05	0.011318	0.072504	0.199283	0.014181	0.128148	0.341612	0.040309	0.017266	0.051663	0.45085	0.280999	0.020513	0.139887	0.441398	0.040309	0.017266	0.051663	0.550637	5.668846	0.109168	1.868766	7.64678	0.019239	7.44E-05	0.000143	0.019457	0.047299	207.5326
990.7889	0.031602	0.002024	0	0.033627	0.150425	0.004925	0	0.15535	0.680392	0.043579	0	0.723972	0	0	0	0.723972	0.774575	0.049612	0	0.824186	0	0	0	0.824186	1.949505	0.193256	0	2.142761	0.009041	0.000296	0	0.009337	0.01992	88.082
9.616639	0.005205	0.000897	0	0.006102	0.001916	4.64E-05	0	0.001962	7.44E-05	1.28E-05	0	8.72E-05	0	0	0	8.72E-05	0.005312	0.000916	0	0.006227	0	0	0	0.006227	0.027438	0.000913	0	0.028352	0	0	0	0	0.010618	1.112632
219.3539	0.049083	0.009241	0.003654	0.061978	0.023318	0.000253	0.000655	0.024226	0.341021	0.048644	0.027546	0.417211	0.036378	0.016463	0.031536	0.501589	0.429535	0.06808	0.029991	0.527607	0.036378	0.016463	0.031536	0.611984	8.401702	0.368387	0.343959	9.114048	0.001995	0.000129	1.55E-05	0.002139	0.007669	22.81892
644.7058	0.019609	0.002109	0	0.021718	0.0936	0.007486	0	0.101086	0.422175	0.045397	0	0.467572	0	0	0	0.467572	0.480614	0.051681	0	0.532295	0	0	0	0.532295	1.05745	0.291472	0	1.348923	0.005626	0.00045	0	0.006076	0.013621	57.31491
14.72633	0.037844	0.005974	0	0.043818	0.002696	0.000309	0	0.003005	0.000541	8.54E-05	0	0.000626	0	0	0	0.000626	0.038623	0.006097	0	0.044719	0	0	0	0.044719	0.136188	0.00608	0	0.142268	0	0	0	0	0.008389	1.703816
288.0892	0.001523	0	0.000868	0.002391	0.003741	0	0.000652	0.004393	0.006249	0	0.003922	0.010171	0.001728	0.000475	0.001215	0.013588	0.009119	0	0.004294	0.013413	0.001728	0.000475	0.001215	0.01683	0.12664	0	0.067221	0.193861	0.002803	0	7.07E-06	0.00281	0.007512	29.9693
979.321	0.003825	0	0	0.003825	0.153552	0	0	0.153552	0.082354	0	0	0.082354	0	0	0	0.082354	0.093754	0	0	0.093754	0	0	0	0.093754	0.546458	0	0	0.546458	0.009235	0	0	0.009235	0.015941	87.0625
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1427.185	5.523165	0	0	5.523165	0.291228	0	0	0.291228	0.952421	0	0	0.952421	0	0	0	0.952421	6.632158	0	0	6.632158	0	0	0	6.632158	14.86141	0	0	14.86141	0	0	0	0	0.738961	165.1234
712.8812	0.09992	0	8.46E-06	0.099929	0.06771	0	0.000573	0.068283	0.729741	0	4.5E-05	0.729786	0.041657	0.029795	0.092524	0.893762	0.916213	0	4.93E-05	0.916263	0.041657	0.029795	0.092524	1.080238	26.34194	0	0.315023	26.65697	0.006936	0	0.000101	0.007037	0.011193	75.05765
65247.9	1.544558	0.108935	0	1.653493	9.951171	0.278872	0	10.23004	33.25391	2.345333	0	35.59924	0	0	0	35.59924	37.85705	2.669983	0	40.52703	0	0	0	40.52703	119.3764	6.809717	0	126.1861	0.598105	0.016761	0	0.614866	1.20744	5800.338
321.7982	0.826673	0.054873	0	0.881546	0.062314	0.003704	0	0.066018	0.077191	0.003065	0	0.080256	0	0	0	0.080256	0.918169	0.058601	0	0.97677	0	0	0	0.97677	2.066099	0.166961	0	2.23306	0	0	0	0	0.107053	37.43164
176564.3	8.271614	0	12.20123	20.47284	9.329336	0	3.383445	12.71278	42.30678	0	68.95554	111.2623	37.76701	15.88204	40.09017	205.0015	58.09286	0	75.4521	133.545	37.76701	15.88204	40.09017	227.2842	1489.376	0	641.5186	2130.895	1.679129	0	0.063723	1.742853	17.54937	18590.06
526.146	0.012185	0	0	0.012185	0.082493	0	0	0.082493	0.262326	0	0	0.262326	0	0	0	0.262326	0.298641	0	0	0.298641	0	0	0	0.298641	1.861965	0	0	1.861965	0.004961	0	0	0.004961	0.005411	46.77277
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.181429	6.02E-07	0	4.09E-06	4.69E-06	7.49E-07	0	2.06E-06	2.81E-06	1.88E-06	0	1.64E-05	1.82E-05	1.49E-05	3.74E-06	3.54E-06	4.04E-05	2.74E-06	0	1.79E-05	2.06E-05	1.49E-05	3.74E-06	3.54E-06	4.29E-05	0.000282	0	0.000125	0.000407	1.72E-06	0	6.99E-08	1.79E-06	1.2E-05	0.019102
22680.1	2.013498	0	1.998623	4.01212	1.925235	0	0.4715	2.396734	11.85726	0	12.00086	23.85812	8.731606	3.583455	9.429678	45.60286	15.36695	0	13.12651	28.49346	8.731606	3.583455	9.429678	50.2382	344.4762	0	124.4282	468.9044	0.214353	0	0.009521	0.223874	2.393683	2387.937
43.51883	0.001071	0	0	0.001071	0.006823	0	0	0.006823	0.023054	0	0	0.023054	0	0	0	0.023054	0.026245	0	0	0.026245	0	0	0	0.026245	0.143291	0	0	0.143291	0.00041	0	0	0.00041	0.00029	3.86869
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81404.21	3.343704	0	4.950954	8.294658	4.914027	0	1.745801	6.659828	17.4569	0	27.98232	45.43923	11.27806	4.54411	11.95431	73.21571	23.81064	0	30.6264	54.43704	11.27806	4.54411	11.95431	82.21353	631.6588	0	260.5682	892.227	0.774603	0	0.028932	0.803535	6.185935	8570.865
6.202375	0.000139	0	0	0.000139	0.000972	0	0	0.000972	0.002995	0	0	0.002995	0	0	0	0.002995	0.00341	0	0	0.00341	0	0	0	0.00341	0.017691	0	0	0.017691	5.85E-05	0	0	5.85E-05	4.27E-05	0.551372
19961.61	0.66699	0.074177	0.417491	1.158658	0.703483	0.001754	0.406461	1.111698	3.595465	0.293854	2.290711	6.180029	2.072343	0.736061	3.71875	12.70718	5.130241	0.427885	2.506357	8.064483	2.072343	0.736061	3.71875	14.59164	78.27485	2.284788	29.91021	110.4698	0.194016	0.00077	0.002253	0.19704	0.909426	2101.713
8049.281	0.201714	0.002028	0	0.203742	1.253076	0.008949	0	1.262025	4.342786	0.043651	0	4.386438	0	0	0	4.386438	4.943974	0.049694	0	4.993668	0	0	0	4.993668	14.55169	0.361805	0	14.91349	0.075363	0.000538	0	0.075902	0.421572	715.5564
2858.985	0.064393	0.009578	0.051116	0.125087	0.08022	0.000227	0.054687	0.135134	0.333495	0.037232	0.273433	0.644159	0.222809	0.077879	0.399428	1.344276	0.480797	0.054284	0.299292	0.834373	0.222809	0.077879	0.399428	1.534489	7.458257	0.289425	3.752098	11.49978	0.027792	0.000112	0.000317	0.028221	0.118177	301.016
2700.095	0.052161	0.000543	0	0.052704	0.419545	0.003796	0	0.423341	1.122988	0.01169	0	1.134678	0	0	0	1.134678	1.278447	0.013308	0	1.291756	0	0	0	1.291756	3.631888	0.096894	0	3.728781	0.025233	0.000228	0	0.025461	0.116957	240.0302
1015.869	1.430066	0	0.424318	1.854384	0.258738	0	0.021576	0.280314	10.83151	0	3.362231	14.19374	4.076487	5.146701	5.262826	28.67976	12.29016	0	3.649854	15.94001	4.076487	5.146701	5.262826	30.42603	115.2045	0	13.20071	128.4052	0.008992	0	0.001036	0.010028	0.032086	106.9586
81357.74	2.862161	0	4.846112	7.708272	4.229476	0	1.5361	5.765576	14.73738	0	27.71587	42.45325	7.957636	3.053383	8.024211	61.48848	20.2841	0	30.33764	50.62174	7.957636	3.053383	8.024211	69.65697	519.3073	0	205.7065	725.0139	0.77498	0	0.028096	0.803076	5.151591	8565.972
133.343	0.001273	0	0	0.001273	0.020906	0	0	0.020906	0.027411	0	0	0.027411	0	0	0	0.027411	0.031206	0	0	0.031206	0	0	0	0.031206	0.179958	0	0	0.179958	0.001257	0	0	0	0.001257	0.000804	11.85379
2673.52	0.113178	0	0.001401	0.114579	0.089209	0	0.000496	0.089704	0.720535	0	0.009229	0.729764	1.222775	0.533489	0.008968	2.494996	0.910718	0	0.010047	0.920765	1.222775	0.533489	0.008968	2.685996	23.25834	0	0.086907	23.34524	0.026382	0	7.74E-06	0.02639	0.058446	281.4889
357.1542	0.002136	0	0	0.002136	0.055997	0	0	0.055997	0.045983	0	0	0.045983	0	0	0	0.045983	0.052348	0	0	0.052348	0	0	0	0.052348	0.182857	0	0	0.182857	0.003368	0	0	0.003368	0.010232	31.74991
4844.312	0.25007	0.012032	0.151945	0.414046	0.240977	0.000266	0.034081	0.275324	1.559952	0.061017	1.205145	2.826115	0.40774	0.208848	0.945169	4.387873	2.062915	0.08457	1.311043	3.458528	0.40774	0.208848	0.945169	5.020286	41.03977	0.864337	9.230118	51.13423	0.046584	0.000345	0.00089	0.047818	0.107281	510.0467
13216.44	0.273106	0.023671	0	0.296776	1.961616	0.110554	0	2.07217	5.879889	0.509623	0	6.389512	0	0	0	6.389512	6.693806	0.580167	0	7.273973	0	0	0	7.273973	16.45818	3.559861	0	20.01805	0.117901	0.006645	0	0.124546	0.317849	1174.901
12.64533	0.006204	0.0052	0	0.011404	0.002326	0.000269	0	0.002594	8.86E-05	7.43E-05	0	0.000163	0	0	0	0.000163	0.006332	0.005307	0	0.011639	0.033517	0.005292	0	0.011639	0.033517	0.005292	0	0.038809	0	0	0	0	0.013018	1.470908
1995.337	0.038192	0.003529	0.019836	0.061557	0.059511	8.71E-05	0.011252	0.07085	0.194694	0.014117	0.122911	0.331722	0.039546	0.01685	0.050562	0.438681	0.274893	0.020443	0.134193	0.429529	0.039546	0.01685	0.050562	0.536487	5.402094	0.10875	1.855323	7.366166	0.019481	7.4E-05	0.000141	0.019696	0.047928	210.0846
989.6427	0.030678	0.001962	0	0.03264	0.150011	0.005152	0	0.155163	0.660488	0.042232	0	0.70272	0	0	0	0.70272	0.751916	0.048078	0	0.799994	0	0	0	0.799994	1.887304	0.19176	0	2.079064	0.009016	0.00031	0	0.009326	0.02039	87.9762
15.73681	0.008771	0.00138	0	0.010151	0.003157	7.13E-05	0	0.003228	0.000125	1.97E-05	0	0.000145	0	0	0	0.000145	0.008952	0.001408	0	0.01036	0	0	0	0.01036	0.04507	0.001404	0	0.046474	0	0	0	0	0.01723	1.830509
227.5322	0.048931	0.009524	0.003605	0.06206	0.023359	0.000268	0.000692	0.024318	0.3404	0.049376	0.02701	0.416786	0.035781	0.016446	0.031094	0.500108	0.427637	0.069233	0.029408	0.526278	0.035781	0.016446	0.031094	0.609599	8.395183	0.374023	0.334464	9.10367	0.0021	0.00013	1.54E-05	0.002246	0.008224	23.95635
638.3316	0.018954	0.001859	0	0.020813	0.092321	0.007762	0	0.100082	0.408068	0.040021	0	0.44809	0	0	0	0.44809	0.464555	0.045561	0	0.510116	0	0	0	0.510116	1.028405	0.275822	0	1.304228	0.005549	0.000467	0	0.006015	0.013809	56.74573
28.78912	0.074473	0.011913	0	0.086385	0.005291	0.000615	0	0.005906	0.001064	0.00017	0	0.001234	0	0	0	0.001234	0.076005	0.012158	0	0.088163	0	0	0	0.088163	0.268672	0.012124	0	0.280796	0	0	0	0	0.016073	3.348757
330.1212	0.001228	0	0.000902	0.00213	0.003654	0	0.000695	0.004349	0.004521	0	0.003953	0.008475	0.001639	0.000449	0.00101	0.011572	0.006598	0	0.004328	0.010926	0.001639	0.000449	0.00101	0.014024	0.092893	0	0.068489	0.161382	0.003251	0	7.49E-06	0.003259	0.008506	34.75772
912.4636	0.003746	0	0	0.003746	0.143063	0	0	0.143063	0.080657	0	0	0.080657	0	0	0	0.080657	0.091822	0	0	0.091822	0	0	0	0.091822	0.498411	0	0	0.498411	0.008604	0	0	0.008604	0.015171	81.11522
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1463.951	5.207299	0	0	5.207299	0.300335	0	0	0.300335	0.877342	0	0	0.877342	0	0	0	0.877342	6.229358	0	0	6.229358	0	0	0	6.229358	15.26316	0	0	15.26316	0	0	0	0	0.749785	170.2871
677.3814	0.091952	0	1.23E-05	0.091965	0.063182	0	0.000565	0.063748	0.669211	0	6.57E-05	0.669277	0.038531	0.026751	0.08532	0.819879	0.842057	0	7.2E-05	0.842129	0.038531	0.026751	0.08532	0.992731	24.31255	0	0.302098	24.61465	0.006613	0	9.28E-05	0.006706	0.010751	71.53209
66246.33	1.50017	0.10803	0	1.6082	10.08432	0.306004	0	10.39032	32.29824	2.325853	0	34.6241	0	0	0	34.6241	36.76909	2.647806	0	39.4169	0	0	0	39.4169	117.1451	7.611276	0	124.7564	0.606107	0.018392	0	0.624499	1.620104	5891.214
407.0181	1.01463	0.076893	0	1.091524	0.07866	0.00503	0	0.08369	0.078959	0.003338	0	0.082297	0	0	0	0.082297	1.108948	0.081027	0	1.189975	0	0	0	1.189975	3.032207	0.214936	0	3.247143	0	0	0	0	0.147459	47.45127
173662	7.438417	0	11.45734	18.89576	8.51329	0	3.25732	11.77061	37.67101	0	64.24825	101.9193	36.2788	14.69479	36.46046	189.3533	51.95543	0	70.3054	122.2608	36.2788	14.69479	36.46046	209.6949	1358.561	0	593.0614	1951.622	1.657326	0	0.061976	1.719302	16.59511	18338.86
621.8128	0.011037	0	0	0.011037	0.097527	0	0	0.097527	0.237625	0	0	0.237625	0	0	0	0.237625	0.27052	0	0	0.27052	0	0	0	0.27052	1.773109	0	0	1.773109	0.005866	0	0	0.005866	0.006702	55.29714
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9.304205	3.09E-05	0	0.000209	0.00024	3.85E-05	0	0.000106	0.000144	9.62E-05	0	0.000835	0.000931	0.000765	0.000191	0.000181	0.002068	0.00014	0	0.000914	0.001054	0.000765	0.000191	0.000181	0.002192	0.014476	0	0.006397	0.020873	8.84E-05	0	3.72E-06	9.21E-05	0.000615	0.982532
20997.02	1.811041	0	1.840426	3.651467	1.734851	0	0.436028	2.170879	10.59007	0	11.02497	21.61504	8.3096	3.297366	8.634123	41.85613	13.78107	0	12.05983	25.8409	8.3096	3.297366	8.634123	46.08199	309.3524	0	112.9547	422.3071	0.199056	0	0.00882	0.207876	2.186028	2217.304
40.79231	0.000993	0	0	0.000993	0.006398	0	0	0.006398	0.021379	0	0	0.021379	0	0	0	0.021379	0.024339	0	0	0.024339	0	0	0	0.024339	0.132935	0	0	0.132935	0.000385	0	0	0.000385	0.000271	3.627616
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81486.75	3.12475	0	4.776137	7.900886	4.606822	0	1.694455	6.301276	16.21326	0	26.83837	43.05163	11.34872	4.436524	11.32813	70.165	22.17769	0	29.37509	51.55278	11.34872	4.436524	11.32813	78.66615	595.093	0	247.5994	842.6924	0.777954	0	0.028787	0.806742	5.99708	8605.074
7.258326	0.000144	0	0	0.000144	0.001138	0	0	0.001138	0.003107	0	0	0.003107	0	0	0	0.003107	0.003537	0	0	0.003537	0	0	0	0.003537	0.018765	0	0	0.018765	6.85E-05	0	0	6.85E-05	5.11E-05	0.645475
18545.47	0.587862	0.071119	0.401184	1.060165	0.639832	0.001675	0.397153	1.03866	3.156221	0.281963	2.189678	5.627862	2.008328	0.701928	3.491219	11.82934	4.506483	0.410652	2.395972	7.313107	2.008328	0.701928	3.491219	13.51458	68.7626	2.191638	27.91557	98.86981	0.180723	0.000737	0.002145	0.183605	0.850156	1958.418
7863.886	0.195571	0.002	0	0.197571	1.224574	0.008827	0	1.233401	4.210519	0.04306	0	4.253579	0	0	0	4.253579	4.793396	0.049021	0	4.842417	0	0	0	4.842417	14.0201	0.356903	0	14.377	0.073649	0.000531	0	0.07418	0.518871	699.3268
2786.257	0.059058	0.009609	0.051176	0.119842	0.075425	0.000228	0.055998	0.13165	0.305314	0.037312	0.272549	0.615175	0.225165	0.077467	0.388275	1.306082	0.439841	0.054401	0.298326	0.792568	0.225165	0.077467	0.388275	1.483475	6.896786	0.2899	3.686051	10.87274	0.027157	0.000112	0.000315	0.027585	0.116767	294.2312
2733.004	0.050993	0.000546	0	0.051538	0.424831	0.003823	0	0.428655	1.09784	0.011753	0	1.109593	0	0	0	1.109593	1.249818	0.01338	0	1.263198	0	0	0	1.263198	3.497796	0.097413	0	3.595209	0.025551	0.00023	0	0.02578	0.172348	243.0431
987.6775	1.342748	0	0.41705	1.759798	0.245988	0	0.021091	0.267079	10.11482	0	3.299009	13.41383	4.043274	5.21347	5.340413	28.01099	11.5078	0	3.581451	15.08925	4.043274	5.21347	5.340413	29.6864	107.991	0	13.23747	121.2284	0.008755	0	0.001023	0.009778	0.031964	104.2996
79175.69	2.689917	0	4.683242	7.373159	4.008491	0	1.488222	5.496714	13.76461	0	26.75594	40.52055	7.964971	3.031217	7.685944	59.20268	19.00588	0	29.28752	48.29339	7.964971	3.031217	7.685944	66.97553	488.3245	0	195.6242	683.9486	0.756328	0	0.027533	0.783862	4.920642	8361.024
206.2568	0.0012	0	0	0.0012	0.03235	0	0	0.03235	0.025826	0	0	0.025826	0	0	0	0.025826	0.029401	0	0	0.029401	0	0	0	0.029401	0.189067	0	0	0.189067	0.001946	0	0	0.001946	0.001293	18.34219
2477.681	0.099954	0	0.001281	0.101235	0.080102	0	0.000473	0.080575	0.632497	0	0.008336	0.640833	1.143133	0.487845	0.008261	2.280072	0.801121	0	0.009076	0.810197	1.143133	0.487845	0.008261	2.449435	20.28022	0	0.080578	20.36079	0.024523	0	7.17E-06	0.02453	0.054698	261.6453
343.7662	0.002073	0	0	0.002073	0.053918	0	0	0.053918	0.044621	0	0	0.044621	0	0	0	0.044621	0.050799	0	0	0.050799	0	0	0	0.050799	0.176847	0	0	0.176847	0.003243	0	0	0.003243	0.011412	30.57076
4786.47	0.223517	0.012062	0.140256	0.375835	0.21974	0.000274	0.033687	0.253701	1.386115	0.059609	1.099485	2.545209	0.380263	0.187759	0.868623	3.981854	1.836568	0.08306	1.196321	3.115949	0.380263	0.187759	0.868623	4.552594	36.4231	0.847201	8.902076	46.17238	0.04621	0.000337	0.000841	0.047387	0.107328	505.4555
13389.51	0.272004	0.022307	0	0.294311	1.989555	0.110506	0	2.100061	5.856182	0.480257	0	6.336439	0	0	0	6.336439	6.666818	0.546736	0	7.213554	0	0	0	7.213554	16.46506	3.433206	0	19.89826	0.11958	0.006642	0	0.126222	0.401312	1190.715
17.26397	0.008565	0.007156	0	0.015721	0.00318	0.00037	0	0.00355	0.000122	0.000102	0	0.000225	0	0	0	0.000225	0.008741	0.007304	0	0.016045	0	0	0	0.016045	0.045773	0.007284	0	0.053057	0	0	0	0	0.017713	2.01268
1864.812	0.034883	0.003388	0.018557	0.056828	0.054247	8.42E-05	0.010663	0.064994	0.177579	0.013511	0.114092	0.305182	0.03748	0.015633	0.046695	0.40499	0.251187	0.019579	0.124586	0.395351	0.03748	0.015633	0.046695	0.495159	4.821485	0.104119	1.773509	6.699114	0.018258	7.08E-05	0.000134	0.018462	0.04493	196.9258
1002.528	0.030202	0.001796	0	0.031998	0.152104	0.005137	0	0.15724	0.65024	0.038662	0	0.688902	0	0	0	0.688902	0.740249	0.044013	0	0.784263	0	0	0	0.784263	1.854263	0.184613	0	2.038876	0.009142	0.000309	0	0.009451	0.026063	89.15371
17.77403	0.009941	0.001469	0	0.01141	0.003579	7.59E-05	0	0.003655	0.000142	2.1E-05	0	0.000163	0	0	0	0.000163	0.010146	0.001499	0	0.011645	0	0	0	0.011645	0.05109	0.001495	0	0.052585	0	0	0	0	0.019531	2.072144
231.0684	0.044972	0.009955	0.003563	0.058489	0.022077	0.00029	0.000755	0.023122	0.314134	0.050674	0.026478	0.391287	0.033874	0.015656	0.028958	0.469775	0.391899	0.071203	0.028831	0.491933	0.033874	0.015656	0.028958	0.570422	7.847658	0.383867	0.325875	8.5574	0.00214	0.000133	1.53E-05	0.002288	0.008623	24.40103
639.4386	0.018397	0.001719	0	0.020115	0.092344	0.007948	0	0.100292	0.396077	0.036999	0	0.433076	0	0	0	0.433076	0.450903	0.042121	0	0.493024	0	0	0	0.493024	1.001917	0.267275	0	1.269192	0.00555	0.000478	0	0.006028	0.016232	56.86458
42.4732	0.110636	0.017035	0	0.127672	0.007853	0.00088	0	0.008733	0.001581	0.000243	0	0.001824	0	0	0	0.001824	0.112913	0.017386	0	0.130298	0	0	0	0.130298	0.399432	0.017338	0	0.41677	0	0	0	0	0.023686	4.95164
350.6472	0.001187	0	0.000996	0.002183	0.003798	0	0.000759	0.004557	0.004303	0	0.004318	0.008621	0.001661	0.000462	0.001003	0.011746	0.006278	0	0.004728	0.011006	0.001661	0.000462	0.001003	0.

1384.478	4.458521	0	0	4.458521	0.284672	0	0	0.284672	0.730579	0	0	0.730579	0	0	0	0	0.730579	5.310149	0	0	5.310149	0	0	0	5.310149	14.67856	0	0	14.67856	0	0	0	0	0.697773	161.4061
628.3291	0.081715	0	4.04E-06	0.081719	0.057827	0	0.00048	0.058307	0.586208	0	2.15E-05	0.58623	0.033858	0.022079	0.075028	0.717196	0.743136	0	2.36E-05	0.74316	0.033858	0.022079	0.075028	0.874126	21.20322	0	0.279751	21.48297	0.006124	0	8.04E-05	0.006204	0.010082	66.17415
65723.31	1.323369	0.104365	0	1.427734	9.949835	0.359156	0	10.30899	28.49176	2.246959	0	30.73872	0	0	0	30.73872	32.4357	2.557992	0	34.99369	0	0	0	34.99369	104.4408	8.683874	0	113.1247	0.598024	0.021587	0	0.619611	2.17396	5845.101
499.8421	1.193142	0.100618	0	1.293761	0.096194	0.006475	0	0.102669	0.078908	0.003631	0	0.082539	0	0	0	0.082539	1.288169	0.105187	0	1.393355	0	0	0	1.393355	4.05497	0.268964	0	4.323934	0	0	0	0	0.195495	58.21237
174842.9	6.689482	0	10.8262	17.51568	7.811703	0	3.174216	10.98592	33.43141	0	60.08964	93.52105	35.15224	13.65946	33.5132	175.8459	46.36077	0	65.75959	112.1204	35.15224	13.65946	33.5132	194.4453	1248.007	0	551.9867	1799.993	1.665239	0	0.061112	1.726351	15.97302	18414.04
722.4438	0.010144	0	0	0.010144	0.113318	0	0	0.113318	0.218391	0	0	0.218391	0	0	0	0.218391	0.248624	0	0	0.248624	0	0	0	0.248624	1.720213	0	0	1.720213	0.006815	0	0	0.006815	0.008099	64.25052
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
89.56611	0.000297	0	0.001998	0.002295	0.000371	0	0.001011	0.001381	0.000923	0	0.007977	0.0089	0.007308	0.001824	0.001727	0.019758	0.001347	0	0.008733	0.01008	0.007308	0.001824	0.001727	0.020939	0.139189	0	0.061148	0.200338	0.00085	0	3.41E-05	0.000884	0.005927	9.432893
20322.93	1.64138	0	1.715276	3.356656	1.579776	0	0.411742	1.991518	9.52068	0	10.22994	19.75062	7.969693	3.064699	7.97678	38.76179	12.44317	0	11.19086	23.63403	7.969693	3.064699	7.97678	42.6452	281.2161	0	103.7141	384.9302	0.192271	0	0.008392	0.200663	2.046014	2140.364
39.01445	0.000921	0	0	0.000921	0.00612	0	0	0.00612	0.019835	0	0	0.019835	0	0	0	0.019835	0.022581	0	0	0.022581	0	0	0	0.022581	0.123895	0	0	0.123895	0.000368	0	0	0.000368	0.000258	3.469749
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81962.67	2.88971	0	4.582319	7.472028	4.292681	0	1.642243	5.934923	14.88019	0	25.56593	40.44612	11.32054	4.296054	10.6876	66.75031	20.41512	0	27.98311	48.39823	11.32054	4.296054	10.6876	74.70242	556.4528	0	233.6896	790.1424	0.780694	0	0.028583	0.809277	5.816426	8632.117
45.57566	0.000233	0	0	0.000233	0.007149	0	0	0.007149	0.005006	0	0	0.005006	0.005699	0	0	0.005006	0.005699	0	0	0.005699	0.032344	0	0	0.005699	0.032344	0.00043	0	0.032344	0.00043	0	0	0.00043	0.000376	4.05327
17415.17	0.518643	0.068346	0.385632	0.972621	0.581621	0.001605	0.388762	0.971988	2.775114	0.270991	2.094805	5.14091	1.943335	0.671274	3.276579	11.0321	3.962889	0.394725	2.292263	6.649877	1.943335	0.671274	3.276579	12.54106	60.60432	2.105562	26.12674	88.83661	0.169199	0.000707	0.002046	0.171953	0.800318	1834.125
7619.998	0.189877	0.001969	0	0.191846	1.186542	0.008688	0	1.19523	4.08795	0.042381	0	4.13033	0	0	0	4.13033	4.653859	0.048248	0	4.702106	0	0	0	4.702106	13.53781	0.351273	0	13.88908	0.071362	0.000523	0	0.071884	0.581983	677.6843
2757.152	0.054264	0.009705	0.051298	0.115266	0.071223	0.00023	0.057617	0.12907	0.278989	0.037621	0.271492	0.588102	0.226751	0.076557	0.377319	1.268728	0.402549	0.05486	0.297184	0.754593	0.226751	0.076557	0.377319	1.43522	6.353476	0.292204	3.654892	10.30057	0.026795	0.000113	0.000316	0.027223	0.116459	290.3768
2801.994	0.050298	0.000556	0	0.050854	0.435603	0.003902	0	0.439505	1.082893	0.011973	0	1.094866	0	0	0	1.094866	1.232802	0.013631	0	1.246432	0	0	0	1.246432	3.407869	0.099239	0	3.507108	0.026198	0.000235	0	0.026433	0.230059	249.1953
984.9745	1.274259	0	0.41051	1.684769	0.237222	0	0.020668	0.25789	9.529724	0	3.239181	12.76891	4.015264	5.312902	5.449156	27.54623	10.87568	0	3.516748	14.39242	4.015264	5.312902	5.449156	29.16975	102.0783	0	13.30345	115.3817	0.008712	0	0.001013	0.009725	0.032713	103.7352
78105.37	2.520351	0	4.523926	7.044277	3.791238	0	1.444884	5.236122	12.81836	0	25.79216	38.61052	8.099314	3.034637	7.456956	57.20143	17.74888	0	28.23307	45.98195	8.099314	3.034637	7.456956	64.57286	459.1675	0	186.0233	645.1908	0.744068	0	0.027123	0.771191	4.72827	8225.875
324.281	0.00132	0	0	0.00132	0.050865	0	0	0.050865	0.028427	0	0	0.028427	0	0	0	0.028427	0.032363	0	0	0.032363	0	0	0	0.032363	0.239987	0	0	0.239987	0.003059	0	0	0.003059	0.002088	28.83993
2345.823	0.087659	0	0.001169	0.088828	0.072401	0	0.000459	0.07286	0.548779	0	0.007477	0.556257	1.075201	0.445839	0.007646	2.084942	0.697927	0	0.008142	0.706069	1.075201	0.445839	0.007646	2.234755	17.48743	0	0.07558	17.56301	0.023155	0	6.67E-06	0.023162	0.052092	247.0566
335.2966	0.002038	0	0	0.002038	0.052593	0	0	0.052593	0.043867	0	0	0.043867	0	0	0	0.043867	0.049939	0	0	0.049939	0.173509	0	0	0.049939	0.173509	0	0	0.173509	0.003163	0	0	0.003163	0.012703	29.8196
4695.556	0.20061	0.011971	0.128802	0.341383	0.201771	0.000276	0.033139	0.235187	1.231393	0.057964	0.995794	2.285151	0.354228	0.167499	0.798158	3.605036	1.639188	0.081194	1.083775	2.804158	0.354228	0.167499	0.798158	4.124043	32.26806	0.826739	8.711849	41.80665	0.045242	0.000327	0.000794	0.046363	0.105788	494.525
13212.33	0.258739	0.021027	0	0.279767	1.961947	0.110466	0	2.072413	5.570581	0.452716	0	6.023297	0	0	0	6.023297	6.341683	0.515383	0	6.857065	0	0	0	6.857065	15.74074	3.328509	0	19.06925	0.117921	0.006639	0	0.12456	0.512147	1175.039
23.0118	0.011358	0.008834	0	0.020192	0.00427	0.000456	0	0.004727	0.000162	0.000126	0	0.000289	0	0	0	0.000289	0.011591	0.009016	0	0.020607	0.061497	0.008991	0	0.020607	0.061497	0.008488	0	0.070488	0	0	0	0	0.024022	2.679989
1814.471	0.032042	0.003355	0.017609	0.053006	0.049827	8.44E-05	0.010499	0.060411	0.162376	0.013293	0.106578	0.282247	0.036107	0.014588	0.043695	0.376637	0.230393	0.019283	0.116413	0.36609	0.036107	0.014588	0.043695	0.460479	4.31436	0.102512	1.730718	6.14759	0.017717	6.96E-05	0.000129	0.017916	0.043618	191.0958
990.9391	0.027564	0.00169	0	0.029254	0.150034	0.005399	0	0.155433	0.593438	0.036383	0	0.629821	0	0	0	0.629821	0.675585	0.041419	0	0.717004	0	0	0	0.717004	1.687123	0.183714	0	1.870837	0.009018	0.000325	0	0.009342	0.035716	88.12915
18.98216	0.010628	0.001668	0	0.012297	0.003813	8.62E-05	0	0.003899	0.000152	2.38E-05	0	0.000176	0	0	0	0.000176	0.010847	0.001703	0	0.01255	0	0	0	0.01255	0.054405	0.001698	0	0.056103	0	0	0	0	0.020759	2.21069
229.6519	0.04047	0.010068	0.00336	0.053898	0.020623	0.0003	0.000785	0.021707	0.280708	0.050451	0.024718	0.355877	0.031479	0.01425	0.026552	0.428158	0.351139	0.071141	0.026918	0.449198	0.031479	0.01425	0.026552	0.52148	7.023431	0.382887	0.31335	7.719669	0.002121	0.000132	1.49E-05	0.002268	0.008768	24.18641
635.2302	0.014065	0.001266	0	0.015331	0.091378	0.008261	0	0.099639	0.30282	0.027263	0	0.330082	0	0	0	0.330082	0.344737	0.031036	0	0.375774	0	0	0	0.375774	0.76371	0.206663	0	0.970374	0.005492	0.000496	0	0.005989	0.019129	56.49419
46.72836	0.121664	0.018661	0	0.140325	0.008634	0.000964	0	0.009598	0.001738	0.000267	0	0.002005	0	0	0	0.002005	0.124167	0.019045	0	0.143212	0	0	0	0.143212	0.439324	0.018993	0	0.458317	0	0	0	0	0.025995	5.442055
375.1691	0.001257	0	0.001062	0.002319	0.004251	0	0.000806	0.005058	0.004581	0	0.004568	0.009149	0.001819	0.00051	0.001016	0.012493	0.006684	0	0.005001	0.011685	0.001819	0.00051	0.001016	0.01503	0.10315	0	0.07828	0.181431	0.003696	0	8.73E-06	0.003704	0.009663	39.51193
790.3035	0.0031	0	0	0.0031	0.123963	0	0	0.123963	0.066736	0	0	0.066736	0	0	0	0.066736	0.075974	0	0	0.075974	0	0	0	0.075974	0.38328	0	0	0.38328	0.007455	0	0	0.007455	0.016504	70.28562
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1457.777	4.342128	0	0	4.342128	0.299432	0	0	0.299432	0.697685	0	0	0.697685	0	0	0	0.697685	5.155752	0	0	5.155752	0	0	0	5.155752	15.85118	0	0	15.85118	0	0	0	0	0.725503	169.7749
540.7889	0.070452	0	1.78E-06	0.070453	0.049588	0	0.000505	0.050093	0.502665	0	9.42E-06	0.502675	0.029088	0.017745	0.064429	0.613937	0.640242	0	1.03E-05	0.640252	0.029088	0.017745	0.064429	0.751515	17.93039	0	0.2422	18.17259	0.005297	0	6.76E-05	0.005365	0.008764	57.22049
69248.76	1.066112	0.087588	0	1.1537	10.45781	0.412217	0	10.87002	22.9531	1.885742	0	24.83885	0	0	0	24.83885	26.13036	2.146774	0	28.27713	0	0	0	28.27713	85.56305	9.117847	0	94.6809	0.628555	0.024776	0	0.653331	3.154159	6163.201
796.3517	1.620383	0.172024	0	1.792407	0.152236	0.010402	0	0.162639	0.088578	0.0048	0	0.093378	0	0	0	0.093378	1.728261	0.178231	0	1.906493	0	0	0	1.906493	6.623277	0.37788	0	7.001157	0	0	0	0.36845	92.21459
176013.1	6.030758	0	10.24579	16.27655	7.13949	0	3.10504	10.24453	29.98688	0	56.32241	86.30929	34.41031	13.08413	31.10859	164.9123	41.63218	0	61.63802	103.2702	34.41031	13.08413	31.10859	181.8732	1144.893	0	514.9035	1659.796	1.685211	0	0.060807	1.746018	15.45693	18623.82
845.7697	0.009429	0	0	0.009429	0.132761	0	0	0.132761	0.203004	0	0	0.203004	0	0	0	0.203004	0.231106	0	0	0.231106	0	0	0	0.231106	1.699127	0	0	1.699127	0.007985	0	0	0.007985	0.009859	75.27425
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
240.9377	0.000802	0	0.00545	0.006252	0.001001	0	0.002754	0.003755	0.002495	0	0.021787	0.024281	0.019962	0.004978	0.004716	0.053937	0.00364	0	0.023854	0.027494	0.019962	0.004978	0.004716	0.05715	0.37637	0	0.167034	0.543404	0.002299	0	9.14E-05	0.00239	0.016034	25.49344
19802.83	1.488313	0	1.610508	3.098821	1.443797	0	0.393771	1.837568	8.552571	0	9.553187	18.10576	7.719401	2.87354	7.451266	36.14997	11.2314	0	10.45119	21.68259	7.719401	2.87354	7.451266	39.72679	256.6121	0	95.82551	352.4376	0.188353	0	0.008087	0.19644	1.93806	2095.323
38.28609	0.000856	0	0	0.000856	0.00601	0	0	0.00601	0.018425	0	0	0.018425	0	0	0	0.018425	0.020975	0	0	0.020975	0	0	0	0.020975	0.115368	0	0	0.115368	0.000361	0	0	0.000361	0.000254	3.407496
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
83287.48	2.663511	0	4.424946	7.088457	3.985521	0	1.60912	5.594641	13.60602	0	24.43978	38.0458	11.37069	4.202733	10.19024	63.80946	18.71219	0	26.75115	45.46334	11.37069	4.202733	10.19024	71.227	520.9627	0	222.1933	743.1559	0.79736	0	0.028837	0.826197	5.714961	8812.588
79.43827	0.000335	0	0	0.000335	0.012469	0	0	0.012469	0.007217	0	0	0.007217	0	0	0	0.007217	0.008216	0	0	0.008216	0	0	0	0.008216	0.048035	0	0	0.048035	0.00075	0	0	0.00075	0.000669	7.070076
16608.1	0.463453	0.067012	0.376671	0.907136	0.532945	0.001575	0.389394	0.923914	2.476083	0.265299	2.037678	4.77906	1.890426	0.647429	3.105898	10.42281	3.53185	0.38645	2.229786	6.148086	1.890426	0.647429	3.105898	11.79184	54.32404	2.060325	25.08183	81.4662	0.162067	0.000691	0.001992	0.164749	0.77414	1757.291
7676.714	0.186796	0.001986	0	0.188782	1.196254	0.008764	0	1.205019	4.021614	0.042752	0	4.064367	0	0	0	4.064367	4.578341	0.048671	0	4.627011	0	0	0	4.627011	13.22024	0.354353	0	13.57459	0.071946	0.000527	0	0.072473	0.707558	683.2343
2722.258	0.0494	0.009848	0.051488	0.110736	0.066693	0.000234	0.059403	0.126331	0.253072	0.038071	0.270972	0.562115	0.226054	0.075401	0.363934	1.227505	0.365087	0.055519	0.29662	0.717226	0.226054	0.075401	0.363934	1.382615	5.832879	0.295547	3.641612	9.770037	0.026573	0.000114	0.000318	0.027004	0.116919	288.0402
2910.916	0.050094	0.000576	0	0.05067	0.452878	0.004051	0	0.456928	1.078491	0.012409	0	1.090901	0	0	0	1.090901	1.227791	0.014127	0	1.241918	0	0	0	1.241918	3.351244	0.102855	0	3.454099	0.027237	0.000244	0	0.027481	0.289718	259.0741
977.5671	1.211425	0	0.402511	1.613936	0.229399	0	0.020196	0.249595	8.985069	0	3.165594	12.15066	3.976771	5.406124	5.552106	27.08566	10.28953	0	3.437129	13.72666	3.976771	5.406124	5.552106	28.66167	96.5451	0	13.34657	109.8917	0.008696	0	0.001001	0.009697	0.033549	103.4357
75722.94	2.342134	0	4.345016	6.68715	3.551954	0	1.397584	4.949539	11.85368	0	24.71943	36.57311	8.147868	3.014345	7.215741	54.95107	16.44772	0	27.05922	43.50694	8.147868	3.014345	7.215741	61.8849	428.8668	0	176.0392	604.906	0.724652	0	0.026506	0.751158	4.508789	8012.19
387.4491	0.001317	0	0	0.001317	0.060818	0	0	0.060818	0.028352	0	0	0.028352	0	0	0	0.028352	0.032277	0	0	0.032277	0	0	0	0.032277	0.261343	0	0	0.261343	0.003658	0	0	0.003658	0.002528	34.48331
2210.584	0.077592	0	0.001088	0.07868	0.065608	0	0.000449	0.066058	0.482328	0	0.006866	0.489194	1.01212	0.410846	0.0071	1.91926	0.614512	0	0.007477	0.621989	1.01212	0.410846	0.0071	2.052056	15.24391	0	0.071095	15.31501	0.021922	0	6.28E-06	0.021929	0.049656	233.9002
333.0798	0.002003	0	0	0.002003	0.052284	0	0	0.052284	0.043126	0	0	0.043126	0	0	0	0.043126	0.049096	0	0	0.049096	0	0	0	0.049096	0.169604	0	0	0.169604	0.003144	0	0	0.003144	0.015773	29.64439
4759.907	0.180976	0.01233	0.121269	0.314575	0.185851	0.000292	0.033955	0.220098	1.101759	0.058151	0.924014	2.083923	0.332981	0.150344	0.741485	3.308734	1.472741	0.081918	1.005893	2.560552	0.332981	0.150344	0.741485	3.785362	28.76256	0.832261	8.629139	38.22396	0.046122	0.000328	0.000767	0.047217	0.108727	503.6423
14033.21	0.231205	0.014915	0	0.246119	2.0909	0.111901	0	2.202801	4.977776	0.321109	0	5.298885	0	0	0	5.298885	5.666819	0.365559	0	6.032378	0	0	0	6.032378	14.4827	2.724364	0	17.20707	0.125671	0.006726	0	0.132397	0.702928	1248.968
26.25451	0.01302	0.009712	0	0.022732	0.004861	0.000501	0	0.005362	0.000186	0.000139	0	0.000325	0	0	0	0.000325	0.013288	0.009912	0	0.0232	0	0	0	0.0232	0.07	0.009885	0	0.079885	0	0	0	0	0.027319	3.040175
1860.136	0.030004	0.003507	0.017573	0.051084	0.046535	8.98E-05	0.011021	0.057647	0.152188	0.013762	0.104908	0.270859	0.036985	0.014373	0.043598	0.365814	0.216186	0.01998	0.114607	0.350773	0.036985	0.014373	0.043598	0.445729	3.950602	0.106174	1.740067	5.796843	0.018248	7.2E-05	0.000132	0.018452	0.044934	196.8196
1047.207	0.025993	0.001428	0	0.027421	0.159275	0.005105	0	0.164381	0.559622	0.030743	0	0.590365	0	0	0	0.590365	0.637087	0.034998	0	0.672085	0	0	0	0.672085	1.59372	0.164304	0	1.758024	0.009573	0.000307	0	0.009988	0.052902	93.20231
22.36861	0.012802	0.001676	0	0.014478	0.004482	8.65E-05	0	0.004568	0.000183	2.39E-05	0	0.000207	0	0	0	0.000207	0.013066	0.00171	0	0.014776	0	0	0	0.014776	0.063784	0.001705	0	0.06549	0	0	0	0.023938	2.590203
199.2668	0.011189	0.010361	0.001607	0.023157	0.010684	0.000345	0.000911	0.011941	0.062709	0.047086	0.00999	0.119785	0.013346	0.004098	0.010676	0.147905	0.088962	0.068585	0.010931	0.168478	0.013346	0.004098	0.010676	0.196598	1.538094	0.365498	0.258927	2.162519	0.001842	0.000122	1.21E-05	0.001977	0.009089	21.08427
668.6659	0.010639	0.000896	0	0.011535	0.096548	0.008413	0	0.104961	0.229059	0.019289	0	0.248348	0.260766	0.021959	0	0.282725	0.576866	0.152632	0	0.729498	0.005803	0.000506	0	0.282725	0.576866	0.152632	0	0.729498	0.005803	0.000506	0	0.006309	0.023229	59.51185
69.46506	0.181941	0.025924	0	0.207865	0.012855	0.001332	0	0.014187	0.0026	0.00037	0	0.00297	0	0	0	0.00297	0.185684	0.026458	0	0.212142	0	0	0	0.212142	0.657869	0.026385	0	0.684254	0	0	0	0.038296	8.043798
394.8281	0.001296	0	0.001175	0.002471	0.004477	0	0.000878	0.005355	0.004762	0	0.005048	0.00981	0.001954	0.000548	0.001061	0.013373	0.006949	0	0.005527	0.012475	0.001954	0.000548	0.001061	0.016039	0.112456	0	0.0872	0.199655	0.003907	0	9.66E-06	0.003917	0.01022	41.77647
740.6057	0.002844	0	0	0.002844	0.116253	0	0	0.116253	0.061233	0	0	0.061233	0	0	0	0.061233	0.069709	0	0	0.069709	0	0	0	0.069709	0.344059	0	0	0.344059	0.006992	0	0	0.006992	0.017876	65.91456
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1754.702	4.399823	0	0	4.399823	0.358362	0	0	0.358362	0.667639	0	0	0.667639	0	0	0	0.667639	5.179443	0	0	5.179443	0	0	0	5.179443	19.52319	0	0	19.52319	0	0	0	0	0.829829	203.188
338.0261	0.039731	0	2.13E-06	0.039733	0.029391	0	0.000329	0.029721	0.286413	0	1.13E-05	0.286424	0.018682	0.010616	0.041193	0.356915	0.361157	0	1.23E-05	0.361169	0.018682	0.010616	0.041193	0.43166	11.35109	0	0.154407	11.5055	0.003321	0	4.15E-05	0.003362	0.005507	35.86272
70055.93	0.675084	0.077884	0	0.752968	10.50448	0.494383	0	10.99887	14.53436	1.676825	0	16.21119	0	0	0	16.21119	16.54627	1.908938	0	18.4552	0	0	0	18.4552	53.9484	11.18505	0	65.13345	0.631361	0.029714	0	0.661075	4.00944	6236.254
865.2484	1.749175	0.201205	0	1.95038	0.164437	0.01195	0	0.176387	0.084763	0.005026	0	0.08979	0	0	0	0.08979	1.85326	0.207796	0	2.061056	0	0	0	2.061056	7.488276	0.435006	0	7.923282	0	0	0	0.408567	100.0095
177655.1	5.312823	0	9.602256	14.91508	6.495135	0	3.031916	9.527052	25.8686	0	52.00201	77.8706	33.03493	11.98365	28.54496	151.4341	36.19482	0	56.91499	93.10981	33.03493	11.98365	28.54496	166.6733	1040.067	0	474.7735	1514.841	1.707003	0	0.060054	1.767057	15.04248	18848.24
1000.743	0.008726	0	0	0.008726	0.157118	0	0	0.157118	0.187855	0	0	0.187855	0	0	0	0.187855	0.21386	0	0	0.21386	0	0	0	0.21386	1.677792	0	0	1.677792	0.009449	0	0	0.009449	0.012027	89.08439
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
461.1287	0.001537	0	0.010493	0.012029	0.00192	0	0.0053	0.00722	0.004783	0	0.041961	0.046744	0.038464	0.009588	0.009084	0.10388	0.006979

33.34161	0.000742	0	0	0.000742	0.005235	0	0	0.005235	0.015977	0	0	0.015977	0	0	0	0.015977	0.018189	0	0	0.018189	0	0	0	0.018189	0.100758	0	0	0.100758	0.000315	0	0	0.000315	0.000222	2.968011
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
84692.86	2.451456	0	4.263586	6.715043	3.709451	0	1.576067	5.285518	12.39556	0	23.28086	35.67642	11.42454	4.08739	9.790037	60.97839	17.09696	0	25.48326	42.58022	11.42454	4.08739	9.790037	67.88219	488.1786	0	210.6908	698.8694	0.813461	0	0.028942	0.842403	5.64359	8985.447
131.8954	0.000445	0	0	0.000445	0.020708	0	0	0.020708	0.009576	0	0	0.009576	0	0	0	0.009576	0.010902	0	0	0.010902	0	0	0	0.010902	0.065462	0	0	0.065462	0.001245	0	0	0.001245	0.001138	11.7411
16139.37	0.515684	0.066631	0.419054	1.001368	0.516645	0.001567	0.392124	0.910336	3.033699	0.267373	2.411862	5.712934	2.078191	0.785182	3.32196	11.89827	4.080509	0.387127	2.635063	7.102699	2.078191	0.785182	3.32196	13.28803	68.31489	2.06487	24.55697	94.93673	0.157747	0.000693	0.002091	0.160531	0.749414	1712.299
7725.904	0.184136	0.001996	0	0.186132	1.204171	0.008805	0	1.212976	3.964345	0.042976	0	4.007321	0	0	0	4.007321	4.513144	0.048925	0	4.562068	0	0	0	4.562068	12.9396	0.356204	0	13.2958	0.072422	0.00053	0	0.072952	0.817277	687.7462
2698.944	0.043624	0.009935	0.050615	0.104174	0.061533	0.000238	0.060946	0.122716	0.220095	0.038167	0.263272	0.521534	0.225428	0.072579	0.347073	1.166613	0.319768	0.055682	0.28823	0.663679	0.225428	0.072579	0.347073	1.308758	5.165508	0.296216	3.599367	9.061091	0.026416	0.000114	0.000316	0.026845	0.117957	286.3432
3068.816	0.050071	0.000599	0	0.05067	0.477595	0.004212	0	0.481808	1.077995	0.012896	0	1.090891	0	0	0	1.090891	1.227226	0.014681	0	1.241907	0	0	0	1.241907	3.304506	0.106888	0	3.411394	0.028724	0.000253	0	0.028977	0.360113	273.1805
979.875	1.161076	0	0.394102	1.555179	0.224029	0	0.019681	0.243709	8.528268	0	3.08648	11.61475	3.93746	5.50129	5.659358	26.71286	9.804541	0	3.351522	13.15606	3.93746	5.50129	5.659358	28.25417	92.08905	0	13.40522	105.4943	0.008759	0	0.000987	0.009746	0.034686	103.9594
77110.16	2.279308	0	4.2875	6.566809	3.425787	0	1.388771	4.814558	11.62072	0	24.32094	35.94166	8.692969	3.153488	7.404898	55.19301	16.05477	0	26.62233	42.6771	8.692969	3.153488	7.404898	61.92845	420.7606	0	172.2575	593.0182	0.740065	0	0.026915	0.766981	4.48282	8180.965
502.3496	0.001382	0	0	0.001382	0.078869	0	0	0.078869	0.029757	0	0	0.029757	0	0	0	0.029757	0.033876	0	0	0.033876	0	0	0	0.033876	0.304446	0	0	0.304446	0.004743	0	0	0.004743	0.003343	44.71827
2153.84	0.06897	0	0.001008	0.069978	0.060663	0	0.000449	0.061113	0.422238	0	0.00623	0.428469	0.970252	0.378473	0.006685	1.783878	0.541537	0	0.006786	0.548323	0.970252	0.378473	0.006685	1.903732	13.27985	0	0.067884	13.34773	0.021417	0	5.94E-06	0.021423	0.048964	228.5106
331.9746	0.00198	0	0	0.00198	0.05212	0	0	0.05212	0.042638	0	0	0.042638	0	0	0	0.042638	0.04854	0	0	0.04854	0	0	0	0.04854	0.167027	0	0	0.167027	0.003135	0	0	0.003135	0.018292	29.55179
4888.498	0.166552	0.012794	0.111988	0.291334	0.178555	0.000309	0.03487	0.213733	0.992686	0.05877	0.830827	1.882283	0.312429	0.131281	0.686694	3.012686	1.340026	0.083401	0.904906	2.328332	0.312429	0.131281	0.686694	3.458736	25.71308	0.845166	8.732244	35.29049	0.047553	0.000331	0.000739	0.048624	0.113515	518.6428
14108	0.206356	0.01363	0	0.219986	2.101901	0.113072	0	2.214973	4.442795	0.293451	0	4.736246	0	0	0	4.736246	5.057783	0.334072	0	5.391855	0	0	0	5.391855	12.94425	2.595296	0	15.53955	0.126333	0.006796	0	0.133129	0.844992	1255.869
31.67012	0.01579	0.012071	0	0.027861	0.005838	0.000618	0	0.006456	0.000226	0.000172	0	0.000398	0	0	0	0.000398	0.016114	0.012319	0	0.028434	0.084692	0.012286	0	0.028434	0.084692	0.012286	0	0.096978	0	0	0	0	0.033153	3.660583
1708.044	0.028485	0.003354	0.016948	0.048786	0.043732	8.54E-05	0.010558	0.054375	0.145079	0.013264	0.10127	0.259614	0.041811	0.01509	0.049675	0.36619	0.206642	0.019266	0.110652	0.33656	0.041811	0.01509	0.049675	0.443137	3.713894	0.102445	1.720059	5.536398	0.016792	6.96E-05	0.000127	0.016989	0.04137	181.2141
1061.535	0.027266	0.001387	0	0.028653	0.161432	0.00523	0	0.166662	0.587036	0.029859	0	0.616895	0	0	0	0.616895	0.668296	0.033992	0	0.702288	0	0	0	0.702288	1.620726	0.169992	0	1.790718	0.009703	0.000314	0	0.010017	0.062633	94.49599
19.0804	0.010814	0.001276	0	0.012091	0.003824	6.56E-05	0	0.00389	0.000155	1.82E-05	0	0.000173	0	0	0	0.000173	0.011037	0.001303	0	0.012339	0	0	0	0.012339	0.054744	0.001299	0	0.056043	0	0	0	0	0.020709	2.205404
206.9723	0.010349	0.010809	0.001614	0.022772	0.010371	0.000365	0.000969	0.011705	0.057429	0.048697	0.009907	0.116033	0.01295	0.003887	0.010083	0.142953	0.081925	0.070971	0.010842	0.163738	0.01295	0.003887	0.010083	0.190659	1.400048	0.377944	0.256904	2.034896	0.001921	0.000126	1.22E-05	0.002059	0.009609	21.95862
663.9643	0.002928	0.000241	0	0.003169	0.095903	0.008341	0	0.104243	0.063036	0.005198	0	0.068234	0	0	0	0.068234	0.071762	0.005918	0	0.07768	0	0	0	0.07768	0.162652	0.055256	0	0.217908	0.005764	0.000501	0	0.006265	0.02611	59.10491
83.78277	0.223264	0.02849	0	0.251754	0.015624	0.001455	0	0.01708	0.00319	0.000407	0	0.003597	0	0	0	0.003597	0.227858	0.029076	0	0.256934	0	0	0	0.256934	0.807847	0.028996	0	0.836843	0	0	0	0	0.046629	9.684011
375.2113	0.001159	0	0.001168	0.002327	0.004293	0	0.000856	0.005149	0.004162	0	0.005028	0.00919	0.001956	0.000571	0.00103	0.012747	0.006073	0	0.005505	0.011578	0.001956	0.000571	0.00103	0.015135	0.105898	0	0.085858	0.191755	0.003723	0	9.32E-06	0.003732	0.0099	39.80786
616.7645	0.002199	0	0	0.002199	0.096833	0	0	0.096833	0.04734	0	0	0.04734	0	0	0	0.04734	0.053893	0	0	0.053893	0	0	0	0.053893	0.264181	0	0	0.264181	0.005824	0	0	0.005824	0.022667	54.90328
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1778.59	4.12805	0	0	4.12805	0.362577	0	0	0.362577	0.605606	0	0	0.605606	0	0	0	0.605606	4.835816	0	0	4.835816	0	0	0	4.835816	19.68983	0	0	19.68983	0	0	0	0	0.829015	205.5779
81.22392	0.020029	0	2.03E-07	0.020029	0.009749	0	0.000236	0.009985	0.16464	0	1.06E-06	0.164642	0.012636	0.006927	0.028035	0.21224	0.197477	0	1.16E-06	0.197478	0.012636	0.006927	0.028035	0.245077	6.213899	0	0.036917	6.250815	0.000779	0	2.44E-05	0.000804	0.000904	8.573445
70074.95	0.554141	0.081622	0	0.635763	10.45307	0.561737	0	11.01481	11.9305	1.757306	0	13.68781	0	0	0	13.68781	13.58197	2.000559	0	15.58253	0	0	0	15.58253	44.28766	13.8304	0	58.11806	0.628271	0.033763	0	0.662033	4.767779	6245.292
975.4621	1.991144	0.253885	0	2.24503	0.184202	0.014652	0	0.198854	0.084789	0.005708	0	0.090497	0	0	0	0.090497	2.096297	0.261479	0	2.357776	0	0	0	2.357776	8.867527	0.52965	0	9.397178	0	0	0	0	0.469948	112.7485
185609.7	4.759586	0	9.03797	13.79756	6.019516	0	2.987115	9.00663	22.68307	0	48.04354	70.7266	32.23661	11.15377	26.57224	140.6892	31.93418	0	52.58644	84.52063	32.23661	11.15377	26.57224	154.4832	964.5299	0	439.4259	1403.956	1.776865	0	0.059894	1.836758	15.05872	19591.69
1180.834	0.008418	0	0	0.008418	0.185611	0	0	0.185611	0.181232	0	0	0.181232	0	0	0	0.181232	0.206321	0	0	0.206321	0	0	0	0.206321	1.750385	0	0	1.750385	0.011163	0	0	0.011163	0.014522	105.2395
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
641.9077	0.002127	0	0.014496	0.016623	0.002664	0	0.007324	0.009988	0.006615	0	0.057936	0.064552	0.053126	0.01328	0.012563	0.143521	0.009653	0	0.063433	0.073086	0.053126	0.01328	0.012563	0.152055	0.999996	0	0.44429	1.444286	0.006112	0	0.00024	0.006352	0.042718	67.75541
21050.3	1.12984	0	1.413635	2.543475	1.216933	0	0.374135	1.591067	5.983775	0	8.133074	14.11685	7.071273	2.328955	6.404547	29.92162	8.168953	0	8.900998	17.06995	7.071273	2.328955	6.404547	32.87473	204.0066	0	80.90641	284.913	0.200511	0	0.007799	0.20831	1.891176	2221.926
29.74932	0.000705	0	0	0.000705	0.004676	0	0	0.004676	0.015173	0	0	0.015173	0	0	0	0.015173	0.017273	0	0	0.017273	0	0	0	0.017273	0.092773	0	0	0.092773	0.000281	0	0	0.000281	0.0002	2.651349
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86861.68	2.308595	0	4.169919	6.478515	3.587171	0	1.557906	5.145076	11.37031	0	22.54748	33.91779	11.81966	4.015238	9.747412	59.50011	15.86684	0	24.68215	40.54899	11.81966	4.015238	9.747412	66.1313	467.7772	0	202.8266	670.6038	0.830703	0	0.028863	0.859567	5.667943	9168.528
232.9444	0.001055	0	0	0.001055	0.036616	0	0	0.036616	0.022713	0	0	0.022713	0	0	0	0.022713	0.025857	0	0	0.025857	0	0	0	0.025857	0.138452	0	0	0.138452	0.002202	0	0	0.002202	0.002025	20.76071
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.439093	4.75E-06	0	3.15E-05	3.62E-05	5.97E-06	0	1.59E-05	2.19E-05	1.47E-05	0	0.000125	0.00014	0.000116	2.86E-05	2.8E-05	0.000313	2.15E-05	0	0.000137	0.000159	0.000116	2.86E-05	2.8E-05	0.000331	0.002223	0	0.000962	0.003185	1.36E-05	0	6.51E-07	1.42E-05	9.49E-05	0.151901
16144.15	0.465988	0.066227	0.400643	0.932859	0.485123	0.001569	0.397944	0.884635	2.699906	0.263267	2.261558	5.224731	2.046585	0.72801	3.181512	11.18084	3.660128	0.381816	2.471708	6.513652	2.046585	0.72801	3.181512	12.46976	60.78358	2.035209	24.06602	86.88481	0.157052	0.000681	0.002026	0.159759	0.76171	1704.067
8169.812	0.184914	0.002036	0	0.18695	1.275212	0.008969	0	1.284181	3.981082	0.043834	0	4.024916	0	0	0	4.024916	4.532197	0.049902	0	4.582099	0	0	0	4.582099	12.83846	0.363316	0	13.20177	0.076695	0.000539	0	0.077234	1.028672	728.1184
2723.663	0.041294	0.009969	0.05053	0.101793	0.059349	0.00024	0.061736	0.121326	0.207439	0.038155	0.261534	0.507127	0.234904	0.073597	0.349732	1.16536	0.301484	0.055665	0.286329	0.643479	0.234904	0.073597	0.349732	1.301711	4.944053	0.29604	3.600682	8.840776	0.026525	0.000113	0.000315	0.026953	0.120196	287.4913
3437.797	0.051776	0.000641	0	0.052417	0.535871	0.004502	0	0.540374	1.114705	0.013794	0	1.128499	0	0	0	1.128499	1.269018	0.015703	0	1.284721	0	0	0	1.284721	3.340401	0.114329	0	3.45473	0.032229	0.000271	0	0.0325	0.477582	306.3868
1030.029	1.162067	0	0.392109	1.554176	0.228568	0	0.0196	0.248169	8.441	0	3.049202	11.4902	3.973891	5.704572	5.877158	27.04582	9.744407	0	3.311397	13.0558	3.973891	5.704572	5.877158	28.61142	91.5651	0	13.71153	105.2766	0.009199	0	0.000994	0.010193	0.037293	108.7229
77782.99	2.137877	0	4.027953	6.16583	3.173724	0	1.320603	4.494327	10.99337	0	22.68686	33.68023	8.74716	3.121409	7.191173	52.73997	15.08996	0	24.83285	39.9228	8.74716	3.121409	7.191173	58.98255	398.7687	0	159.8855	558.6542	0.743413	0	0.026313	0.769726	4.351355	8210.244
898.9009	0.001934	0	0	0.001934	0.141295	0	0	0.141295	0.041631	0	0	0.041631	0	0	0	0.041631	0.047394	0	0	0.047394	0	0	0	0.047394	0.51272	0	0	0.51272	0.008498	0	0	0.008498	0.006066	80.11278
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
817.3618	0.002724	0	0.017784	0.020508	0.003435	0	0.009026	0.012461	0.008426	0	0.070691	0.079117	0.062768	0.016219	0.015366	0.17347	0.012295	0	0.077397	0.089693	0.062768	0.016219	0.015366	0.184046	1.275134	0	0.542171	1.817305	0.007798	0	0.000291	0.008089	0.066693	86.28126
22369.51	1.045442	0	1.314169	2.359611	1.159201	0	0.36002	1.519221	5.355306	0	7.43299	12.7883	6.755375	2.11752	5.937065	27.59826	7.415305	0	8.135692	15.551	6.755375	2.11752	5.937065	30.36096	192.322	0	73.90764	266.2296	0.213798	0	0.007582	0.22138	2.073035	2361.341
24.18365	0.000594	0	0	0.000594	0.003803	0	0	0.003803	0.012782	0	0	0.012782	0	0	0	0.012782	0.014552	0	0	0.014552	0	0	0	0.014552	0.08068	0	0	0.08068	0.000229	0	0	0.000229	0.000164	2.156375
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
88107.82	2.162334	0	3.869771	6.032105	3.401083	0	1.459457	4.86054	10.43669	0	20.61786	31.05455	11.49473	3.758821	9.215424	55.52352	14.65867	0	22.57061	37.22928	11.49473	3.758821	9.215424	61.69825	445.0698	0	185.1455	630.2153	0.844477	0	0.027483	0.87196	6.006468	9300.721
259.6161	0.000999	0	0	0.000999	0.040828	0	0	0.040828	0.021513	0	0	0.021513	0	0	0	0.021513	0.024491	0	0	0.024491	0	0	0	0.024491	0.139165	0	0	0.139165	0.002456	0	0	0.002456	0.002289	23.1491
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.596649	1.86E-05	0	0.000117	0.000136	2.36E-05	0	5.97E-05	8.33E-05	5.74E-05	0	0.000465	0.000522	0.00037	9.52E-05	9.87E-05	0.001086	8.37E-05	0	0.000509	0.000593	0.00037	9.52E-05	9.87E-05	0.001156	0.008668	0	0.003566	0.012234	5.3E-05	0	2.37E-06	5.54E-05	0.000664	0.590786

17309.17	0.438697	0.067401	0.392304	0.898401	0.481563	0.001619	0.417352	0.900535	2.479595	0.263706	2.159464	4.902765	2.052281	0.68993	3.113534	10.75851	3.398428	0.383007	2.360924	6.142359	2.052281	0.68993	3.113534	11.9981	56.56041	2.046384	24.3494	82.95619	0.168587	0.000682	0.002031	0.1713	0.841582	1827.168
9466.869	0.195421	0.002143	0	0.197564	1.479383	0.009405	0	1.488789	4.207305	0.046139	0	4.253445	0	0	0	4.253445	4.789737	0.052527	0	4.842264	0	0	0	4.842264	13.35235	0.382427	0	13.73478	0.088974	0.000566	0	0.08954	1.457185	844.1291
2680.617	0.040668	0.009563	0.049061	0.099292	0.059435	0.00023	0.059905	0.11957	0.203703	0.036545	0.253095	0.493343	0.240997	0.073201	0.351715	1.159255	0.296086	0.053318	0.277093	0.626497	0.240997	0.073201	0.351715	1.292409	4.843438	0.283877	3.402323	8.529639	0.026119	0.000109	0.000301	0.026529	0.118173	282.9678
3852.137	0.054634	0.000674	0	0.055308	0.601071	0.004728	0	0.605799	1.176232	0.014515	0	1.190747	0	0	0	1.190747	1.339062	0.016524	0	1.355586	0	0	0	1.355586	3.477533	0.120304	0	3.597837	0.03615	0.000284	0	0.036434	0.598407	343.4822
1085.454	1.17905	0	0.377963	1.557013	0.236586	0	0.018756	0.255342	8.445711	0	2.916259	11.36197	3.864176	5.726028	5.903971	26.85614	9.797057	0	3.167422	12.96448	3.864176	5.726028	5.903971	28.45865	92.09397	0	13.55949	105.6535	0.009778	0	0.000964	0.010742	0.040571	114.5812
74080.04	2.070937	0	3.761576	5.832513	3.102925	0	1.231106	4.334031	10.53794	0	21.12725	31.66518	8.731666	2.990603	7.082142	50.4696	14.52449	0	23.12638	37.65087	8.731666	2.990603	7.082142	56.45529	384.369	0	146.4913	530.8603	0.709164	0	0.02397	0.733134	4.448028	7819.939
1116.488	0.002177	0	0	0.002177	0.175582	0	0	0.175582	0.046877	0	0	0.046877	0	0	0	0.046877	0.053366	0	0	0.053366	0	0	0	0.053366	0.621715	0	0	0.621715	0.01056	0	0	0.01056	0.007634	99.55348
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19.80767	6.48E-05	0	0.000414	0.000478	8.24E-05	0	0.000211	0.000293	0.0002	0	0.001638	0.001837	0.001231	0.000321	0.000342	0.003731	0.000292	0	0.001793	0.002085	0.001231	0.000321	0.000342	0.003978	0.030474	0	0.012561	0.043035	0.000186	0	1.01E-05	0.000196	0.002739	2.090911
2073.52	0.039738	0	0.00064	0.040378	0.04857	0	0.000429	0.048999	0.208807	0	0.003322	0.212129	0.756363	0.243656	0.005026	1.217173	0.28777	0	0.003629	0.291398	0.756363	0.243656	0.005026	1.296443	6.440842	0	0.057181	6.498023	0.020516	0	4.47E-06	0.020521	0.048931	218.8822
371.9492	0.002086	0	0	0.002086	0.058494	0	0	0.058494	0.044918	0	0	0.044918	0	0	0	0.044918	0.051136	0	0	0.051136	0	0	0	0.051136	0.174656	0	0	0.174656	0.003518	0	0	0.003518	0.027696	33.16547
5769.092	0.150362	0.014225	0.101413	0.266	0.171608	0.000361	0.038496	0.210464	0.868217	0.061774	0.714514	1.644505	0.287302	0.106072	0.607922	2.6458	1.188741	0.088591	0.778866	2.056198	0.287302	0.106072	0.607922	3.057494	22.00094	0.89361	8.895695	31.79025	0.056033	0.000346	0.000715	0.057094	0.13702	608.9893
14869.49	0.177932	0.011764	0	0.189696	2.221162	0.117259	0	2.338421	3.830831	0.253268	0	4.084099	0	0	0	4.084099	4.36111	0.288327	0	4.649436	0	0	0	4.649436	11.24208	2.5401	0	13.78218	0.133501	0.007048	0	0.140548	1.212871	1325.863
44.05574	0.022429	0.017402	0	0.039831	0.008104	0.000877	0	0.008981	0.00032	0.000249	0	0.000569	0	0	0	0.000569	0.02289	0.01776	0	0.040651	0	0	0	0.040651	0.118924	0.017712	0	0.136636	0	0	0	0	0.046479	5.092171
1726.967	0.025539	0.00333	0.015697	0.044565	0.040092	8.62E-05	0.010512	0.050691	0.12836	0.012968	0.090768	0.232096	0.040314	0.013363	0.045904	0.331676	0.184053	0.018872	0.099229	0.302154	0.040314	0.013363	0.045904	0.401734	3.187122	0.100271	1.637879	4.925272	0.016903	6.77E-05	0.00012	0.017091	0.041948	182.2998
1116.407	0.024768	0.001229	0	0.025997	0.170365	0.005205	0	0.17557	0.533247	0.026465	0	0.559712	0.607062	0.030128	0	0.559712	0.607062	0.030128	0	0.63719	0	0	0	0.63719	1.461467	0.16886	0	1.630327	0.01024	0.000313	0	0.010552	0.085999	99.54634
24.843	0.014525	0.001832	0	0.016357	0.004971	9.31E-05	0	0.005064	0.000208	2.62E-05	0	0.000234	0	0	0	0.000234	0.014824	0.00187	0	0.016694	0	0	0	0.016694	0.071703	0.001865	0	0.073567	0	0	0	0	0.026864	2.871472
310.6073	0.04359	0.013555	0.003867	0.061012	0.023304	0.000428	0.001158	0.02489	0.299579	0.064689	0.027909	0.392178	0.033654	0.013852	0.027438	0.467122	0.377853	0.092084	0.030394	0.50033	0.033654	0.013852	0.027438	0.575274	7.205763	0.493444	0.339279	8.038485	0.00289	0.000167	1.75E-05	0.003074	0.012562	32.78792
683.1108	0.003007	0.00025	0	0.003256	0.098698	0.00873	0	0.107428	0.06473	0.005372	0	0.070102	0	0	0	0.070102	0.07369	0.006116	0	0.079806	0	0	0	0.079806	0.167646	0.065387	0	0.233033	0.005932	0.000525	0	0.006457	0.033547	60.91072
105.7618	0.284355	0.035355	0	0.31971	0.019773	0.001787	0	0.02156	0.004063	0.000505	0	0.004568	0	0	0	0.004568	0.290205	0.036082	0	0.326287	0	0	0	0.326287	1.026815	0.035984	0	1.062798	0	0	0	0	0.060371	12.22445
427.8302	0.001254	0	0.001392	0.002646	0.004546	0	0.001138	0.005684	0.004357	0	0.005893	0.010249	0.002479	0.000743	0.001315	0.014786	0.006357	0	0.006452	0.012809	0.002479	0.000743	0.001315	0.017346	0.134764	0	0.106191	0.240955	0.004223	0	1.09E-05	0.004234	0.012314	45.16204
719.6003	0.002583	0	0	0.002583	0.113167	0	0	0.113167	0.055619	0	0	0.055619	0	0	0	0.055619	0.063318	0	0	0.063318	0	0	0	0.063318	0.251847	0	0	0.251847	0.006806	0	0	0.006806	0.045407	64.16436
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1829.907	3.270166	0	0	3.270166	0.373039	0	0	0.373039	0.417667	0	0	0.417667	0	0	0	0.417667	3.760054	0	0	3.760054	0	0	0	3.760054	20.20839	0	0	20.20839	0	0	0	0	0.849578	211.5093
63.27939	0.014612	0	0	0.014612	0.007217	0	0.000193	0.00741	0.117488	0	0	0.117488	0	0	0	0.117488	0.008826	0.00438	0.0198	0.150494	0.143977	0	0	0.143977	0.008826	0.00438	0.0198	0.176983	4.189061	0	0.028733	4.217794	0.000611	0	1.54E-05	0.000626	0.000781	6.676377
77600.54	0.381821	0.084628	0	0.466449	11.55161	0.653183	0	12.2048	8.2205	1.822027	0	10.04253	0	0	0	10.04253	9.358414	2.074239	0	11.43265	0	0	0	11.43265	30.70892	18.334	0	49.04292	0.694298	0.039259	0	0.733556	6.700694	6920.005
1313.307	2.608616	0.353921	0	2.962537	0.247804	0.019922	0	0.267726	0.090185	0.006883	0	0.097068	0	0	0	0.097068	2.722569	0.363283	0	3.085852	0	0	0	3.085852	12.34641	0.718149	0	13.06456	0	0	0	0	0.674471	151.7983
187004	3.497513	0	7.732125	11.22964	4.837729	0	2.820437	7.658167	15.69272	0	39.40267	55.09539	28.74842	9.129969	22.06949	115.0433	22.47326	0	43.13553	65.60878	28.74842	9.129969	22.06949	125.5567	776.5	0	363.9603	1140.46	1.792438	0	0.057297	1.849734	16.68971	19730.11
632.0894	0.005908	0	0	0.005908	0.099413	0	0	0.099413	0.127193	0	0	0.127193	0	0	0	0.127193	0.1448	0	0	0.1448	0	0	0	0.1448	1.190258	0	0	1.190258	0.005979	0	0	0.005979	0.007651	56.36638
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1129.65	0.003737	0	0.025513	0.029251	0.004694	0	0.012888	0.017582	0.011619	0	0.101952	0.113571	0.086194	0.0232	0.022099	0.245065	0.016954	0	0.111625	0.128579	0.086194	0.0232	0.022099	0.260072	1.758736	0	0.78199	2.540726	0.010757	0	0.000417	0.011174	0.114866	119.1853
21201.18	0.906102	0	1.249288	2.15539	1.029784	0	0.353585	1.383369	4.573556	0	7.026554	11.60011	6.652133	2.012467	5.66458	25.92929	6.388539	0	7.691332	14.07987	6.652133	2.012467	5.66458	28.40905	169.3422	0	69.24847	238.5907	0.202268	0	0.007441	0.20971	1.980033	2236.859
24.95794	0.000585	0	0	0.000585	0.003925	0	0	0.003925	0.012599	0	0	0.012599	0	0	0	0.012599	0.014344	0	0	0.014344	0	0	0	0.014344	0.077539	0	0	0.077539	0.000236	0	0	0.000236	0.000168	2.225617
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.170578	5.66E-07	0	3.7E-06	4.27E-06	7.17E-07	0	1.87E-06	2.59E-06	1.75E-06	0	1.47E-05	1.65E-05	1.06E-05	2.84E-06	2.93E-06	3.29E-05	2.56E-06	0	1.61E-05	1.87E-05	1.06E-05	2.84E-06	2.93E-06	3.51E-05	0.000264	0	0.000113	0.000378	1.62E-06	0	6.79E-08	1.69E-06	2.38E-05	0.017997
90897.13	1.859319	0	3.798349	5.657668	3.026227	0	1.477196	4.503423	8.717504	0	19.89533	28.61283	11.68811	3.65364	9.042443	52.99702	12.37305	0	21.78073	34.15378	11.68811	3.65364	9.042443	58.53797	400.6957	0	179.2569	579.9526	0.870229	0	0.028873	0.899101	6.570665	9590.224
270.0594	0.00105	0	0	0.00105	0.042474	0	0	0.042474	0.022614	0	0	0.022614	0	0	0	0.022614	0.025745	0	0	0.025745	0	0	0	0.025745	0.15054	0	0	0.15054	0.002555	0	0	0.002555	0.002409	24.08247
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6.296713	2.06E-05	0	0.000141	0.000162	2.6E-05	0	7.12E-05	9.72E-05	6.42E-05	0	0.000564	0.000629	0.000446	0.000115	0.00012	0.001309	9.36E-05	0	0.000618	0.000712	0.000446	0.000115	0.00012	0.001392	0.009708	0	0.004332	0.01404	5.94E-05	0	2.87E-06	6.23E-05	0.000758	0.664343
18544.73	0.378207	0.074548	0.397436	0.85019	0.437289	0.001822	0.474105	0.913217	2.081041	0.287307	2.114575	4.482923	2.092007	0.660293	3.088185	10.32341	2.8898	0.418055	2.313263	5.621118	2.092007	0.660293	3.088185	11.4616	48.60082	2.247447	27.33847	78.18674	0.180436	0.000744	0.002253	0.183434	0.938168	1956.586
9590.174	0.18218	0.002222	0	0.184403	1.498615	0.009701	0	1.508316	3.922234	0.047844	0	3.970078	0	0	0	3.970078	4.465203	0.054467	0	4.51967	0	0	0	4.51967	12.28621	0.396557	0	12.68277	0.090131	0.000583	0	0.090714	1.698606	855.2009
2881.962	0.038185	0.01076	0.052814	0.101758	0.056434	0.000263	0.067696	0.124393	0.191126	0.040828	0.270876	0.50283	0.261409	0.076594	0.371368	1.212201	0.277232	0.059562	0.296553	0.633348	0.261409	0.076594	0.371368	1.342719	4.762215	0.318602	3.882	8.962817	0.028049	0.000121	0.000336	0.028507	0.131109	304.0653
3962.839	0.052283	0.000718	0	0.053	0.618258	0.005006	0	0.623264	1.125617	0.01545	0	1.141067	0	0	0	1.141067	1.28144	0.017589	0	1.299029	0	0	0	1.299029	3.270298	0.128057	0	3.398356	0.037184	0.000301	0	0.037485	0.685372	353.385
1008.312	1.051769	0	0.359637	1.411406	0.214436	0	0.017643	0.232079	7.473284	0	2.772196	10.24548	3.738178	5.629589	5.822696	25.43594	8.70482	0	3.011216	11.71604	3.738178	5.629589	5.822696	26.9065	81.92463	0	13.22077	95.14539	0.009051	0	0.000922	0.009974	0.038183	106.3834
81709.61	1.841454	0	3.769221	5.610675	2.82497	0	1.277289	4.10226	9.180225	0	20.83981	30.02003	9.382779	3.050858	7.321215	49.77489	12.74535	0	22.81278	35.55813	9.382779	3.050858	7.321215	55.31298	358.3166	0	147.2315	505.5481	0.781452	0	0.026772	0.808224	4.973637	8620.883
1024.366	0.002032	0	0	0.002032	0.161109	0	0	0.161109	0.043737	0	0	0.043737	0	0	0	0.043737	0.049792	0	0	0.049792	0	0	0	0.049792	0.592734	0	0	0.592734	0.00969	0	0	0.00969	0.007039	91.34751
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40.94153	0.000132	0	0.000902	0.001034	0.000168	0	0.000456	0.000623	0.00041	0	0.003596	0.004006	0.002698	0.000703	0.00075	0.008157	0.000599	0	0.003937	0.004535	0.002698	0.000703	0.00075	0.008687	0.06272	0	0.02759	0.090311	0.000383	0	2.2E-05	0.000405	0.005657	4.319591
2038.236	0.04407	0	0.000729	0.044799	0.046968	0	0.000447	0.047415	0.248078	0	0.004069	0.252147	0.800844	0.268074	0.005223	1.326288	0.331321	0	0.004438	0.335759	0.800844	0.268074	0.005223	1.4099	7.577258	0	0.057178	7.634436	0.020156	0	4.74E-06	0.020161	0.047465	215.0468
382.1523	0.002044	0	0	0.002044	0.060104	0	0	0.060104	0.044014	0	0	0.044014	0	0	0	0.044014	0.050107	0	0	0.050107	0	0	0	0.050107	0.168728	0	0	0.168728	0.003615	0	0	0.003615	0.034733	34.07832
5483.064	0.131604	0.014371	0.095738	0.241714	0.154323	0.000367	0.038431	0.193122	0.749869	0.06185	0.666245	1.477964	0.282747	0.097126	0.590029	2.447866	1.036645	0.089088	0.726539	1.852272	0.282747	0.097126	0.590029	2.822173	18.69249	0.897677	8.907244	28.49741	0.053197	0.000346	0.000692	0.054235	0.131472	578.4981
15588.24	0.163884	0.011036	0	0.17492	2.333043	0.118632	0	2.451675	3.528381	0.237597	0	3.765978	0	0	0	3.765978	4.016794	0.270486	0	4.28728	0	0	0	4.28728	10.39891	2.538731	0	12.93764	0.140225	0.00713	0	0.147355	1.449165	1390.077
73.18688	0.040576	0.02669	0	0.067266	0.013551	0.001369	0	0.01492	0.00058	0.000381	0	0.000961	0	0	0	0.000961	0.041411	0.027239	0	0.06865	0	0	0	0.06865	0.197604	0.030318	0	0.227921	0	0	0	0	0.077291	8.459287
1733.823	0.024444	0.003606	0.017082	0.045132	0.038568	9.35E-05	0.011393	0.050055	0.123806	0.014102	0.100026	0.237935	0.04551	0.014783	0.050698	0.348926	0.177123	0.020521	0.10933	0.306975	0.04551	0.014783	0.050698	0.417965	3.042298	0.109017	1.756081	4.907396	0.016946	7.34E-05	0.00013	0.01715	0.042184	182.9294
1179.839	0.02461	0.001261	0	0.02587	0.179903	0.005659	0	0.185562	0.529838	0.027139	0	0.556977	0	0	0	0.556977	0.603181	0.030895	0	0.634076	0	0	0	0.634076	1.444461	0.185365	0	1.629827	0.010813	0.00034	0	0.011153	0.096666	105.2118
29.14252	0.017009	0.002161	0	0.019169	0.005831	0.00011	0	0.005941	0.000243	3.09E-05	0	0.000274	0	0	0	0.000274	0.017358	0.002205	0	0.019564	0	0	0	0.019564	0.084235	0.002247	0	0.086482	0	0	0	0	0.032147	3.368431
288.9101	0.027524	0.01378	0.003032	0.044336	0.018233	0.00045	0.001226	0.019909	0.177786	0.063535	0.020797	0.262117	0.024944	0.008957	0.019991	0.316009	0.233427	0.091668	0.022682	0.347777	0.024944	0.008957	0.019991	0.401669	4.192359	0.489393	0.329019	5.010771	0.002679	0.000162	1.64E-05	0.002858	0.012676	30.48185
679.6446	0.002767	0.000214	0	0.00298	0.098951	0.007942	0	0.106893	0.059564	0.004602	0	0.064166	0	0	0	0.064166	0.067809	0.005239	0	0.073048	0	0	0	0.073048	0.156768	0.066952	0	0.22372	0.005947	0.000477	0	0.006425	0.042303	60.60711
152.3263	0.405667	0.049067	0	0.454734	0.028505	0.002548	0	0.031053	0.005796	0.000701	0	0.006497	0	0	0	0.006497	0.414013	0.050076	0	0.464089	0	0	0	0.464089	1.454464	0.055176	0	1.50964	0	0	0	0	0.087487	17.6066
404.3749	0.001126	0	0.00131	0.002436	0.004163	0	0.00109	0.005253	0.003833	0	0.005508	0.009341	0.00243	0.000725	0.001321	0.013818	0.005593	0	0.006031	0.011624	0.00243	0.000725	0.001321	0.0161	0.126843	0	0.101578	0.22842	0.003989	0	1.04E-05	0.004	0.011988	42.66412
649.2528	0.002289	0	0	0.002289	0.102113	0	0	0.102113	0.049282	0	0	0.049282	0	0	0	0.049282	0.056104	0	0	0.056104	0	0	0	0.056104	0.19844	0	0	0.19844	0.006141	0	0	0.006141	0.049347	57.89692
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1911.333	2.867791	0	0	2.867791	0.389638	0	0	0.389638	0.319802	0	0	0.319802	0	0	0	0.319802	3.244446	0	0	3.244446	0	0	0	3.244446	21.40051	0	0	21.40051	0	0	0	0	0.862111	220.921
56.97072	0.013277	0	5.25E-07	0.013277	0.006328	0	0.000193	0.00652	0.107326	0	2.78E-06	0.107329	0.007648	0.003556	0.017372	0.135905	0.132008	0	3.05E-06	0.132011	0.007648	0.003556	0.017372	0.160587	3.528576	0	0.032432	3.561008	0.000552	0	1.24E-05	0.000564	0.000742	6.618337
76193.7	0.312099	0.089151	0	0.40125	11.28536	0.702294	0	11.98766	6.719401	1.919402	0	8.638803	0	0	0	8.638803	7.649526	2.185094	0	9.83462	0	0	0	9.83462	25.12771	20.9879	0	46.11561	0.678295	0.042211	0	0.720506	7.060009	6796.89
1391.711	2.506814	0.392042	0	2.898857	0.26112	0.022589	0	0.283709	0.083947	0.007383	0	0.09133	0	0	0	0.09133	2.613223	0.402138	0	3.015361	0	0	0	3.015361	12.21324	0.837264	0	13.0505	0	0	0	0	0.730866	160.8606
183289.2	2.989642	0	7.163479	10.15312	4.319408	0	2.717924	7.037332	13.05542	0	35.88759	48.94302	27.46539	8.566611	20.63653	105.6115	18.83547	0	39.28939	58.12487	27.46539	8.566611	20.63653	114.7934	696.3981	0	334.0523	1030.45	1.759514	0	0.055758	1.815272	17.08415	19362.52
543.2866	0.005054	0	0	0.005054	0.085476	0	0	0.085476	0.108808	0	0	0.108808	0	0	0	0.108808	0.123871	0	0	0.123871	0	0	0	0.123871	1.038395	0	0	1.038395	0.005141	0	0	0.005141	0.006611	48.4641
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1422.704	0.004698	0	0.03247	0.037168	0.005906	0	0.016386	0.022292	0.014619	0	0.12989	0.144509	0.104211	0.029811	0.027841	0.306372	0.021332	0	0.142213	0.163545	0.104211	0.029811	0.027841	0.325408	2.215335	0	0.996331	3.211666	0.013562	0	0.000529	0.01409	0.1598	150.2932
20539.74	0.774521	0	1.152297	1.926818	0.922555	0	0.337197	1.259751	3.756215	0	6.405102	10.16132	6.334963	1.834288	5.28397	23.61454	5.354413	0	7.011896	12.36631	6.334963	1.834288	5.28397	25.81953	149.2804	0	63.00162	212.282	0.196297	0	0.007125	0.203423	1.9488	2169.801
23.13822	0.00054	0	0	0.00054	0.00364	0	0	0.00364	0.011623	0	0	0.011623	0	0	0	0.011623	0.013232	0	0	0.013232	0	0	0	0.013232	0.071324	0	0	0.071324	0.000219	0	0	0.000219	0.000156	2.064054
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.169657	5.59E-07	0	3.81E-06	4.37E-06	7.08E-07	0	1.92E-06	2.63E-06	1.74E-06	0	1.52E-05	1.69E-05	1.09E-05	2.92E-06	3.02E-06	3.38E-05	2.53E-06	0	1.66E-05	1.92E-05	1.09E-05	2.92E-06	3.02E-06	3.61E-05	0.000263	0	0.000117	0.000379	1.61E-06	0	7E-08	1.68E-06	2.37E-05	0.017922
92281.5	1.637495	0	3.615207	5.252703	2.741334	0	1.435951	4.177285	7.459598	0	18.61194	26.07154	11.50583	3.487298	8.728412	49.79308	10.68597	0	20.37646	31.06243	11.50583	3.487298	8.728412	54.78397	366.9226	0	168.3291	535.2517	0.885003	0	0.02894	0.913944	7.050929	9748.538
296.7089	0.001046	0	0	0.001046	0.046682	0	0	0.046682	0.022524	0	0	0.022524	0

17.85027	5.88E-05	0	0.000393	0.000452	7.42E-05	0	0.000199	0.000273	0.000182	0	0.001568	0.00175	0.001053	0.000291	0.000298	0.003392	0.000266	0	0.001717	0.001983	0.001053	0.000291	0.000298	0.003624	0.027601	0	0.012032	0.039634	0.000169	0	7.87E-06	0.000177	0.002376	1.885687
18592.33	0.322085	0.075335	0.383131	0.78055	0.395524	0.001863	0.485435	0.882822	1.714089	0.287142	1.997589	3.99882	2.003908	0.603545	2.915581	9.521854	2.423272	0.418366	2.185979	5.027617	2.003908	0.603545	2.915581	10.55065	41.25799	2.269998	27.76879	71.29678	0.181081	0.000746	0.002309	0.184136	0.96332	1964.078
9617.002	0.173924	0.002237	0	0.176161	1.503358	0.009698	0	1.513056	3.744487	0.048153	0	3.79264	0	0	0	3.79264	4.262849	0.054819	0	4.317668	0	0	0	4.317668	11.62473	0.399117	0	12.02384	0.090416	0.000583	0	0.090999	1.859183	857.8886
2882.682	0.03467	0.010901	0.052185	0.097756	0.052239	0.000269	0.069053	0.121562	0.172496	0.041121	0.265838	0.479455	0.257931	0.074071	0.361628	1.173085	0.250662	0.059995	0.291044	0.601701	0.257931	0.074071	0.361628	1.295331	4.434203	0.323544	3.945865	8.703612	0.028088	0.000123	0.000339	0.02855	0.133776	304.524
4044.931	0.050651	0.000737	0	0.051388	0.63129	0.005104	0	0.636395	1.090479	0.015872	0	1.106351	0	0	0	1.106351	1.241437	0.018069	0	1.259507	0	0	0	1.259507	3.125554	0.131557	0	3.257112	0.037968	0.000307	0	0.038274	0.757534	360.8297
971.0301	0.978764	0	0.338117	1.316881	0.203133	0	0.016431	0.219564	6.880133	0	2.593689	9.473821	3.559996	5.486396	5.683291	24.2035	8.049924	0	2.817654	10.86758	3.559996	5.486396	5.683291	25.59726	75.86466	0	12.76201	88.62667	0.008744	0	0.000873	0.009617	0.03751	102.5788
82066.66	1.660282	0	3.589188	5.24947	2.598711	0	1.238157	3.836868	8.144222	0	19.64832	27.79255	9.473401	2.969635	7.277368	47.51295	11.37215	0	21.50915	32.8813	9.473401	2.969635	7.277368	52.60171	331.92	0	139.3939	471.3139	0.78606	0	0.026717	0.812777	5.226903	8669.452
1080.535	0.002031	0	0	0.002031	0.170002	0	0	0.170002	0.043727	0	0	0.043727	0	0	0	0.043727	0.049781	0	0	0.049781	0	0	0	0.049781	0.615059	0	0	0.615059	0.010224	0	0	0.010224	0.007524	96.38955
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86.53311	0.000279	0	0.001917	0.002196	0.000354	0	0.000969	0.001323	0.000867	0	0.007648	0.008515	0.005213	0.001422	0.00148	0.01663	0.001265	0	0.008374	0.009639	0.005213	0.001422	0.00148	0.017754	0.132612	0	0.05869	0.191303	0.00081	0	4.66E-05	0.000857	0.011986	9.141283
2036.482	0.036268	0	0.00061	0.036879	0.042638	0	0.000461	0.0431	0.194112	0	0.003104	0.197216	0.73645	0.235016	0.004745	1.173428	0.26557	0	0.003391	0.268961	0.73645	0.235016	0.004745	1.245172	5.87586	0	0.054036	5.929896	0.020165	0	4.44E-06	0.020169	0.047939	215.1322
401.4293	0.00205	0	0	0.00205	0.063157	0	0	0.063157	0.044126	0	0	0.044126	0	0	0	0.044126	0.050234	0	0	0.050234	0	0	0	0.050234	0.16699	0	0	0.16699	0.003798	0	0	0.003798	0.041869	35.80966
5353.419	0.115403	0.014318	0.08238	0.212101	0.138524	0.000371	0.037801	0.176696	0.646534	0.060671	0.54146	1.248665	0.264196	0.086271	0.54676	2.145892	0.902377	0.087707	0.591102	1.581186	0.264196	0.086271	0.54676	2.478413	15.93552	0.882948	8.530016	25.34848	0.052028	0.000338	0.000654	0.05302	0.129705	565.5305
15192.82	0.141971	0.009905	0	0.151876	2.272176	0.118131	0	2.390307	3.056607	0.213246	0	3.269853	0	0	0	3.269853	3.479714	0.242764	0	3.722479	0	0	0	3.722479	9.098636	2.470842	0	11.56948	0.136567	0.0071	0	0.143667	1.550326	1355.281
97.88179	0.057468	0.03363	0	0.091098	0.018112	0.001841	0	0.019954	0.000821	0.000481	0	0.001302	0	0	0	0.001302	0.05865	0.034322	0	0.092972	0	0	0	0.092972	0.258852	0.046264	0	0.305116	0	0	0	0	0.101499	11.31364
1598.185	0.020395	0.003434	0.015228	0.039057	0.032361	9E-05	0.010846	0.043298	0.103352	0.013344	0.086728	0.203424	0.043722	0.01381	0.04864	0.309596	0.14816	0.019429	0.094833	0.262422	0.043722	0.01381	0.04864	0.368594	2.517052	0.103194	1.59297	4.213216	0.015638	6.92E-05	0.000121	0.015828	0.039136	168.8309
1155.34	0.022277	0.001121	0	0.023398	0.176134	0.005638	0	0.181771	0.47962	0.024143	0	0.503763	0	0	0	0.503763	0.546011	0.027485	0	0.573495	0	0	0	0.573495	1.285197	0.18513	0	1.470327	0.010586	0.000339	0	0.010925	0.102573	103.0626
32.45813	0.019476	0.002456	0	0.021932	0.006489	0.000127	0	0.006617	0.000278	3.51E-05	0	0.000313	0	0	0	0.000313	0.019877	0.002506	0	0.022383	0	0	0	0.022383	0.094392	0.00276	0	0.097152	0	0	0	0	0.035663	3.751665
375.5573	0.038256	0.017776	0.003715	0.059748	0.023256	0.000587	0.001601	0.025444	0.252541	0.081963	0.025424	0.359928	0.031805	0.012206	0.025255	0.429193	0.32844	0.11797	0.027724	0.474133	0.031805	0.012206	0.025255	0.543399	5.780917	0.629732	0.392313	6.802962	0.003491	0.000208	2.06E-05	0.003719	0.016332	39.67355
640.0771	0.002321	0.0002	0	0.002521	0.092801	0.007904	0	0.100704	0.049977	0.0043	0	0.054277	0	0	0	0.054277	0.056894	0.004895	0	0.06179	0	0	0	0.06179	0.133562	0.074893	0	0.208455	0.005578	0.000475	0	0.006053	0.047751	57.09834
176.5786	0.454214	0.05941	0	0.513624	0.032827	0.00317	0	0.035997	0.00649	0.000849	0	0.007339	0	0	0	0.007339	0.463559	0.060632	0	0.524191	0	0	0	0.524191	1.60292	0.072873	0	1.675793	0	0	0	0	0.103655	20.4098
409.269	0.001142	0	0.001291	0.002433	0.004202	0	0.001051	0.005252	0.003873	0	0.005444	0.009317	0.002344	0.000713	0.001323	0.013697	0.005651	0	0.005961	0.011612	0.002344	0.000713	0.001323	0.015992	0.123238	0	0.099606	0.222844	0.004043	0	1.02E-05	0.004053	0.011731	43.23482
633.619	0.002147	0	0	0.002147	0.099688	0	0	0.099688	0.046224	0	0	0.046224	0	0	0	0.046224	0.052622	0	0	0.052622	0	0	0	0.052622	0.158671	0	0	0.158671	0.005996	0	0	0	0.005996	0.058964	56.52224
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962.645	2.665761	0	0	2.665761	0.400098	0	0	0.400098	0.271439	0	0	0.271439	0	0	0	0.271439	2.986422	0	0	2.986422	0	0	0	2.986422	22.68464	0	0	22.68464	0	0	0	0	0.884776	226.8518
50.02747	0.011396	0	0	0.011396	0.006126	0	0.000265	0.006391	0.088683	0	0	0.088683	0.007288	0.003026	0.01664	0.115637	0.112048	0	0	0.112048	0.007288	0.003026	0.01664	0.139002	3.08077	0	0.030893	3.111662	0.000485	0	1.03E-05	0.000495	0.000656	5.280453
76348.36	0.251436	0.087548	0	0.338984	11.318	0.699895	0	12.0179	5.413354	1.884878	0	7.298232	0	0	0	7.298232	6.162692	2.14579	0	8.308482	0	0	0	8.308482	20.45875	21.81188	0	42.27063	0.680257	0.042066	0	0.722323	7.546804	6814.036
1482.873	2.486156	0.401489	0	2.887645	0.278066	0.024227	0	0.302293	0.079581	0.007402	0	0.086982	0	0	0	0.086982	2.587502	0.411646	0	2.999148	0	0	0	2.999148	12.48259	0.902997	0	13.38559	0	0	0	0	0.794464	171.3975
179577.8	2.550267	0	6.639391	9.189658	3.875293	0	2.618644	6.493936	10.74521	0	32.66509	43.4103	26.08354	7.940805	19.30235	96.73699	15.66226	0	35.76367	51.42593	26.08354	7.940805	19.30235	104.7526	626.6044	0	306.1798	932.7842	1.722902	0	0.05413	1.777032	17.35628	18954.62
545.0605	0.004385	0	0	0.004385	0.085797	0	0	0.085797	0.094408	0	0	0.094408	0	0	0	0.094408	0.107477	0	0	0.107477	0	0	0	0.107477	0.958072	0	0	0.958072	0.00516	0	0	0.00516	0.006732	48.64625
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1630.614	0.005353	0	0.037976	0.04333	0.006723	0	0.019117	0.02584	0.016704	0	0.152336	0.16904	0.118196	0.035498	0.032302	0.355037	0.024374	0	0.166789	0.191163	0.118196	0.035498	0.032302	0.37716	2.533859	0	1.168572	3.702431	0.015518	0	0.000618	0.016136	0.191784	172.1131
20481.26	0.777967	0	1.222216	2.000183	0.957863	0	0.352349	1.310212	3.65109	0	6.823383	10.47447	7.098362	1.964428	5.867841	25.4051	5.302522	0	7.470485	12.77301	7.098362	1.964428	5.867841	27.70364	151.2402	0	66.39556	217.6357	0.195381	0	0.007293	0.202675	2.009073	2161.819
8.179199	0.000281	0	0	0.000281	0.001287	0	0	0.001287	0.006044	0	0	0.006044	0	0	0	0.006044	0.006881	0	0	0.006881	0	0	0	0.006881	0.0348	0	0	0.0348	7.74E-05	0	0	7.74E-05	5.92E-05	0.729988
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.108355	3.55E-07	0	2.51E-06	2.87E-06	4.49E-07	0	1.26E-06	1.71E-06	1.11E-06	0	1.01E-05	1.12E-05	7.18E-06	1.93E-06	1.99E-06	2.23E-05	1.62E-06	0	1.1E-05	1.26E-05	7.18E-06	1.93E-06	1.99E-06	2.37E-05	0.000167	0	7.75E-05	0.000244	1.03E-06	0	4.62E-08	1.07E-06	1.51E-05	0.011437
95601.71	1.337499	0	3.360384	4.697882	2.374117	0	1.392786	3.766903	5.787516	0	16.73886	22.52638	10.58233	3.155898	7.811752	44.07636	8.38707	0	18.32643	26.7135	10.58233	3.155898	7.811752	48.26348	323.9259	0	152.6183	476.5442	0.916763	0	0.029275	0.946037	7.698694	10090.86
263.3738	0.000797	0	0	0.000797	0.041457	0	0	0.041457	0.017163	0	0	0.017163	0	0	0	0.017163	0.019539	0	0	0.019539	0	0	0	0.019539	0.135826	0	0	0.135826	0.002493	0	0	0.002493	0.002378	23.50592
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61.96225	0.000204	0	0.001374	0.001578	0.000257	0	0.000695	0.000952	0.000634	0	0.005482	0.006116	0.003435	0.000989	0.000979	0.011518	0.000925	0	0.006002	0.006927	0.003435	0.000989	0.000979	0.012329	0.095828	0	0.042061	0.137889	0.000586	0	2.67E-05	0.000613	0.008524	6.540182
18794.88	0.308156	0.078044	0.389606	0.775807	0.390347	0.001928	0.501473	0.893748	1.609368	0.297446	2.018997	3.92581	2.148839	0.615483	3.07396	9.764093	2.306336	0.433671	2.209882	4.949889	2.148839	0.615483	3.07396	10.78817	39.45307	2.366897	28.54022	70.36019	0.182816	0.000776	0.002395	0.185987	0.970833	1983.82
9504.502	0.165387	0.002235	0	0.167622	1.486471	0.009621	0	1.496092	3.56068	0.048119	0	3.608799	0	0	0	3.608799	4.053597	0.05478	0	4.108378	0	0	0	4.108378	11.05458	0.398836	0	11.45342	0.0894	0.000579	0	0.089979	1.962251	848.2699
2965.664	0.030849	0.011229	0.052097	0.094175	0.048804	0.00028	0.071434	0.120518	0.150965	0.042024	0.262811	0.4558	0.263053	0.07269	0.363579	1.155122	0.220258	0.061321	0.287745	0.569324	0.263053	0.07269	0.363579	1.268645	4.085076	0.33564	4.088658	8.509374	0.028872	0.000126	0.000349	0.029347	0.140671	313.029
4298.389	0.050089	0.000781	0	0.050871	0.671248	0.005356	0	0.676604	1.078397	0.016815	0	1.095212	0	0	0	1.095212	1.227683	0.019143	0	1.246826	0	0	0	1.246826	3.029853	0.139373	0	3.169226	0.040371	0.000322	0	0.040693	0.874907	383.6281
953.6378	0.932884	0	0.32603	1.258914	0.196453	0	0.015699	0.212151	6.497659	0	2.490966	8.988625	3.485586	5.452578	5.661227	23.58802	7.632684	0	2.70635	10.33903	3.485586	5.452578	5.661227	24.93843	72.03001	0	12.59751	84.62752	0.00859	0	0.000847	0.009437	0.037326	100.6575
79709.82	1.459766	0	3.290039	4.749805	2.306935	0	1.158509	3.465443	7.090411	0	17.82337	24.91378	9.355532	2.810224	7.104377	44.18391	9.929283	0	19.51164	29.44092	9.355532	2.810224	7.104377	48.71105	300.641	0	127.9826	428.6235	0.763095	0	0.025682	0.788777	5.264663	8413.456
1274.317	0.002556	0	0	0.002556	0.200589	0	0	0.200589	0.055025	0	0	0.055025	0	0	0	0.055025	0.062642	0	0	0.062642	0	0	0	0.062642	0.789307	0	0	0.789307	0.012064	0	0	0.012064	0.008889	113.7319
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99.78077	0.000319	0	0.002259	0.002578	0.000406	0	0.001139	0.001544	0.000994	0	0.009036	0.010029	0.00603	0.00166	0.001713	0.019433	0.00145	0	0.009893	0.011343	0.00603	0.00166	0.001713	0.020747	0.152594	0	0.069344	0.221938	0.000933	0	5.47E-05	0.000987	0.013824	10.53197
1978.143	0.030516	0	0.000546	0.031061	0.038411	0	0.000466	0.038877	0.157628	0	0.002624	0.160252	0.696695	0.21217	0.004416	1.073533	0.219121	0	0.002868	0.22199	0.696695	0.21217	0.004416	1.135271	4.741795	0	0.050542	4.792336	0.019571	0	4.18E-06	0.019575	0.046756	208.7951
390.1215	0.001996	0	0	0.001996	0.061409	0	0	0.061409	0.042969	0	0	0.042969	0	0	0	0.042969	0.048917	0	0	0.048917	0	0	0	0.048917	0.1617	0	0	0.1617	0.003693	0	0	0.003693	0.042768	34.81806
5695.192	0.106227	0.015548	0.07747	0.199245	0.130905	0.000411	0.040552	0.171868	0.584041	0.064694	0.480216	1.12895	0.267254	0.082983	0.547806	2.026993	0.824311	0.093814	0.52482	1.442945	0.267254	0.082983	0.547806	2.340987	14.30457	0.943306	8.731023	23.9789	0.055328	0.000359	0.00067	0.056357	0.139064	601.1336
15202.06	0.121631	0.008751	0	0.130383	2.275243	0.117695	0	2.392938	2.618692	0.188409	0	2.807101	0	0	0	2.807101	2.981181	0.214489	0	3.19567	0	0	0	3.19567	7.860957	2.398764	0	10.25972	0.136751	0.007074	0	0.143825	1.716419	1356.773
102.2435	0.05981	0.03662	0	0.09643	0.018771	0.002072	0	0.020843	0.000855	0.000523	0	0.001378	0	0	0	0.001378	0.06104	0.037373	0	0.098414	0	0	0	0.098414	0.266325	0.054573	0	0.320898	0	0	0	0	0.105054	11.81779
1530.773	0.01767	0.003358	0.013922	0.03495	0.028517	8.89E-05	0.010558	0.039164	0.088674	0.012967	0.076602	0.178243	0.044058	0.013039	0.048748	0.284088	0.127889	0.018896	0.083813	0.230598	0.044058	0.013039	0.048748	0.336443	2.148418	0.100342	1.507435	3.756195	0.014966	6.7E-05	0.000115	0.015148	0.037696	161.5747
1150.807	0.019608	0.00087	0	0.020478	0.176317	0.00483	0	0.181147	0.42215	0.01873	0	0.44088	0	0	0	0.44088	0.480585	0.021323	0	0.501908	0	0	0	0.501908	1.123395	0.157682	0	1.281077	0.010597	0.00029	0	0.010888	0.110452	102.7087
36.34992	0.021997	0.00267	0	0.024667	0.007271	0.00014	0	0.00741	0.000314	3.81E-05	0	0.000352	0	0	0	0.000352	0.02245	0.002725	0	0.025174	0	0	0	0.025174	0.105005	0.0031	0	0.108105	0	0	0	0	0.040253	4.201497
366.166	0.032358	0.017616	0.003013	0.052987	0.022109	0.000585	0.001598	0.024293	0.201524	0.080217	0.019448	0.301189	0.029668	0.010333	0.023521	0.364711	0.273243	0.11615	0.021245	0.410638	0.029668	0.010333	0.023521	0.47416	4.575004	0.619487	0.387197	5.581688	0.003401	0.000203	1.97E-05	0.003623	0.016352	38.64922
635.7648	0.002293	0.000203	0	0.002495	0.092275	0.0078	0	0.100075	0.049359	0.004366	0	0.053725	0	0	0	0.053725	0.056191	0.00497	0	0.061161	0	0	0	0.061161	0.132475	0.07722	0	0.209695	0.005546	0.000469	0	0.006015	0.050467	56.74155
183.2215	0.460332	0.060183	0	0.520515	0.034016	0.003335	0	0.037351	0.006577	0.00086	0	0.007437	0	0	0	0.007437	0.469802	0.061421	0	0.531224	0	0	0	0.531224	1.604652	0.082079	0	1.686731	0	0	0	0	0.108262	21.17761
349.5656	0.000912	0	0.001208	0.002119	0.003655	0	0.001032	0.004687	0.003048	0	0.005052	0.008099	0.002353	0.000727	0.001359	0.012538	0.004447	0	0.005531	0.009978	0.002353	0.000727	0.001359	0.014417	0.123189	0	0.095342	0.218531	0.00345	0	9.27E-06	0.003459	0.011595	36.89702
578.1144	0.001873	0	0	0.001873	0.091	0	0	0.091	0.040329	0	0	0.040329	0	0	0	0.040329	0.045912	0	0	0.045912	0	0	0	0.045912	0.10867	0	0	0.10867	0.005473	0	0	0	0.005473	0.063335	51.59629
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2043.305	2.568758	0	0	2.568758	0.416541	0	0	0.416541	0.22385	0	0	0.22385	0	0	0	0.22385	2.83482	0	0	2.83482	0	0	0	2.83482	25.35731	0	0	25.35731	0	0	0	0	0.900854	236.1749
34.46542	0.005939	0	2.3E-07	0.005939	0.004019	0	0.000164	0.004183	0.041227	0	1.22E-06	0.041228	0.0046	0.001594	0.010737	0.058159	0.055954	0	1.33E-06	0.055955	0.0046	0.001594	0.010737	0.072886	1.64704	0	0.027085	1.674125	0.000335	0	5.53E-06	0.000341	0.000517	3.634335
77300.58	0.145937	0.08853	0	0.234467	11.44237	0.736368	0	12.17874	3.14198	1.90602	0	5.048	0	0	0	5.048	3.576905	2.169858	0	5.746763	0	0	0	5.746763	12.45195	24.23363	0	36.68558	0.687732	0.044259	0	0.73199	8.283219	6905.23
1653.35	2.533796	0.447428	0	2.981224	0.30874	0.028306	0	0.337046	0.076701	0.007923	0	0.084624	0	0	0	0.084624	2.632065	0.458376	0	3.090441	0	0	0	3.090441	13.23799	1.02553	0	14.26352	0	0	0	0	0.899285	191.1021
154324.1	1.949128	0	6.061937	8.011065	3.051305	0	2.458945	5.51025	8.169334	0	29.75958	37.92891	25.17734	7.494114	18.47801	89.07837	11.91049	0	32.58265	44.49314	25.17734	7.494114	18.47801	95.64259	504.364	0	280.4262	784.7902	1.473728	0	0.051922	1.52565	15.29762	16273.28
446.5133	0.003484	0	0	0.003484	0.070348	0	0	0.070348	0.075008	0	0	0.075008	0	0	0	0.075008	0.085391	0	0	0.085391	0	0	0	0.085391	0.778259	0	0	0.778259	0.004231	0	0	0.004231	0.005544	39.88686
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600.001	0.005141	0	0.04161	0.04675	0.006368	0	0.020645	0.027013	0.016291	0	0.169575	0.185866	0.127156	0.040252	0.035589	0.388863	0.023772	0	0.185664	0.209436	0.127156	0.040252	0.035589	0.412432	2.46964	0	1.30101	3.770649	0.015134	0	0.000684	0.015818	0.192506	168.7181
17412.59	0.603001	0	1.103284	1.706285	0.756603	0	0.32644	1.083044	2.82338	0	6.173135	8.996515	6.689104	1.812232	5.428954	22.9268	4.114325	0	6.758721	10.87305	6.689104	1.812232	5.428954	24.80334	119.994	0	59.8552	179.8492	0.165265	0	0.006876	0.172141	1.707038	1836.136
6.352326	0.000218	0	0	0.000218	0.001001	0	0	0.001001	0.00469	0	0	0.00469	0	0	0	0.00469	0.005339	0	0	0.005339	0	0	0	0.005339	0.027023	0	0	0.027023	6.02E-05	0	0	6.02E-05	4.6E-05	0.567451
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.580612	1.88E-06	0	1.44E-05	1.62E-05	2.33E-06	0	7.16E-06	9.49E-06	5.92E-06	0	5.81E-05	6.41E-05	3.15E-05	9.59E-06	9.49E-06	0.000115	8.63E-06	0	6.37E-05	7.23E-05	3.15E-05	9.59E-06	9.49E-06	0.000123	0.000895	0	0.000446	0.001342	5.48E-06	0	2.61E-07	5.74E-06	8.05E-05	0.061225
84236.65	1.046219	0	3.135139	4.181358	1.894131	0	1.310712	3.204843

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
87.51665	0.000282	0	0.002175	0.002457	0.000349	0	0.001084	0.001433	0.000888	0	0.00882	0.009708	0.005171	0.001535	0.001513	0.017927	0.001296	0	0.009657	0.010953	0.005171	0.001535	0.001513	0.019172	0.134402	0	0.067674	0.202076	0.000823	0	4.27E-05	0.000865	0.012014	9.228521
16104.85	0.239216	0.074787	0.360375	0.674378	0.307537	0.00184	0.475415	0.784792	1.231971	0.28707	1.866508	3.385549	2.082667	0.571835	2.951121	8.991172	1.788509	0.418803	2.043437	4.250749	2.082667	0.571835	2.951121	9.856373	30.72996	2.31402	27.65294	60.69692	0.15611	0.000754	0.002349	0.159213	0.843567	1698.237
8223.427	0.13904	0.002214	0	0.141254	1.286124	0.00948	0	1.295604	2.99346	0.047665	0	3.041124	3.407855	0.054263	0	3.041124	3.407855	0.054263	0	3.462118	0	0	0	3.462118	9.227866	0.39507	0	9.622936	0.077351	0.00057	0	0.077921	1.784163	734.5954
2546.662	0.023633	0.010821	0.049279	0.083734	0.038668	0.000268	0.068177	0.107114	0.115449	0.040902	0.250614	0.406964	0.258336	0.069657	0.352828	1.087786	0.168436	0.059684	0.27439	0.50251	0.258336	0.069657	0.352828	1.183331	3.24264	0.331238	3.997442	7.57132	0.02471	0.000124	0.000342	0.025176	0.122227	268.5423
3784.773	0.042842	0.000792	0	0.043634	0.590893	0.0054	0	0.596292	0.922369	0.017054	0	0.939422	0	0	0	0.939422	1.050056	0.019414	0	1.06947	0	0	0	1.06947	2.575887	0.141349	0	2.717236	0.035538	0.000325	0	0.035863	0.802857	338.0922
833.6751	0.788944	0	0.315347	1.104291	0.167776	0	0.015047	0.182823	5.482313	0	2.415532	7.897844	3.466644	5.420471	5.651288	22.43625	6.461139	0	2.624613	9.085752	3.466644	5.420471	5.651288	23.62415	61.03924	0	12.48775	73.52699	0.007414	0	0.000827	0.008242	0.032454	87.91
69422.83	1.145017	0	3.027929	4.172946	1.832087	0	1.081122	2.913209	5.551319	0	16.43893	21.99025	9.382669	2.71337	7.061364	41.14765	7.803004	0	17.99638	25.79938	9.382669	2.71337	7.061364	44.95678	245.5033	0	119.2252	364.7285	0.66133	0	0.024985	0.686315	4.704104	7320.551
1104.246	0.002199	0	0	0.002199	0.173974	0	0	0.173974	0.047341	0	0	0.047341	0	0	0	0.047341	0.053894	0	0	0.053894	0	0	0	0.053894	0.698132	0	0	0.698132	0.010463	0	0	0.010463	0.007747	98.64186
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
98.37927	0.000307	0	0.00251	0.002817	0.000383	0	0.001245	0.001629	0.000972	0	0.010219	0.011191	0.006693	0.001894	0.001938	0.021715	0.001418	0	0.011188	0.012607	0.006693	0.001894	0.001938	0.023131	0.14892	0	0.078432	0.227352	0.000911	0	6.16E-05	0.000973	0.013499	10.37397
1642.384	0.022037	0	0.000479	0.022516	0.030028	0	0.000453	0.030481	0.108589	0	0.002185	0.110774	0.638609	0.185501	0.00399	0.938874	0.15461	0	0.002391	0.157	0.638609	0.185501	0.00399	0.985101	3.219767	0	0.046006	3.265772	0.016233	0	3.82E-06	0.016237	0.038991	173.1874
338.4207	0.001716	0	0	0.001716	0.053318	0	0	0.053318	0.036954	0	0	0.036954	0	0	0	0.036954	0.042069	0	0	0.042069	0	0	0	0.042069	0.138577	0	0	0.138577	0.003207	0	0	0.003207	0.038573	30.23099
4857.612	0.073109	0.014857	0.062846	0.150812	0.098579	0.000398	0.038112	0.13709	0.380389	0.060987	0.363523	0.804898	0.23008	0.061369	0.462866	1.559212	0.555062	0.088992	0.398012	1.042065	0.23008	0.061369	0.462866	1.79638	9.003318	0.892998	8.042057	17.93837	0.04709	0.000337	0.000595	0.048022	0.119722	512.2291
15084.18	0.064095	0.005549	0	0.069645	2.262769	0.11375	0	2.376519	1.379957	0.119475	0	1.499433	0	0	0	1.499433	1.570976	0.136014	0	1.70699	0	0	0	1.70699	4.399495	2.169364	0	6.568859	0.136001	0.006837	0	0.142838	2.138073	1347.464
121.5919	0.071441	0.043414	0	0.114854	0.022217	0.00257	0	0.024787	0.001021	0.00062	0	0.001641	0	0	0	0.001641	0.07291	0.044307	0	0.117217	0	0	0	0.117217	0.309966	0.071971	0	0.381937	0	0	0	0	0.1242	14.05417
1271.16	0.01359	0.003193	0.012618	0.029401	0.022297	8.44E-05	0.009946	0.032327	0.067788	0.012444	0.068527	0.148759	0.043512	0.012107	0.047869	0.252246	0.098585	0.018154	0.075018	0.191757	0.043512	0.012107	0.047869	0.295244	1.624186	0.096381	1.428192	3.148759	0.012394	6.42E-05	0.000109	0.012567	0.031358	134.0423
1117.626	0.00703	0.000543	0	0.007574	0.17145	0.004633	0	0.176082	0.151364	0.011696	0	0.163059	0	0	0	0.163059	0.172316	0.013315	0	0.185631	0	0	0	0.185631	0.450501	0.13822	0	0.588721	0.010305	0.000278	0	0.010583	0.140188	99.83709
43.5883	0.026534	0.003335	0	0.029869	0.008705	0.000181	0	0.008886	0.000379	4.77E-05	0	0.000427	0	0	0	0.000427	0.02708	0.003404	0	0.030484	0	0	0	0.030484	0.124592	0.004282	0	0.128874	0	0	0	0	0.048066	5.038143
282.1033	0.006533	0.01615	0.002088	0.024771	0.011246	0.000555	0.001591	0.013391	0.032396	0.071687	0.012278	0.11636	0.015304	0.004219	0.010789	0.146672	0.047272	0.104605	0.013443	0.16532	0.015304	0.004219	0.010789	0.195631	0.753247	0.555332	0.316985	1.625564	0.002594	0.000178	1.65E-05	0.002789	0.01358	29.74744
629.3308	0.002185	0.000191	0	0.002376	0.091405	0.007746	0	0.099151	0.047045	0.004115	0	0.051159	0	0	0	0.051159	0.053557	0.004684	0	0.058241	0	0	0	0.058241	0.127401	0.078178	0	0.205579	0.005494	0.000466	0	0.005959	0.052632	56.21787
188.2509	0.46785	0.061469	0	0.529319	0.034937	0.003439	0	0.038376	0.006685	0.000878	0	0.007563	0	0	0	0.007563	0.477475	0.062734	0	0.540209	0	0	0	0.540209	1.620934	0.086147	0	1.707082	0	0	0	0	0.111757	21.75893
351.2137	0.000824	0	0.001145	0.001969	0.003372	0	0.001003	0.004374	0.002592	0	0.004707	0.007298	0.002004	0.000632	0.00121	0.011145	0.003782	0	0.005153	0.008935	0.002004	0.000632	0.00121	0.012781	0.113981	0	0.096161	0.210141	0.003463	0	9.32E-06	0.003472	0.011708	37.03505
517.1798	0.001692	0	0	0.001692	0.081482	0	0	0.081482	0.036438	0	0	0.036438	0	0	0	0.036438	0.041482	0	0	0.041482	0	0	0	0.041482	0.048115	0	0	0.048115	0.004901	0	0	0.004901	0.071742	46.19947
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2125.777	2.33071	0	0	2.33071	0.433354	0	0	0.433354	0.095155	0	0	0.095155	0	0	0	0.095155	2.449101	0	0	2.449101	0	0	0	2.449101	30.57702	0	0	30.57702	0	0	0	0	0.936091	245.7074
33.9672	0.00469	0	2.77E-07	0.00469	0.003875	0	0.000127	0.004001	0.028991	0	1.46E-06	0.028992	0.00336	0.000963	0.007919	0.041234	0.042303	0	1.6E-06	0.042305	0.00336	0.000963	0.007919	0.054546	1.357566	0	0.02305	1.380616	0.000332	0	3.52E-06	0.000336	0.000552	3.581799
78177.79	0.091025	0.090602	0	0.181626	11.5569	0.760042	0	12.31694	1.959735	1.950628	0	3.910363	0	0	0	3.910363	2.23101	2.220641	0	4.451651	0	0	0	4.451651	7.978986	26.19509	0	34.17408	0.694615	0.045682	0	0.740297	8.863571	6983.591
1749.469	2.53783	0.477007	0	3.014837	0.325688	0.030953	0	0.356641	0.073258	0.008213	0	0.08147	0	0	0	0.08147	2.632193	0.488413	0	3.120606	0	0	0	3.120606	13.64568	1.109657	0	14.75534	0	0	0	0	0.96298	202.2119
173650.2	2.023782	0	5.722282	7.746064	3.291259	0	2.410839	5.702098	8.211099	0	27.25757	35.46867	24.32945	7.129157	17.73495	84.66222	11.97411	0	29.84339	41.8175	24.32945	7.129157	17.73495	91.01105	537.8994	0	258.7496	796.649	1.666641	0	0.050068	1.716709	17.94707	18311.2
479.4331	0.003606	0	0	0.003606	0.075535	0	0	0.075535	0.077632	0	0	0.077632	0	0	0	0.077632	0.088379	0	0	0.088379	0	0	0	0.088379	0.827466	0	0	0.827466	0.004543	0	0	0.004543	0.005987	42.82757
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2059.605	0.00677	0	0.047817	0.054587	0.008508	0	0.024067	0.032576	0.02111	0	0.191748	0.212858	0.139424	0.046281	0.040157	0.438721	0.030804	0	0.20994	0.240744	0.139424	0.046281	0.040157	0.466606	3.198044	0	1.471293	4.669337	0.019596	0	0.000765	0.020361	0.255726	217.1828
19322.99	0.631396	0	1.02207	1.653466	0.802151	0	0.312397	1.114548	2.906296	0	5.594353	8.500649	6.315232	1.682978	5.038099	21.53696	4.23624	0	6.125052	10.36129	6.315232	1.682978	5.038099	23.3976	125.3487	0	54.01224	179.3609	0.184519	0	0.006508	0.191027	1.924399	2037.585
6.519728	0.000224	0	0	0.000224	0.001027	0	0	0.001027	0.004813	0	0	0.004813	0	0	0	0.004813	0.00548	0	0	0.00548	0	0	0	0.00548	0.027655	0	0	0.027655	6.18E-05	0	0	6.18E-05	4.72E-05	0.582405
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.168198	7.18E-06	0	4.78E-05	5.5E-05	9.03E-06	0	2.42E-05	3.33E-05	2.23E-05	0	0.000191	0.000213	9.91E-05	3.1E-05	2.98E-05	0.000373	3.25E-05	0	0.000209	0.000241	9.91E-05	3.1E-05	2.98E-05	0.000401	0.00337	0	0.001462	0.004832	2.06E-05	0	8.34E-07	2.14E-05	0.000303	0.228634
97045.87	1.128536	0	3.027315	4.155851	2.060874	0	1.288024	3.348899	4.665008	0	14.62189	19.2869	10.66804	2.984491	7.80531	40.74474	6.804569	0	16.0091	22.81367	10.66804	2.984491	7.80531	44.27151	287.6862	0	134.7892	422.4754	0.931159	0	0.028238	0.959397	8.482091	10233.37
286.98	0.000787	0	0	0.000787	0.045214	0	0	0.045214	0.016943	0	0	0.016943	0	0	0	0.016943	0.019288	0	0	0.019288	0	0	0	0.019288	0.147582	0	0	0.147582	0.002719	0.00265	25.63581
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
163.1307	0.000537	0	0.003635	0.004172	0.000676	0	0.001837	0.002512	0.001667	0	0.014507	0.016174	0.008043	0.002449	0.002375	0.029041	0.002433	0	0.015883	0.018316	0.008043	0.002449	0.002375	0.031183	0.252423	0	0.111309	0.363733	0.001544	0	6.86E-05	0.001613	0.022616	17.20192
18159.92	0.25361	0.073887	0.346118	0.673615	0.330163	0.001865	0.47897	0.810998	1.289389	0.27708	1.749133	3.315602	2.065056	0.547245	2.899846	8.827749	1.881474	0.404314	1.915081	4.200868	2.065056	0.547245	2.899846	9.713015	32.94364	2.272522	27.1438	62.35996	0.176479	0.000737	0.002313	0.179529	0.971818	1914.941
9445.243	0.15396	0.002197	0	0.156156	1.478756	0.009346	0	1.488102	3.314659	0.047291	0	3.36195	0	0	0	3.36195	3.773518	0.053838	0	3.827356	0	0	0	3.827356	10.1261	0.391974	0	10.51807	0.088936	0.000562	0	0.089498	2.165241	843.7399
2856.595	0.024155	0.010688	0.047745	0.082588	0.041642	0.00027	0.068615	0.110528	0.116028	0.039538	0.237507	0.393073	0.257713	0.067417	0.347393	1.065596	0.169308	0.057693	0.26004	0.487041	0.257713	0.067417	0.347393	1.159565	3.39856	0.325746	3.893876	7.618182	0.027785	0.000121	0.000334	0.02824	0.139468	301.2244
4412.634	0.048389	0.000804	0	0.049193	0.689771	0.005441	0	0.695212	1.041796	0.017305	0	1.059102	0	0	0	1.059102	1.186016	0.019701	0	1.205717	0	0	0	1.205717	2.88504	0.143434	0	3.028474	0.041485	0.000327	0	0.041812	0.978607	394.1788
943.0641	0.890146	0	0.30927	1.199415	0.190831	0	0.01461	0.205441	6.107428	0	2.348269	8.455697	3.473928	5.4099	5.6685	23.00803	7.221967	0	2.551736	9.773703	3.473928	5.4099	5.6685	24.32603	68.20815	0	12.39758	80.60573	0.008513	0	0.00081	0.009323	0.037599	99.44494
79060.99	1.200074	0	2.863382	4.063457	1.964449	0	1.045262	3.00971	5.606002	0	15.13105	20.73706	9.463621	2.634818	7.072311	39.90781	7.945483	0	16.56509	24.51057	9.463621	2.634818	7.072311	43.68132	259.9234	0	110.9609	370.8843	0.757249	0	0.02435	0.781598	5.584928	8336.882
1262.706	0.00246	0	0	0.00246	0.19894	0	0	0.19894	0.052964	0	0	0.052964	0	0	0	0.052964	0.060296	0	0	0.060296	0	0	0	0.060296	0.807464	0	0	0.807464	0.011965	0	0	0.011965	0.008924	112.797
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
128.632	0.000412	0	0.002954	0.003365	0.000521	0	0.001486	0.002007	0.001284	0	0.011844	0.013128	0.007555	0.002192	0.002218	0.025093	0.001874	0	0.012968	0.014842	0.007555	0.002192	0.002218	0.026806	0.196303	0	0.090912	0.287215	0.001201	0	7.06E-05	0.001272	0.017785	13.56408
1805.269	0.02099	0	0.000429	0.021419	0.031011	0	0.000442	0.031453	0.098322	0	0.001863	0.100184	0.58303	0.163088	0.003595	0.849897	0.143471	0	0.002039	0.14551	0.58303	0.163088	0.003595	0.895223	2.857967	0	0.042045	2.900013	0.017843	0	3.52E-06	0.017847	0.043044	190.3633
389.0843	0.001952	0	0	0.001952	0.0613	0	0	0.0613	0.042021	0	0	0.042021	0	0	0	0.042021	0.047838	0	0	0.047838	0	0	0	0.047838	0.156923	0	0	0.156923	0.003687	0	0	0.003687	0.046048	34.75674
5427.212	0.070207	0.014733	0.059748	0.144688	0.099596	0.000405	0.037661	0.137662	0.359731	0.058812	0.338031	0.756574	0.210285	0.052364	0.415439	1.434662	0.524918	0.085819	0.370101	0.980838	0.210285	0.052364	0.415439	1.658926	8.489405	0.860143	7.413048	16.7626	0.052767	0.000322	0.000564	0.053654	0.135714	572.2928
15256.94	0.029272	0.004137	0	0.033409	2.294673	0.109064	0	2.403736	0.630213	0.089063	0	0.719276	0	0	0	0.719276	0.71745	0.101391	0	0.818841	0	0	0	0.818841	2.042306	2.097068	0	4.139374	0.137919	0.006555	0	0.144474	2.473814	1362.896
136.5701	0.081078	0.049078	0	0.130156	0.024901	0.002939	0	0.027841	0.001158	0.000701	0	0.00186	0	0	0	0.00186	0.082746	0.050088	0	0.132834	0	0	0	0.132834	0.347891	0.084964	0	0.432854	0	0	0	0.140109	15.78543
1379.638	0.014063	0.003131	0.012055	0.02925	0.023396	8.36E-05	0.009808	0.033287	0.069477	0.012	0.06422	0.145697	0.045623	0.012036	0.050086	0.253441	0.101381	0.01751	0.070313	0.189204	0.045623	0.012036	0.050086	0.296948	1.656916	0.092957	1.357308	3.107181	0.013474	6.17E-05	0.000104	0.013639	0.034318	145.4811
1113.214	0.004013	0.000463	0	0.004476	0.170898	0.004489	0	0.175387	0.086404	0.009973	0	0.096377	0	0	0	0.096377	0.098364	0.011354	0	0.109718	0	0	0	0.109718	0.271419	0.133952	0	0.405371	0.010272	0.00027	0	0.010541	0.152365	99.443
47.37388	0.028862	0.003749	0	0.032611	0.009453	0.000205	0	0.009657	0.000412	5.36E-05	0	0.000466	0	0	0	0.000466	0.029456	0.003826	0	0.033282	0	0	0	0.033282	0.135238	0.004917	0	0.140155	0	0	0	0	0.05235	5.475697
328.4166	0.007174	0.016673	0.002124	0.025971	0.012921	0.000572	0.001661	0.015154	0.03529	0.072487	0.012275	0.120052	0.015449	0.004127	0.010562	0.15019	0.051495	0.105773	0.01344	0.170707	0.015449	0.004127	0.010562	0.200845	0.818267	0.56127	0.312525	1.692062	0.003051	0.000179	1.65E-05	0.003247	0.016035	34.63112
622.4835	0.002086	0.000184	0	0.00227	0.09035	0.007722	0	0.098073	0.044918	0.003958	0	0.048876	0	0	0	0.048876	0.051135	0.004506	0	0.055642	0	0	0	0.055642	0.122732	0.080268	0	0.203	0.00543	0.000464	0	0.005895	0.054668	55.60621
193.2929	0.475818	0.063508	0	0.539326	0.035808	0.003596	0	0.039404	0.006799	0.000907	0	0.007706	0	0	0	0.007706	0.485607	0.064814	0	0.550422	0	0	0	0.550422	1.638352	0.09272	0	1.731072	0	0	0	0	0.115395	22.34171
353.6282	0.000821	0	0.001182	0.002003	0.003525	0	0.001012	0.004537	0.002587	0	0.00487	0.007457	0.002106	0.000684	0.001269	0.011517	0.003775	0	0.005333	0.009108	0.002106	0.000684	0.001269	0.013167	0.116602	0	0.096415	0.213016	0.003487	0	9.39E-06	0.003496	0.011795	37.28965
513.5775	0.001693	0	0	0.001693	0.080914	0	0	0.080914	0.03644	0	0	0.03644	0	0	0	0.03644	0.041484	0	0	0.041484	0	0	0	0.041484	0.043098	0	0	0.043098	0.004866	0	0	0.004866	0.074051	45.87767
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2154.096	2.148014	0	0	2.148014	0.439127	0	0	0.439127	0.031665	0	0	0.031665	0	0	0	0.031665	2.19327	0	0	2.19327	0	0	0	2.19327	32.7631	0	0	32.7631	0	0	0	0	0.946681	248.9807
29.83888	0.003535	0	3.23E-07	0.003535	0.003061	0	7.55E-05	0.003136	0.021394	0	1.7E-06	0.021396	0.002504	0.000667	0.005894	0.030461	0.031219	0	1.86E-06	0.03122	0.002504	0.000667	0.005894	0.040285	1.029517	0	0.018729	1.048246	0.000292	0	2.79E-06	0.000295	0.000513	3.146473
78889.61	0.058759	0.093204	0	0.151963	11.64949	0.779595	0	12.42909	1.265064	2.006658	0	3.271723	0	0	0	3.271723	1.440179	2.284428	0	3.724607	0	0	0	3.724607	4.983372	27.9983	0	32.98168	0.700181	0.046857	0	0.747037	9.345326	7047.178
1819.165	2.520909	0.499849	0	3.020758	0.337695	0.033154	0	0.370849	0.069706	0.008414	0	0.07812	0	0	0	0.07812	2.611153	0.511582	0	3.122735	0	0	0	3.122735	13.86504	1.189903	0	15.05494	0	0	0	0	1.012368	210.2677
171382.8	1.813789	0	5.355302	7.169091	3.061639	0	2.330851	5.392489	7.213142	0	25.11462	32.32776	23.59415	6.789557	17.14711	79.85857	10.52091	0	27.49721	38.01813	23.59415	6.789557	17.14711	85.54894	501.7836	0	240.4453	742.2289	1.645689	0	0.048605	1.694294	18.50232	18072.11
445.8747	0.003234	0	0	0.003234	0.070248	0	0	0.070248	0.069636	0	0	0.069636	0	0	0	0.069636	0.079276	0	0	0.079276	0	0	0	0.079276	0.761297	0	0	0.761297	0.004225	0	0	0.004225	0.0056	39.82981
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2303.171	0.007549	0	0.054415	0.061963	0.009474	0	0.027328	0.036802	0.023593	0	0.21871	0.242303	0.153623	0.052734	0.046038	0.494698	0.034426	0	0.23946	0.273886	0.153623	0.052734	0.046038	0.526281	3.574836	0	1.678309	5.253145	0.021908	0	0.000861	0.022769	0.29217	242.8665
18773.17	0.565021	0	0.935316	1.500338	0.729711	0	0.295069	1.02478	2.582841	0	5.067111	7.649952	5.982967	1.562947	4.701059	19.89692	3.766066	0	5.547811	9.313878	5.982967	1.562947	4.701059	21.56085	113.4049	0	48.77289	162.1778	0.179408	0	0.006184	0.185592	1.899015	1979.607
5.799326	0.000198	0	0	0.000198	0.000914	0	0	0.000914	0.004268	0	0	0.004268	0	0	0	0.004268	0.004858	0	0	0.004858	0	0	0	0.004858	0.024517	0	0	0.024517	5.5E-05	0	0	5.5E-05	4.2E-05	0.518051
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4.622415	1.52E-05	0	0.000107	0.000122	1.9E-05	0	5.39E-05	7.29E-05	4.74E-05	0	0.00043	0.000477	0.000197	6.52E-05	5.97E-05	0.000799	6.91E-05	0	0.00047	0.000539	0.000197	6.52E-05	5.97E-05	0.000861	0.007177	0	0.003295	0.010471	4.39E-05	0	1.83E-06	4.57E-05	0.000645	0.487428
98119.58	1.052449	0	2.902264	3.954714

300.6021	0.000811	0	0	0.000811	0.04736	0	0	0.04736	0.017461	0	0	0.017461	0	0	0	0.017461	0.019879	0	0	0.019879	0	0	0	0.019879	0.155189	0	0	0.155189	0.002848	0	0	0.002848	0.00282	26.85266
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
233.451	0.000763	0	0.00539	0.006154	0.000957	0	0.002712	0.00367	0.002382	0	0.021619	0.024001	0.010983	0.003497	0.00329	0.04177	0.003476	0	0.02367	0.027145	0.010983	0.003497	0.00329	0.044915	0.360954	0	0.165878	0.526832	0.002208	0	1E-04	0.002308	0.032401	24.61712
17964.87	0.231846	0.071879	0.329423	0.633148	0.301747	0.001836	0.469315	0.772898	1.177357	0.267456	1.653595	3.098409	2.001124	0.514441	2.796067	8.41004	1.717997	0.390271	1.810479	3.918747	2.001124	0.514441	2.796067	9.230379	31.19222	2.246925	26.986	60.42514	0.174591	0.000723	0.002287	0.177601	0.984209	1894.373
9515.774	0.147994	0.00219	0	0.150185	1.48997	0.009244	0	1.499214	3.18623	0.047155	0	3.233385	0	0	0	3.233385	3.62731	0.053683	0	3.680993	0	0	0	3.680993	9.620462	0.390846	0	10.01131	0.089611	0.000556	0	0.090167	2.312758	850.0404
2811.49	0.021275	0.010375	0.045578	0.077228	0.038178	0.000264	0.067061	0.105503	0.101281	0.038165	0.22528	0.364725	0.249819	0.064108	0.333673	1.012326	0.147789	0.05569	0.246653	0.450132	0.249819	0.064108	0.333673	1.097732	3.13294	0.322174	3.837846	7.292961	0.027347	0.000119	0.000328	0.027794	0.139744	296.4681
4512.133	0.047607	0.000821	0	0.048428	0.705383	0.005505	0	0.710888	1.024953	0.017665	0	1.042618	0	0	0	1.042618	1.166841	0.020111	0	1.186952	0	0	0	1.186952	2.80677	0.146419	0	2.953189	0.042424	0.000331	0	0.042755	1.047715	403.0671
951.4125	0.874191	0	0.302671	1.176862	0.189876	0	0.01416	0.204036	5.942336	0	2.290018	8.232355	3.508116	5.438131	5.729153	22.90775	7.052621	0	2.488656	9.541277	3.508116	5.438131	5.729153	24.21668	66.6252	0	12.36125	78.98645	0.00861	0	0.000796	0.009406	0.038444	100.3253
78797.4	1.0417	0	2.669231	3.710932	1.79439	0	0.997398	2.791788	4.564283	0	13.88188	18.44616	9.477918	2.521528	7.059911	37.50552	6.645535	0	15.19871	21.84425	9.477918	2.521528	7.059911	40.90361	231.442	0	103.0938	334.5358	0.755185	0	0.023808	0.778992	5.808036	8309.087
1252.407	0.002369	0	0	0.002369	0.197317	0	0	0.197317	0.051013	0	0	0.051013	0	0	0	0.051013	0.058074	0	0	0.058074	0	0	0	0.058074	0.803697	0	0	0.803697	0.011867	0	0	0.011867	0.008935	111.877
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
157.4177	0.000502	0	0.003707	0.00421	0.000633	0	0.001859	0.002492	0.001573	0	0.014919	0.016492	0.008942	0.002762	0.002696	0.030891	0.002295	0	0.016335	0.01863	0.008942	0.002762	0.002696	0.033029	0.240069	0	0.114511	0.35458	0.001469	0	8.7E-05	0.001556	0.02174	16.5995
1732.046	0.017598	0	0.0004	0.017998	0.027664	0	0.000433	0.028097	0.080857	0	0.00171	0.082566	0.533867	0.142121	0.003247	0.761802	0.117986	0	0.001872	0.119858	0.533867	0.142121	0.003247	0.799093	2.280407	0	0.03823	2.318637	0.01712	0	3.29E-06	0.017123	0.041454	182.6421
390.818	0.001929	0	0	0.001929	0.061574	0	0	0.061574	0.041541	0	0	0.041541	0	0	0	0.041541	0.047291	0	0	0.047291	0	0	0	0.047291	0.154438	0	0	0.154438	0.003703	0	0	0.003703	0.048081	34.91162
5315.546	0.058064	0.014505	0.056485	0.129054	0.086727	0.000406	0.036837	0.12397	0.294489	0.057156	0.315848	0.667492	0.192849	0.047115	0.373801	1.281258	0.429717	0.083402	0.345814	0.858932	0.192849	0.047115	0.373801	1.472698	6.918487	0.835037	6.850646	14.60417	0.051702	0.00031	0.000538	0.05255	0.134684	560.5177
15418.17	0.024534	0.003863	0	0.028398	2.320126	0.109013	0	2.429139	0.52822	0.08318	0	6.6114	0	0	0	6.6114	0.601338	0.094694	0	0.696032	0	0	0	0.696032	1.750089	2.116759	0	3.866848	0.139449	0.006552	0	0.146001	2.568789	1377.299
148.5694	0.089404	0.053221	0	0.142626	0.027045	0.003242	0	0.030287	0.001277	0.00076	0	0.002038	0	0	0	0.002038	0.091244	0.054316	0	0.14556	0	0	0	0.14556	0.37755	0.097193	0	0.474742	0	0	0	0	0.152881	17.17235
1306.633	0.012533	0.00303	0.011516	0.027078	0.021071	8.13E-05	0.009503	0.030656	0.061954	0.011593	0.061293	0.13484	0.046021	0.011569	0.050493	0.242922	0.090403	0.016916	0.067109	0.174427	0.046021	0.011569	0.050493	0.28251	1.472086	0.089794	1.290164	2.852045	0.012759	5.93E-05	9.93E-05	0.012917	0.032789	137.7829
1117.933	0.003042	0.000434	0	0.003476	0.171679	0.004452	0	0.176131	0.065489	0.009349	0	0.074838	0	0	0	0.074838	0.074554	0.010643	0	0.085197	0	0	0	0.085197	0.206231	0.13529	0	0.341521	0.010319	0.000268	0	0.010586	0.158492	99.86449
49.02692	0.030001	0.003937	0	0.033938	0.009779	0.000215	0	0.009994	0.000429	5.63E-05	0	0.000485	0	0	0	0.000485	0.030618	0.004018	0	0.034636	0	0	0	0.034636	0.140123	0.005183	0	0.145305	0	0	0	0	0.054167	5.666765
336.1171	0.006764	0.016998	0.002149	0.025911	0.012832	0.000583	0.001721	0.015136	0.033221	0.073618	0.012375	0.119214	0.015277	0.00401	0.010199	0.1487	0.048476	0.107423	0.013549	0.169449	0.015277	0.00401	0.010199	0.198934	0.771292	0.569806	0.309463	1.65056	0.003125	0.000181	1.66E-05	0.003323	0.016497	35.44313
615.2943	0.001989	0.000178	0	0.002167	0.089251	0.007689	0	0.09694	0.042814	0.003838	0	0.046653	0	0	0	0.046653	0.048741	0.00437	0	0.053111	0	0	0	0.053111	0.118063	0.082515	0	0.200578	0.005364	0.000462	0	0.005826	0.056751	54.964
198.2201	0.483551	0.065558	0	0.549109	0.036656	0.003752	0	0.040408	0.006909	0.000937	0	0.007846	0	0	0	0.007846	0.493499	0.066907	0	0.560406	0	0	0	0.560406	1.654269	0.099441	0	1.75371	0	0	0	0	0.119098	22.91122
355.727	0.00082	0	0.001167	0.001987	0.003483	0	0.001001	0.004484	0.002578	0	0.004798	0.007376	0.002008	0.000662	0.001259	0.011306	0.003762	0	0.005253	0.009016	0.002008	0.000662	0.001259	0.012945	0.11705	0	0.096672	0.213722	0.003507	0	9.44E-06	0.003517	0.011881	37.51097
500.8795	0.001562	0	0	0.001562	0.078914	0	0	0.078914	0.033638	0	0	0.033638	0	0	0	0.033638	0.038294	0	0	0.038294	0	0	0	0.038294	0.039574	0	0	0.039574	0.004746	0	0	0.004746	0.07591	44.74337
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2154.644	2.38846	0	0	2.38846	0.439238	0	0	0.439238	0.035118	0	0	0.035118	0	0	0	0.035118	2.438681	0	0	2.438681	0	0	0	2.438681	34.73208	0	0	34.73208	0	0	0	0	0.961536	249.044
26.49767	0.002779	0	3.23E-07	0.00278	0.002559	0	8.56E-05	0.002644	0.016572	0	1.71E-06	0.016574	0.00188	0.000498	0.004382	0.023333	0.024182	0	1.87E-06	0.024184	0.00188	0.000498	0.004382	0.030943	0.783552	0	0.017192	0.800745	0.00026	0	2.26E-06	0.000262	0.000481	2.794146
79335.95	0.033761	0.095664	0	0.129425	11.72841	0.771004	0	12.49941	0.726855	2.059622	0	2.786477	0	0	0	2.786477	0.827469	2.344723	0	3.172192	0	0	0	3.172192	3.537696	30.02397	0	33.56166	0.704924	0.04634	0	0.751264	10.02671	7087.049
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1814.145	2.448759	0.501763	0	2.950522	0.335603	0.034222	0	0.369825	0.0656	0.008326	0	0.073926	0	0	0	0.073926	2.534016	0.513404	0	3.047419	0	0	0	3.047419	13.55	1.251482	0	14.80148	0	0	0	0	1.011429	209.6875
168283.7	1.627698	0	5.019629	6.647327	2.856833	0	2.254891	5.111724	6.341827	0	23.20446	29.54628	22.87662	6.542538	16.58324	75.54868	9.251313	0	25.40588	34.65719	22.87662	6.542538	16.58324	80.65959	468.7676	0	224.2399	693.0075	1.61647	0	0.047185	1.663656	19.01296	17745.3
410.2041	0.00284	0	0	0.00284	0.064628	0	0	0.064628	0.061146	0	0	0.061146	0	0	0	0.061146	0.069611	0	0	0.069611	0	0	0	0.069611	0.691614	0	0	0.691614	0.003887	0	0	0	0.003887	0.005189	36.64337
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2518.938	0.008226	0	0.060782	0.069008	0.010305	0	0.030443	0.040748	0.025783	0	0.245006	0.270788	0.169644	0.060354	0.05299	0.553776	0.037622	0	0.26825	0.305872	0.169644	0.060354	0.05299	0.58886	3.908066	0	1.880234	5.7883	0.023952	0	0.00095	0.024902	0.324835	265.6189
18153.49	0.501139	0	0.855204	1.356343	0.659771	0	0.278756	0.938526	2.273332	0	4.585452	6.858784	5.61272	1.459438	4.350334	18.28128	3.316297	0	5.02048	8.336777	5.61272	1.459438	4.350334	19.75927	101.9273	0	44.04586	145.9732	0.173585	0	0.00588	0.179466	1.870832	1914.263
5.12392	0.000175	0	0	0.000175	0.000807	0	0	0.000807	0.003761	0	0	0.003761	0	0	0	0.003761	0.004281	0	0	0.004281	0	0	0	0.004281	0.021589	0	0	0.021589	4.86E-05	0	0	4.86E-05	3.71E-05	0.457718
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.904191	2.58E-05	0	0.00019	0.000215	3.22E-05	0	9.5E-05	0.000127	8.09E-05	0	0.000764	0.000845	0.000332	0.000113	9.99E-05	0.00139	0.000118	0	0.000837	0.000955	0.000332	0.000113	9.99E-05	0.0015	0.012263	0	0.005861	0.018124	7.5E-05	0	3.19E-06	7.81E-05	0.001102	0.833487
98593.1	0.980137	0	2.785933	3.766069	1.823887	0	1.225264	3.049151	3.928458	0	13.08292	17.01138	10.53323	2.857096	7.640965	38.04267	5.731859	0	14.32414	20.056	10.53323	2.857096	7.640965	41.0873	261.8639	0	122.8376	384.7015	0.946874	0	0.027819	0.974693	9.49127	10396.52
310.4064	0.000808	0	0	0.000808	0.048905	0	0	0.048905	0.017389	0	0	0.017389	0	0	0	0.017389	0.019796	0	0	0.019796	0	0	0	0.019796	0.160327	0	0	0.160327	0.002941	0	0	0.002941	0.002965	27.72848
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
303.6535	0.000987	0	0.007247	0.008234	0.001234	0	0.003632	0.004866	0.003094	0	0.029198	0.032292	0.014112	0.004606	0.004255	0.055266	0.004515	0	0.031969	0.036483	0.014112	0.004606	0.004255	0.059457	0.469126	0	0.22405	0.693177	0.00287	0	0.000132	0.003002	0.04216	32.01989
17685.98	0.210476	0.069896	0.313947	0.594319	0.27357	0.001805	0.45998	0.735354	1.067005	0.258188	1.566199	2.891393	1.956209	0.49181	2.718986	8.058397	1.556972	0.376747	1.714791	3.64851	1.956209	0.49181	2.718986	8.815515	29.50762	2.227492	27.00809	58.74321	0.171871	0.00071	0.002263	0.174844	0.993246	1864.964
9519.185	0.140869	0.002185	0	0.143054	1.490613	0.009138	0	1.499751	3.03282	0.04705	0	3.07987	0	0	0	3.07987	3.452664	0.053563	0	3.506227	0	0	0	3.506227	9.048016	0.389976	0	9.437993	0.08965	0.00055	0	0.090199	2.445334	850.345
2752.485	0.018544	0.010047	0.04345	0.072042	0.034653	0.000258	0.065435	0.100346	0.087425	0.036767	0.213446	0.337638	0.243472	0.061303	0.322184	0.964597	0.12757	0.053651	0.233696	0.414917	0.243472	0.061303	0.322184	1.041876	2.885749	0.318924	3.798765	7.003438	0.026772	0.000117	0.000322	0.027211	0.13952	290.2461
4573.54	0.046437	0.000837	0	0.047274	0.715004	0.00556	0	0.720563	0.999771	0.018017	0	1.017788	0	0	0	1.017788	1.138173	0.020511	0	1.158684	0	0	0	1.158684	2.707056	0.149333	0	2.856388	0.043002	0.000334	0	0.043337	1.109046	408.5525
955.5353	0.855859	0	0.295784	1.151644	0.188283	0	0.013683	0.201967	5.763204	0	2.229025	7.992229	3.5243	5.464696	5.782195	22.76342	6.865856	0	2.42261	9.288466	3.5243	5.464696	5.782195	24.05966	64.91802	0	12.33077	77.24879	0.008666	0	0.000781	0.009446	0.039093	100.76
78025.27	0.934257	0	2.487326	3.421583	1.640266	0	0.952408	2.592675	4.030685	0	12.75594	16.78663	9.476485	2.458303	7.02626	35.74768	5.872799	0	13.96604	19.83884	9.476485	2.458303	7.02626	38.79989	213.0322	0	95.92805	308.9602	0.74809	0	0.023269	0.771359	6.002666	8227.667
1231.535	0.002262	0	0	0.002262	0.194029	0	0	0.194029	0.048695	0	0	0.048695	0	0	0	0.048695	0.055436	0	0	0.055436	0	0	0	0.055436	0.792014	0	0	0.792014	0.011669	0	0	0.011669	0.008884	110.0125
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
186.9296	0.000594	0	0.004528	0.005122	0.000746	0	0.002262	0.003008	0.001869	0	0.018296	0.020165	0.010317	0.003334	0.003125	0.036941	0.002727	0	0.020032	0.022759	0.010317	0.003334	0.003125	0.039535	0.284862	0	0.140428	0.42529	0.001744	0	0.000104	0.001848	0.025786	19.71149
1655.972	0.014497	0	0.000374	0.014871	0.024523	0	0.000424	0.024947	0.064987	0	0.001574	0.066561	0.490215	0.127612	0.002932	0.687321	0.094829	0	0.001724	0.096552	0.490215	0.127612	0.002932	0.717312	1.770087	0	0.034785	1.804872	0.016368	0	3.09E-06	0.016371	0.039786	174.6202
390.6641	0.001892	0	0	0.001892	0.061549	0	0	0.061549	0.040734	0	0	0.040734	0	0	0	0.040734	0.046373	0	0	0.046373	0	0	0	0.046373	0.150773	0	0	0.150773	0.003702	0	0	0.003702	0.049836	34.89787
5199.882	0.047795	0.014321	0.053635	0.115751	0.075393	0.000406	0.036209	0.112008	0.239497	0.055821	0.29637	0.591688	0.177168	0.042675	0.337473	1.149004	0.349474	0.081453	0.324488	0.755415	0.177168	0.042675	0.337473	1.312731	5.608382	0.81479	6.376758	12.79993	0.050592	0.000299	0.000515	0.051406	0.133465	548.321
15532.41	0.01732	0.003584	0	0.020904	2.339845	0.107293	0	2.447138	0.372891	0.077167	0	0.450058	0	0	0	0.450058	0.424508	0.087849	0	0.512357	0	0	0	0.512357	1.386127	2.243416	0	3.629543	0.140634	0.006449	0	0.147083	2.772823	1387.504
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159.9842	0.098311	0.056363	0	0.154674	0.029101	0.003513	0	0.032614	0.001405	0.000805	0	0.00221	0	0	0	0.00221	0.100334	0.057522	0	0.157856	0	0	0	0.157856	0.406177	0.110552	0	0.51673	0	0	0	0	0.165566	18.49174
1233.493	0.011024	0.002931	0.011031	0.024986	0.018907	7.9E-05	0.009178	0.028163	0.054419	0.011196	0.058744	0.12436	0.0467	0.011354	0.051016	0.233429	0.079408	0.016338	0.064318	0.160064	0.0467	0.011354	0.051016	0.269133	1.279544	0.086711	1.23015	2.596404	0.012042	5.7E-05	9.52E-05	0.012194	0.031253	130.0703
1127.444	0.002586	0.000435	0	0.003022	0.173246	0.004384	0	0.177629	0.055678	0.009376	0	0.065054	0	0	0	0.065054	0.063385	0.010674	0	0.074059	0	0	0	0.074059	0.183263	0.144354	0	0.327617	0.010413	0.000263	0	0.010676	0.168185	100.7141
44.80202	0.02804	0.00346	0	0.0315	0.008942	0.000191	0	0.009133	0.000401	4.94E-05	0	0.00045	0	0	0	0.00045	0.028617	0.003532	0	0.032148	0	0	0	0.032148	0.128747	0.004798	0	0.133545	0	0	0	0	0.04974	5.178431
341.8275	0.006376	0.0173	0.00217	0.025846	0.012704	0.000593	0.001788	0.015084	0.031306	0.074711	0.012458	0.118474	0.015593	0.003996	0.010159	0.148221	0.045681	0.109018	0.01364	0.168339	0.015593	0.003996	0.010159	0.198086	0.717397	0.578063	0.307013	1.602473	0.00318	0.000183	1.66E-05	0.003379	0.016856	36.04528
608.0101	0.001895	0.000174	0	0.002069	0.088144	0.007649	0	0.095792	0.040799	0.003745	0	0.044544	0	0	0	0.044544	0.046446	0.004263	0	0.05071	0	0	0	0.05071	0.113556	0.084829	0	0.198385	0.005298	0.00046	0	0.005757	0.058798	54.3133
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
203.0868	0.491089	0.067606	0	0.558696	0.037492	0.003909	0	0.041401	0.007017	0.000966	0	0.007983	0	0	0	0.007983	0.501193	0.068997	0	0.57019	0	0	0	0.57019	1.669421	0.106167	0	1.775589	0	0	0	0	0.122766	23.47374
357.4551	0.000817	0	0.001162	0.001979	0.003483	0	0.000994	0.004477	0.002567	0	0.004772	0.00734	0.002019	0.000669	0.001314	0.011342	0.003746	0	0.005225	0.008972	0.002019	0.000669	0.001314	0.012974	0.1182	0	0.097134	0.215334	0.003524	0	9.5E-06	0.003534	0.011968	37.69319
499.411	0.001513	0	0	0.001513	0.078682	0	0	0.078682	0.032577	0	0	0.032577	0	0	0	0.032577	0.037086	0	0	0.037086	0	0	0	0.037086	0.038233	0	0	0.038233	0.004732	0	0	0.004732	0.077577	44.61219
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2149.247	2.59985	0	0	2.59985	0.438138	0	0	0.438138	0.038164	0	0	0.038164	0	0	0	0.038164	2.654449	0	0	2.654449	0	0	0	2.654449	36.59132	0	0	36.59132	0	0	0	0	0.969745	248.4201
23.39248	0.002162	0	2.75E-07	0.002162	0.002251	0	6.31E-05	0.002314	0.012677	0	1.45E-06	0.012679	0.001361	0.000357	0.003131	0.017528	0.018499	0	1.59E-06	0.0185	0.001361	0.000357	0.003131	0.023349	0.562453	0	0.01427	0.576723	0.000229	0	1.79E-06	0.000231	0.00045	2.466708
79612.64	0.032976	0.098576	0	0.131553	11.76229	0.780713	0	12.543	0.70997	2.12232	0	2.83229	0	0	0	2.83229	0.808247	2.4161	0	3.224347	0	0	0	3.224347	3.362338	30.99422	0	34.35656	0.70696	0.046924	0	0.753884	10.21654	7111.766
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1851.648	2.380699	0.511478	0	2.892177	0.341616	0.035855	0	0.377471	0.061644	0.008357	0	0.070001	0	0	0	0.070001	2.461156	0.523196	0	2.984352	0	0	0	2.984352	13.46422	1.316053	0	14.78028	0	0	0	0	1.041186	214.0223
164247.9	1.461001	0	4.709303	6.170304	2.673761	0	2.182114	4.855875	5.576681	0	21.49068	27.06736	21.98914	6.239571	15.90537	71.20145	8.13748	0	23.52959	31.66707	21.98914	6.239571	15.90537	75.80116	437.7585	0	209.7802	647.5387	1.577978	0	0.04578	1.623758	19.42883	17319.74
373.2551	0.002382	0	0	0.002382	0.058806	0	0	0.058806	0.051285	0	0	0.051285	0	0	0	0.051285	0.058384	0	0	0.058384	0	0	0	0.058384	0.617056	0	0	0.617056	0.003537	0	0	0.003537	0.004762	33.34273
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2693.106	0.00874	0	0.066728	0.075468	0.01094	0	0.033317	0.044258	0.027485	0	0.269881	0.297366	0.186165	0.066938	0.060246	0.610716	0.040107	0	0.295485	0.335592	0.186165	0.066938	0.060246	0.648942	4.172152	0	2.07128	6.243432	0.025594	0	0.00103	0.026624	0.352281	283.9847

17474.78	0.442141	0	0.782146	1.224287	0.594626	0	0.263539	0.858165	1.992313	0	4.151892	6.144205	5.213457	1.352629	3.988942	16.69923	2.906824	0	4.545795	7.452619	5.213457	1.352629	3.988942	18.00765	91.6783	0	39.93583	131.6141	0.167158	0	0.005598	0.172756	1.839694	1842.694
4.528503	0.000154	0	0	0.000154	0.000713	0	0	0.000713	0.003314	0	0	0.003314	0	0	0	0.003314	0.003772	0	0	0.003772	0	0	0	0.003772	0.019029	0	0	0.019029	4.29E-05	0	0	4.29E-05	3.28E-05	0.404529
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11.85583	3.84E-05	0	0.000294	0.000333	4.78E-05	0	0.000147	0.000195	0.000121	0	0.001191	0.001312	0.000506	0.000174	0.00015	0.002142	0.000177	0	0.001304	0.001481	0.000506	0.000174	0.00015	0.00231	0.018364	0	0.009139	0.027503	0.000112	0	4.86E-06	0.000117	0.001655	1.250182
98374.68	0.910577	0	2.673122	3.583699	1.725206	0	1.200233	2.925439	3.596009	0	12.40367	15.99968	10.41208	2.782244	7.531046	36.72505	5.247112	0	13.58045	18.82757	10.41208	2.782244	7.531046	39.55294	249.5349	0	117.559	367.094	0.944955	0	0.027578	0.972534	9.927713	10373.49
315.937	0.000773	0	0	0.000773	0.049776	0	0	0.049776	0.016648	0	0	0.016648	0	0	0	0.016648	0.018953	0	0	0.018953	0	0	0	0.018953	0.161999	0	0	0.161999	0.002994	0	0	0.002994	0.00308	28.22252
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
362.917	0.00117	0	0.008969	0.010139	0.001461	0	0.004476	0.005936	0.003685	0	0.036299	0.039984	0.017033	0.005653	0.005118	0.067788	0.005377	0	0.039743	0.04512	0.017033	0.005653	0.005118	0.072924	0.559578	0	0.278558	0.838136	0.003427	0	0.000161	0.003588	0.050466	38.26914
17282.79	0.18863	0.067834	0.299126	0.55559	0.24622	0.001769	0.449305	0.697294	0.953048	0.248908	1.4843	2.686255	1.875518	0.46315	2.599136	7.624058	1.390685	0.363206	1.625121	3.379012	1.875518	0.46315	2.599136	8.316815	27.71568	2.205204	27.02215	56.94304	0.167926	0.000696	0.002235	0.170858	0.993518	1822.448
9436.086	0.132704	0.002175	0	0.134879	1.477648	0.009011	0	1.486659	2.857034	0.046826	0	2.90386	0	0	0	2.90386	3.252544	0.053308	0	3.305852	0	0	0	3.305852	8.430285	0.388116	0	8.818401	0.08887	0.000542	0	0.089412	2.545161	842.9218
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2676.224	0.016132	0.009712	0.041402	0.067246	0.031313	0.000251	0.063617	0.095181	0.075324	0.035382	0.202272	0.312978	0.23682	0.058242	0.31125	0.91929	0.109913	0.051629	0.221462	0.383004	0.23682	0.058242	0.31125	0.989316	2.676969	0.31527	3.760281	6.75252	0.026027	0.000115	0.000316	0.026457	0.138243	282.2045
4586.353	0.044773	0.00085	0	0.045623	0.71699	0.005591	0	0.722582	0.963931	0.018294	0	0.982226	0	0	0	0.982226	1.097372	0.020827	0	1.118199	0	0	0	1.118199	2.587371	0.151634	0	2.739005	0.043122	0.000336	0	0.043458	1.15502	409.6971
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
954.6906	0.834442	0	0.289204	1.123646	0.185977	0	0.013224	0.1992	5.568477	0	2.170964	7.739442	3.524286	5.488228	5.826032	22.57799	6.658185	0	2.35974	9.017925	3.524286	5.488228	5.826032	23.85647	63.07329	0	12.30522	75.3785	0.008671	0	0.000767	0.009438	0.039491	100.6709
76670.79	0.829541	0	2.311019	3.140559	1.493126	0	0.90889	2.402016	3.517809	0	11.68772	15.20553	9.361992	2.368468	6.916157	33.85214	5.130139	0	12.79654	17.92668	9.361992	2.368468	6.916157	36.57329	194.5638	0	89.11814	283.6819	0.735272	0	0.022697	0.757969	6.157293	8084.839
1199.138	0.002144	0	0	0.002144	0.188925	0	0	0.188925	0.046169	0	0	0.046169	0	0	0	0.046169	0.052561	0	0	0.052561	0	0	0	0.052561	0.771595	0	0	0.771595	0.011362	0	0	0.011362	0.008761	107.1185
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
224.6914	0.00071	0	0.005627	0.006337	0.000888	0	0.0028	0.003688	0.002242	0	0.022841	0.025083	0.01222	0.004237	0.003712	0.045252	0.003272	0	0.025008	0.02828	0.01222	0.004237	0.003712	0.048449	0.341882	0	0.175307	0.517189	0.002095	0	0.000127	0.002221	0.031004	23.69343
1581.142	0.012159	0	0.00035	0.01251	0.021895	0	0.000415	0.02231	0.053313	0	0.001454	0.054767	0.457344	0.115646	0.002695	0.630452	0.077794	0	0.001592	0.079387	0.457344	0.115646	0.002695	0.655072	1.40626	0	0.031872	1.438132	0.015628	0	2.9E-06	0.015631	0.038072	166.7295
388.931	0.001848	0	0	0.001848	0.061276	0	0	0.061276	0.039787	0	0	0.039787	0	0	0	0.039787	0.045295	0	0	0.045295	0	0	0	0.045295	0.146574	0	0	0.146574	0.003685	0	0	0.003685	0.051302	34.74305
5055.439	0.039542	0.01411	0.050909	0.104561	0.065751	0.000405	0.035374	0.10153	0.195859	0.054539	0.278173	0.528571	0.162473	0.038656	0.305503	1.035202	0.285797	0.079583	0.304565	0.669945	0.162473	0.038656	0.305503	1.176576	4.551931	0.795513	5.955865	11.30331	0.049194	0.00029	0.000495	0.049978	0.131214	533.0897
15647.33	0.015444	0.003437	0	0.01888	2.357001	0.108243	0	2.465244	0.3325	0.073989	0	0.406489	0	0	0	0.406489	0.378526	0.084231	0	0.462757	0	0	0	0.462757	1.283984	2.276173	0	3.560157	0.141665	0.006506	0	0.148171	2.824128	1397.77
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
167.033	0.103488	0.059451	0	0.162938	0.030297	0.003754	0	0.034051	0.001479	0.000849	0	0.002328	0	0	0	0.002328	0.105617	0.060674	0	0.166291	0	0	0	0.166291	0.422037	0.121165	0	0.543203	0	0	0	0	0.173278	19.30647
1157.622	0.009629	0.002827	0.010525	0.02298	0.016869	7.64E-05	0.008867	0.025813	0.047389	0.010798	0.056043	0.114229	0.046835	0.011028	0.051143	0.223235	0.06915	0.015756	0.06136	0.146266	0.046835	0.011028	0.051143	0.255271	1.114168	0.083612	1.171663	2.369442	0.011298	5.46E-05	9.12E-05	0.011444	0.029587	122.0698
1127.426	0.0026	0.000444	0	0.003044	0.173176	0.00445	0	0.177626	0.055974	0.009569	0	0.065542	0	0	0	0.065542	0.063722	0.010893	0	0.074615	0	0	0	0.074615	0.183932	0.147691	0	0.331623	0.010409	0.000267	0	0.010676	0.168822	100.7125
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45.47181	0.028966	0.003527	0	0.032493	0.009073	0.000197	0	0.00927	0.000414	5.04E-05	0	0.000464	0	0	0	0.000464	0.029562	0.0036	0	0.033161	0	0	0	0.033161	0.130969	0.005106	0	0.136075	0	0	0	0	0.050616	5.255847
346.2528	0.005993	0.017582	0.002185	0.025759	0.012453	0.000602	0.001851	0.014906	0.029355	0.075773	0.012504	0.117631	0.016713	0.004097	0.010754	0.149195	0.042834	0.110568	0.01369	0.167092	0.016713	0.004097	0.010754	0.198656	0.676356	0.58614	0.302079	1.564574	0.003222	0.000185	1.66E-05	0.003423	0.017143	36.51192
599.6944	0.001806	0.00017	0	0.001976	0.08689	0.007592	0	0.094482	0.038873	0.003665	0	0.042539	0	0	0	0.042539	0.044254	0.004173	0	0.048427	0	0	0	0.048427	0.109199	0.087035	0	0.196234	0.005222	0.000456	0	0.005679	0.060626	53.57046
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
207.5522	0.497744	0.069604	0	0.567347	0.03825	0.004061	0	0.042311	0.007112	0.000995	0	0.008106	0	0	0	0.008106	0.507984	0.071036	0	0.57902	0	0	0	0.57902	1.681989	0.112727	0	1.794716	0	0	0	0	0.126135	23.98987
355.6559	0.000807	0	0.001117	0.001923	0.003304	0	0.000963	0.004267	0.002524	0	0.004581	0.007105	0.001786	0.000583	0.001269	0.010744	0.003683	0	0.005016	0.008699	0.001786	0.000583	0.001269	0.012337	0.11777	0	0.098552	0.216322	0.003507	0	9.52E-06	0.003516	0.012044	37.50347
472.6904	0.001206	0	0	0.001206	0.074473	0	0	0.074473	0.025961	0	0	0.025961	0	0	0	0.025961	0.029555	0	0	0.029555	0	0	0	0.029555	0.029831	0	0	0.029831	0.004479	0	0	0.004479	0.081911	42.22525
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2132.111	2.773741	0	0	2.773741	0.434645	0	0	0.434645	0.040587	0	0	0.040587	0	0	0	0.040587	2.831849	0	0	2.831849	0	0	0	2.831849	38.00958	0	0	38.00958	0	0	0	0	0.972756	246.4395
21.21374	0.001684	0	2.73E-07	0.001684	0.001935	0	4.57E-05	0.001981	0.009564	0	1.44E-06	0.009566	0.001049	0.000275	0.002394	0.013283	0.013956	0	1.58E-06	0.013958	0.001049	0.000275	0.002394	0.017675	0.447108	0	0.01318	0.460288	0.000208	0	1.52E-06	0.00021	0.000423	2.236963
79638.56	0.032354	0.101053	0	0.133407	11.76099	0.786096	0	12.54709	0.696575	2.175642	0	2.872218	0	0	0	2.872218	0.792998	2.476803	0	3.269801	0	0	0	3.269801	3.217609	31.8211	0	35.03871	0.706882	0.047247	0	0.75413	10.39642	7114.081
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1889.722	2.314852	0.519258	0	2.834109	0.347865	0.037367	0	0.385232	0.058047	0.008367	0	0.066414	0	0	0	0.066414	2.390927	0.53102	0	2.921948	0	0	0	2.921948	13.40357	1.377243	0	14.78082	0	0	0	0	1.069369	218.423
159469.8	1.317941	0	4.414764	5.732705	2.511239	0	2.107709	4.618949	4.945489	0	19.93881	24.8843	21.42193	6.007964	15.51342	67.82761	7.216446	0	21.83048	29.04693	21.42193	6.007964	15.51342	71.99024	410.0781	0	196.8688	606.947	1.532114	0	0.044407	1.576522	19.74463	16815.89
336.1906	0.002044	0	0	0.002044	0.052967	0	0	0.052967	0.044008	0	0	0.044008	0	0	0	0.044008	0.0501	0	0	0.0501	0	0	0	0.0501	0.548662	0	0	0.548662	0.003186	0	0	0.003186	0.004329	30.03177
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2832.544	0.009145	0	0.072283	0.081428	0.011414	0	0.035954	0.047367	0.028878	0	0.293537	0.322415	0.199267	0.072773	0.06566	0.660115	0.042139	0	0.321386	0.363525	0.199267	0.072773	0.06566	0.701225	4.38429	0	2.252987	6.637277	0.026901	0	0.001102	0.028003	0.374412	298.6882
16745.43	0.389447	0	0.714837	1.104284	0.534729	0	0.248933	0.783662	1.744164	0	3.75973	5.503894	4.825183	1.254289	3.647634	15.231	2.54508	0	4.116431	6.661511	4.825183	1.254289	3.647634	16.38862	82.43726	0	36.2796	118.7169	0.160212	0	0.005334	0.165546	1.805187	1765.785
3.984422	0.000135	0	0	0.000135	0.000628	0	0	0.000628	0.002904	0	0	0.002904	0	0	0	0.002904	0.003306	0	0	0.003306	0	0	0	0.003306	0.016667	0	0	0.016667	3.78E-05	0	0	3.78E-05	2.89E-05	0.355927
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16.46623	5.3E-05	0	0.000423	0.000476	6.57E-05	0	0.00021	0.000276	0.000168	0	0.001723	0.00189	0.000724	0.000249	0.000211	0.003073	0.000245	0	0.001886	0.002131	0.000724	0.000249	0.000211	0.003314	0.025481	0	0.013215	0.038696	0.000156	0	6.87E-06	0.000163	0.002297	1.736343
97549.46	0.847395	0	2.564429	3.411824	1.63754	0	1.179123	2.816663	3.301428	0	11.77684	15.07827	10.39218	2.736256	7.518302	35.72501	4.817436	0	12.89416	17.7116	10.39218	2.736256	7.518302	38.35834	238.2273	0	112.6905	350.9178	0.937057	0	0.027319	0.964376	10.30099	10286.47
318.0267	0.000769	0	0	0.000769	0.050105	0	0	0.050105	0.016561	0	0	0.016561	0	0	0	0.016561	0.018853	0	0	0.018853	0	0	0	0.018853	0.164511	0	0	0.164511	0.003013	0	0	0.003013	0.003166	28.4092
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419.645	0.001345	0	0.010755	0.0121	0.001672	0	0.005342	0.007014	0.004254	0	0.043752	0.048006	0.020255	0.006834	0.006075	0.08117	0.006208	0	0.047903	0.054111	0.020255	0.006834	0.006075	0.087274	0.646204	0	0.335769	0.981973	0.003958	0	0.00019	0.004149	0.058342	44.25104
16804.69	0.164532	0.065729	0.285158	0.515419	0.219283	0.001731	0.437152	0.658166	0.82501	0.239674	1.408873	2.473557	1.767208	0.432427	2.442497	7.11569	1.203853	0.349732	1.542539	3.096124	1.767208	0.432427	2.442497	7.738256	25.48605	2.180862	26.99619	54.66311	0.163244	0.000683	0.002205	0.166131	0.986872	1772.034
9292.769	0.124032	0.002162	0	0.126194	1.455206	0.008874	0	1.46408	2.670347	0.046536	0	2.716882	0	0	0	2.716882	3.040012	0.052978	0	3.09299	0	0	0	3.09299	7.791177	0.385713	0	8.176891	0.08752	0.000534	0	0.088054	2.617834	830.1194
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2587.837	0.014139	0.009363	0.039355	0.062856	0.028097	0.000243	0.061593	0.089934	0.065591	0.03398	0.191359	0.29093	0.230869	0.055613	0.301854	0.879265	0.09571	0.049584	0.209514	0.354807	0.230869	0.055613	0.301854	0.943142	2.495873	0.31107	3.71776	6.524702	0.025162	0.000113	0.000309	0.025583	0.135999	272.8842
4565.158	0.042884	0.00086	0	0.043744	0.713633	0.00561	0	0.719243	0.923265	0.018526	0	0.94179	0	0	0	0.94179	1.051075	0.02109	0	1.072166	0	0	0	1.072166	2.458138	0.153551	0	2.611689	0.04292	0.000337	0	0.043257	1.188744	407.8038
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
949.9586	0.811951	0	0.283029	1.09498	0.182972	0	0.012766	0.195737	5.372549	0	2.117482	7.490031	3.525024	5.510797	5.868178	22.39403	6.446995	0	2.301831	8.748825	3.525024	5.510797	5.868178	23.65283	61.13091	0	12.28895	73.41986	0.008638	0	0.000753	0.009391	0.039658	100.1719
74902.51	0.740716	0	2.146245	2.886961	1.361038	0	0.868305	2.229343	3.095864	0	10.71609	13.81195	9.183235	2.28576	6.759813	32.04076	4.516673	0	11.73276	16.24943	9.183235	2.28576	6.759813	34.47824	179.5198	0	83.37057	262.8904	0.718353	0	0.022135	0.740488	6.275301	7898.376
1157.314	0.002008	0	0	0.002008	0.182335	0	0	0.182335	0.043232	0	0	0.043232	0	0	0	0.043232	0.049217	0	0	0.049217	0	0	0	0.049217	0.746271	0	0	0.746271	0.010966	0	0	0.010966	0.008575	103.3824
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
262.5742	0.000825	0	0.006814	0.007639	0.001027	0	0.003375	0.004402	0.002619	0	0.027798	0.030418	0.014234	0.005029	0.00429	0.053971	0.003822	0	0.030436	0.034258	0.014234	0.005029	0.00429	0.057811	0.399111	0	0.213354	0.612465	0.002445	0	0.00015	0.002596	0.036193	27.68812
1509.443	0.010443	0	0.000329	0.010773	0.019666	0	0.000407	0.020073	0.045058	0	0.001348	0.046406	0.420385	0.104516	0.002452	0.573758	0.065748	0	0.001476	0.067224	0.420385	0.104516	0.002452	0.594576	1.160288	0	0.029419	1.189707	0.01492	0	2.75E-06	0.014922	0.036395	159.1689
385.2881	0.001794	0	0	0.001794	0.060702	0	0	0.060702	0.038631	0	0	0.038631	0	0	0	0.038631	0.043979	0	0	0.043979	0	0	0	0.043979	0.141642	0	0	0.141642	0.003651	0	0	0.003651	0.052435	34.41763
4892.347	0.032839	0.013896	0.048493	0.095228	0.057328	0.000395	0.034324	0.092046	0.160729	0.053369	0.262367	0.476465	0.15023	0.035337	0.279155	0.941187	0.234535	0.077875	0.287259	0.59967	0.15023	0.035337	0.279155	1.064392	3.709044	0.777987	5.58924	10.07627	0.047609	0.000281	0.000476	0.048366	0.128401	515.8919
15688.54	0.013619	0.003322	0	0.016941	2.3623	0.109436	0	2.471736	0.293205	0.071529	0	0.364733	0	0	0	0.364733	0.333791	0.08143	0	0.415221	0	0	0	0.415221	1.18244	2.320194	0	3.502635	0.141984	0.006578	0	0.148561	2.865016	1401.451
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
173.8819	0.108708	0.062684	0	0.171392	0.031438	0.004009	0	0.035447	0.001553	0.000896	0	0.002449	0	0	0	0.002449	0.110944	0.063974	0	0.174918	0	0	0	0.174918	0.437793	0.132595	0	0.570388	0	0	0	0	0.180614	20.09809
1080.685	0.008401	0.002723	0.010043	0.021167	0.015004	7.26E-05	0.00851	0.023587	0.041257	0.010408	0.053551	0.105216	0.046089	0.010627	0.050321	0.212253	0.060202	0.015187	0.058632	0.134021	0.046089	0.010627	0.050321	0.241058	0.963696	0.080587	1.117833	2.162116	0.010544	5.24E-05	8.73E-05	0.010684	0.027891	113.9569
1121.757	0.002531	0.000464	0	0.002995	0.172155	0.004578	0	0.176733	0.054491	0.00998	0	0.064471	0	0	0	0.064471	0.062034	0.011361	0	0.073396	0	0	0	0.073396	0.179022	0.154378	0	0.333401	0.010347	0.000275	0	0.010622	0.169702	100.2061
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46.11763	0.030215	0.003633	0	0.033848	0.009196	0.000206	0	0.009401	0.000432	5.19E-05	0	0.000484	0	0	0	0.000484	0.030836	0.003708	0	0.034544	0	0	0	0.034544	0.13367	0.00567	0	0.139339	0	0	0	0	0.052032	5.330494
348.0947	0.005538	0.017819	0.002188	0.025545	0.011986	0.000601	0.001906	0.014493	0.027074	0.076693	0.012483	0.11625	0.016993	0.004075	0.010753	0.148071	0.039507	0.11191	0.013667	0.165084	0.016993	0.004075	0.010753	0.196905	0.626593	0.593101	0.296377	1.516071	0.003239	0.000186	1.66E-05	0.003441	0.017297	36.70615
590.8433	0.001718	0.000167	0	0.001885	0.085566	0.007521	0	0.093088	0.036987	0.003597	0	0.040584	0	0	0	0.040584	0.042107	0.004095	0	0.046202	0	0	0	0.046202	0.104884	0.089217	0	0.194101	0.005143	0.000452	0	0.005595	0.062353	52.7798
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

211.7939	0.503875	0.071583	0	0.575458	0.038963	0.004212	0	0.043176	0.007199	0.001023	0	0.008222	0	0	0	0.008222	0.514242	0.073056	0	0.587297	0	0	0	0.587297	1.692952	0.119226	0	1.812178	0	0	0	0	0.129341	24.48014
354.2853	0.000792	0	0.001101	0.001893	0.003303	0	0.000941	0.004243	0.002473	0	0.004515	0.006988	0.00166	0.000526	0.001269	0.010443	0.003609	0	0.004944	0.008552	0.00166	0.000526	0.001269	0.012007	0.118926	0	0.100066	0.218992	0.003493	0	9.54E-06	0.003502	0.01211	37.35894
471.1033	0.001201	0	0	0.001201	0.074223	0	0	0.074223	0.025847	0	0	0.025847	0	0	0	0.025847	0.029425	0	0	0.029425	0	0	0	0.029425	0.029741	0	0	0.029741	0.004464	0	0	0.004464	0.084625	42.08347
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2110.718	2.886391	0	0	2.886391	0.430284	0	0	0.430284	0.042184	0	0	0.042184	0	0	0	0.042184	2.946804	0	0	2.946804	0	0	0	2.946804	38.89712	0	0	38.89712	0	0	0	0	0.972521	243.9668
19.11483	0.001244	0	2.71E-07	0.001244	0.001541	0	1.8E-05	0.001559	0.00671	0	1.43E-06	0.006711	0.000683	0.000188	0.001623	0.009206	0.009791	0	1.56E-06	0.009792	0.000683	0.000188	0.001623	0.012287	0.322787	0	0.01107	0.333857	0.000188	0	1.21E-06	0.000189	0.0004	2.015635
79569.63	0.031842	0.103239	0	0.135081	11.74734	0.788891	0	12.53623	0.685541	2.222709	0	2.90825	0	0	0	2.90825	0.780437	2.530384	0	3.310821	0	0	0	3.310821	3.093813	32.55322	0	35.64703	0.706061	0.047415	0	0.753477	10.5691	7107.923
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1922.436	2.239846	0.523555	0	2.763401	0.353237	0.038664	0	0.391901	0.054495	0.008334	0	0.062829	0	0	0	0.062829	2.311553	0.535299	0	2.846852	0	0	0	2.846852	13.29357	1.431804	0	14.72537	0	0	0	0	1.094998	222.2043
155005.8	1.198625	0	4.151946	5.350571	2.377976	0	2.042531	4.420507	4.425498	0	18.57525	23.00074	20.70948	5.737461	15.09328	64.54097	6.457676	0	20.33756	26.79523	20.70948	5.737461	15.09328	68.33546	386.3723	0	185.5949	571.9672	1.489211	0	0.043179	1.53239	20.06012	16345.16
299.9251	0.001688	0	0	0.001688	0.047253	0	0	0.047253	0.036337	0	0	0.036337	0	0	0	0.036337	0.041367	0	0	0.041367	0	0	0	0.041367	0.479607	0	0	0.479607	0.002842	0	0	0.002842	0.003908	26.79219
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2915.533	0.009355	0	0.076808	0.086162	0.011642	0	0.038049	0.049691	0.029667	0	0.313269	0.342936	0.210366	0.076062	0.070335	0.699699	0.04329	0	0.34299	0.38628	0.210366	0.076062	0.070335	0.743043	4.506961	0	2.404603	6.911565	0.027664	0	0.001159	0.028823	0.388713	307.4393
16046.73	0.343015	0	0.653965	0.99698	0.481967	0	0.235643	0.71761	1.52636	0	3.407107	4.933467	4.428388	1.163127	3.361911	13.88689	2.227261	0	3.730353	5.957614	4.428388	1.163127	3.361911	14.91104	74.19688	0	32.98493	107.1818	0.153549	0	0.005089	0.158638	1.772986	1692.107
3.291924	0.00011	0	0	0.00011	0.000519	0	0	0.000519	0.002378	0	0	0.002378	0	0	0	0.002378	0.002708	0	0	0.002708	0	0	0	0.002708	0.013871	0	0	0.013871	3.12E-05	0	0	3.12E-05	2.4E-05	0.294066
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21.11565	6.76E-05	0	0.000559	0.000627	8.36E-05	0	0.000277	0.000361	0.000215	0	0.002286	0.002501	0.000955	0.000323	0.000275	0.004054	0.000314	0	0.002503	0.002816	0.000955	0.000323	0.000275	0.004369	0.032636	0	0.017537	0.050173	0.0002	0	8.98E-06	0.000209	0.002946	2.226619
96619.25	0.791892	0	2.46762	3.259512	1.563345	0	1.164413	2.727758	3.042338	0	11.22033	14.26267	10.33697	2.675916	7.516385	34.79194	4.439373	0	12.28485	16.72422	10.33697	2.675916	7.516385	37.25349	228.5771	0	108.5226	337.0997	0.928086	0	0.027094	0.95518	10.63712	10188.38
318.3892	0.000771	0	0	0.000771	0.050162	0	0	0.050162	0.016602	0	0	0.016602	0	0	0	0.016602	0.0189	0	0	0.0189	0	0	0	0.0189	0.166792	0	0	0.166792	0.003017	0	0	0.003017	0.003234	28.44158
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
468.7657	0.001492	0	0.012426	0.013919	0.001849	0	0.006145	0.007995	0.004743	0	0.050787	0.05553	0.023398	0.007814	0.007027	0.093768	0.00692	0	0.055606	0.062526	0.023398	0.007814	0.007027	0.100764	0.720668	0	0.389788	1.110456	0.004417	0	0.000218	0.004634	0.065181	49.43076
16368.64	0.145763	0.063749	0.272262	0.481773	0.196111	0.001695	0.425197	0.623004	0.726031	0.231098	1.339536	2.296665	1.723093	0.413226	2.397675	6.83066	1.059423	0.337218	1.466623	2.863264	1.723093	0.413226	2.397675	7.397259	23.84576	2.159304	26.99517	53.00024	0.158973	0.00067	0.002177	0.161821	0.979803	1726.053
9145.7	0.115763	0.002143	0	0.117906	1.432189	0.008719	0	1.440909	2.492306	0.046141	0	2.538447	0	0	0	2.538447	2.837324	0.052528	0	2.889853	0	0	0	2.889853	7.187704	0.382439	0	7.570143	0.086136	0.000524	0	0.08666	2.677523	816.9817
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2504.783	0.01201	0.009024	0.037412	0.058447	0.02505	0.000236	0.059605	0.084891	0.054809	0.032614	0.180963	0.268386	0.225355	0.05298	0.294891	0.841613	0.079978	0.047591	0.198131	0.3257	0.225355	0.05298	0.294891	0.898927	2.291838	0.306747	3.671804	6.270389	0.02435	0.00011	0.000303	0.024762	0.133777	264.1262
4538.861	0.041042	0.000869	0	0.04191	0.709486	0.005614	0	0.715099	0.883604	0.018703	0	0.902307	0	0	0	0.902307	1.005924	0.021292	0	1.027217	0	0	0	1.027217	2.33635	0.155022	0	2.491372	0.04267	0.000338	0	0.043008	1.217139	405.4546
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945.8392	0.791376	0	0.277133	1.068509	0.18032	0	0.012326	0.192646	5.193046	0	2.066067	7.259113	3.552522	5.53331	5.912855	22.2578	6.253166	0	2.246161	8.499326	3.552522	5.53331	5.912855	23.49801	59.37384	0	12.27535	71.64919	0.00861	0	0.00074	0.009351	0.039829	99.73756
73155.89	0.666564	0	2.000194	2.666758	1.248928	0	0.834185	2.083112	2.748199	0	9.86094	12.60914	8.910775	2.192306	6.563309	30.27553	4.009951	0	10.79649	14.80644	8.910775	2.192306	6.563309	32.47283	167.4391	0	78.61749	246.0566	0.701595	0	0.021626	0.72322	6.380995	7714.197
1112.453	0.001872	0	0	0.001872	0.175267	0	0	0.175267	0.040295	0	0	0.040295	0	0	0	0.040295	0.045873	0	0	0.045873	0	0	0	0.045873	0.716885	0	0	0.716885	0.010541	0	0	0.010541	0.008366	99.37499
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
294.2949	0.000919	0	0.007891	0.008811	0.00114	0	0.003892	0.005032	0.002931	0	0.032344	0.035275	0.017009	0.005948	0.005335	0.063567	0.004277	0	0.035413	0.03969	0.017009	0.005948	0.005335	0.067982	0.446671	0	0.248251	0.694922	0.002738	0	0.000171	0.002909	0.040546	31.03303
1446.781	0.008908	0	0.00031	0.009218	0.0177	0	0.0004	0.0181	0.037614	0	0.001254	0.038868	0.390761	0.095449	0.002282	0.52736	0.054886	0	0.001373	0.056259	0.390761	0.095449	0.002282	0.544751	0.939145	0	0.027216	0.966361	0.0143	0	2.6E-06	0.014303	0.034936	152.5612
381.8867	0.001742	0	0	0.001742	0.060166	0	0	0.060166	0.037505	0	0	0.037505	0	0	0	0.037505	0.042697	0	0	0.042697	0	0	0	0.042697	0.13679	0	0	0.13679	0.003619	0	0	0.003619	0.053512	34.11379
4740.172	0.027679	0.013683	0.046286	0.087649	0.050344	0.000383	0.033231	0.083958	0.133964	0.052273	0.248057	0.434293	0.140606	0.032783	0.263647	0.871329	0.195479	0.076277	0.271591	0.543347	0.140606	0.032783	0.263647	0.980382	3.061443	0.761651	5.252684	9.075778	0.04613	0.000272	0.000459	0.046861	0.12571	499.8452
15705.04	0.011991	0.003223	0	0.015214	2.363983	0.110352	0	2.474335	0.258159	0.069397	0	0.327557	0	0	0	0.327557	0.293895	0.079003	0	0.372898	0	0	0	0.372898	1.090167	2.359866	0	3.450033	0.142085	0.006633	0	0.148717	2.899911	1402.925
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180.4754	0.113793	0.065734	0	0.179527	0.032536	0.004255	0	0.036791	0.001626	0.000939	0	0.002565	0	0	0	0.002565	0.116135	0.067086	0	0.183221	0	0	0	0.183221	0.453007	0.143873	0	0.59688	0	0	0	0	0.187606	20.8602
1012.172	0.007288	0.002626	0.009615	0.019529	0.013291	6.87E-05	0.008143	0.021503	0.035684	0.010047	0.051325	0.097056	0.047906	0.010591	0.052994	0.208548	0.05207	0.01466	0.056195	0.122925	0.047906	0.010591	0.052994	0.234417	0.830576	0.077784	1.063639	1.972	0.009872	5.03E-05	8.37E-05	0.010006	0.026384	106.7322
1116.04	0.002448	0.000481	0	0.002929	0.171141	0.004692	0	0.175833	0.052708	0.010346	0	0.063054	0	0	0	0.063054	0.060004	0.011778	0	0.071782	0	0	0	0.071782	0.173465	0.160412	0	0.333877	0.010286	0.000282	0	0.010568	0.170651	99.69544
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46.69685	0.031399	0.003725	0	0.035124	0.009305	0.000214	0	0.009519	0.000449	5.32E-05	0	0.000502	0	0	0	0.000502	0.032045	0.003802	0	0.035847	0	0	0	0.035847	0.136222	0.0062	0	0.142422	0	0	0	0	0.053371	5.397444
349.7352	0.005087	0.018041	0.002199	0.025328	0.011551	0.0006	0.001968	0.01412	0.02482	0.077549	0.012508	0.114877	0.017961	0.00412	0.011315	0.148273	0.036217	0.113159	0.013695	0.163071	0.017961	0.00412	0.011315	0.196467	0.577426	0.599575	0.290602	1.467602	0.003254	0.000187	1.66E-05	0.003457	0.017441	36.87914
581.5326	0.001629	0.000164	0	0.001793	0.084188	0.007433	0	0.091621	0.035073	0.003536	0	0.038609	0	0	0	0.038609	0.039928	0.004026	0	0.043953	0	0	0	0.043953	0.100437	0.091369	0	0.191806	0.00506	0.000447	0	0.005507	0.064011	51.94807
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
215.8777	0.509624	0.073549	0	0.583173	0.039645	0.004363	0	0.044008	0.007282	0.001051	0	0.008332	0	0	0	0.008332	0.520108	0.075062	0	0.595171	0	0	0	0.595171	1.702692	0.125682	0	1.828374	0	0	0	0	0.132435	24.95217
354.9387	0.000785	0	0.001089	0.001874	0.00325	0	0.000927	0.004178	0.002449	0	0.004464	0.006913	0.001539	0.000471	0.001276	0.010199	0.003573	0	0.004888	0.008461	0.001539	0.000471	0.001276	0.011747	0.119732	0	0.10112	0.220852	0.003499	0	9.59E-06	0.003509	0.012196	37.42784
465.4938	0.001189	0	0	0.001189	0.073339	0	0	0.073339	0.025603	0	0	0.025603	0	0	0	0.025603	0.029147	0	0	0.029147	0	0	0	0.029147	0.029527	0	0	0.029527	0.004411	0	0	0.004411	0.083701	41.58238
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2107.083	2.973577	0	0	2.973577	0.429543	0	0	0.429543	0.043447	0	0	0.043447	0	0	0	0.043447	3.035802	0	0	3.035802	0	0	0	3.035802	39.68673	0	0	39.68673	0	0	0	0	0.980891	243.5466
17.85073	0.001047	0	2.53E-07	0.001047	0.001391	0	1.68E-05	0.001408	0.005488	0	1.33E-06	0.005489	0.000566	0.000152	0.001322	0.007529	0.008008	0	1.46E-06	0.00801	0.000566	0.000152	0.001322	0.010049	0.27826	0	0.010158	0.288418	0.000175	0	1.07E-06	0.000176	0.000384	1.882337
79292.28	0.031397	0.105192	0	0.13659	11.7028	0.789733	0	12.49253	0.67598	2.264764	0	2.940743	0	0	0	2.940743	0.769551	2.578261	0	3.347812	0	0	0	3.347812	2.975671	33.20699	0	36.18266	0.703384	0.047466	0	0.75085	10.72731	7083.148
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1942.163	2.149576	0.525309	0	2.674886	0.356168	0.039755	0	0.395923	0.05085	0.008273	0	0.059123	0	0	0	0.059123	2.216743	0.536991	0	2.753733	0	0	0	2.753733	13.06727	1.478905	0	14.54618	0	0	0	0	1.116566	224.4844
151316.3	1.103581	0	3.916933	5.020514	2.273476	0	1.985479	4.258955	4.009724	0	17.37197	21.3817	20.35681	5.521635	14.88224	62.14238	5.850979	0	19.02012	24.8711	20.35681	5.521635	14.88224	65.63178	367.1455	0	175.6724	542.8179	1.45386	0	0.042055	1.495915	20.40529	15956.11
266.3242	0.00136	0	0	0.00136	0.041959	0	0	0.041959	0.029288	0	0	0.029288	0	0	0	0.029288	0.033342	0	0	0.033342	0	0	0	0.033342	0.417299	0	0	0.417299	0.002524	0	0	0.002524	0.003512	23.79064
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2991.951	0.009562	0	0.080924	0.090486	0.011857	0	0.039944	0.051801	0.030436	0	0.331314	0.361751	0.234917	0.081797	0.082706	0.761171	0.044413	0	0.362747	0.40716	0.234917	0.081797	0.082706	0.80658	4.622258	0	2.543263	7.165521	0.028368	0	0.00121	0.029578	0.401627	315.4975
15436.48	0.303277	0	0.59916	0.902437	0.435803	0	0.223665	0.659468	1.340147	0	3.091413	4.431561	4.152274	1.078555	3.116001	12.77839	1.95554	0	3.384708	5.340248	4.152274	1.078555	3.116001	13.68708	67.00458	0	30.02384	97.02842	0.147741	0	0.004864	0.152605	1.748357	1627.758
1.568068	4.9E-05	0	0	4.9E-05	0.000247	0	0	0.000247	0.001055	0	0	0.001055	0	0	0	0.001055	0.001201	0	0	0.001201	0	0	0	0.001201	0.007556	0	0	0.007556	1.49E-05	0	0	1.49E-05	1.18E-05	0.140075
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26.45954	8.45E-05	0	0.000716	0.0008	0.000104	0	0.000353	0.000457	0.000269	0	0.002933	0.003203	0.001227	0.000412	0.000352	0.005193	0.000393	0	0.003212	0.003605	0.001227	0.000412	0.000352	0.005595	0.040871	0	0.022506	0.063376	0.00025	0	1.14E-05	0.000262	0.003689	2.790126
95999.73	0.748263	0	2.381884	3.130148	1.504277	0	1.154804	2.659081	2.834936	0	10.72913	13.56407	10.26963	2.619429	7.474899	33.92802	4.136732	0	11.74705	15.88378	10.26963	2.619429	7.474899	36.24774	221.3665	0	105.054	326.4206	0.922153	0	0.026902	0.949055	10.9693	10123.05
318.7653	0.000769	0	0	0.000769	0.050222	0	0	0.050222	0.016555	0	0	0.016555	0	0	0	0.016555	0.018846	0	0	0.018846	0	0	0	0.018846	0.168994	0	0	0.168994	0.00302	0	0	0.00302	0.003297	28.47518
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
520.5342	0.00165	0	0.014164	0.015815	0.002038	0	0.00698	0.009018	0.005264	0	0.058111	0.063375	0.026507	0.008958	0.007931	0.106771	0.007681	0	0.063624	0.071305	0.026507	0.008958	0.007931	0.114701	0.79949	0	0.446019	1.245508	0.0049	0	0.000246	0.005146	0.072337	54.88968
15916.73	0.128684	0.061795	0.260192	0.450671	0.1758	0.001658	0.412569	0.590028	0.635534	0.222775	1.275239	2.133548	1.649905	0.390517	2.293617	6.467586	0.92737	0.325073	1.396226	2.648668	1.649905	0.390517	2.293617	6.982707	22.3934	2.136327	26.96875	51.49847	0.154548	0.000658	0.002148	0.157353	0.969857	1678.4
8958.217	0.107272	0.002121	0	0.109393	1.402816	0.008554	0	1.411371	2.309505	0.045666	0	2.355171	0	0	0	2.355171	2.629218	0.051988	0	2.681206	0	0	0	2.681206	6.590437	0.378505	0	6.968942	0.084369	0.000514	0	0.084884	2.719203	800.2339
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2418.883	0.010222	0.008682	0.035483	0.054387	0.022287	0.000229	0.057519	0.080035	0.045901	0.031246	0.170695	0.247841	0.215854	0.049874	0.280793	0.794362	0.066978	0.045594	0.186889	0.299461	0.215854	0.049874	0.280793	0.845982	2.128118	0.301867	3.621342	6.051327	0.02351	0.000108	0.000296	0.023913	0.131203	255.0682
4488.88	0.038986	0.000875	0	0.03986	0.70162	0.005605	0	0.707225	0.83934	0.018833	0	0.858173	0	0	0	0.858173	0.955533	0.02144	0	0.976973	0	0	0	0.976973	2.20889	0.156096	0	2.364986	0.042197	0.000337	0	0.042534	1.23771	400.9899
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
942.4138	0.774176	0	0.270861	1.045037	0.177927	0	0.011902	0.18983	5.040238	0	2.011368	7.051606	3.57201	5.552682	5.957395	22.13369	6.089701	0	2.186929	8.27663	3.57201	5.552682	5.957395	23.35872	57.82753	0	12.2579	70.08543	0.00859	0	0.000727	0.009317	0.039978	99.37635
71727.12	0.606701	0	1.872137	2.478838	1.155991	0	0.806332	1.962323	2.466747	0	9.115271	11.58202	8.765207	2.11788	6.445271	28.91038	3.599471	0	9.980075	13.57955	8.765207	2.11788	6.445271	30.9079	157.6492	0	74.58073	232.2299	0.68793	0	0.021165	0.709096	6.49523	7563.535
1070.402	0.001708	0	0	0.001708	0.168642	0	0	0.168642	0.03678	0	0	0.03678	0	0	0	0.03678	0.041872	0	0	0.041872	0	0	0	0.041872	0.687239	0	0	0.687239	0.010143	0	0	0.010143	0.008164	95.61856
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
326.7974	0.001017	0	0.008988	0.010006	0.001256	0	0.004417	0.005673	0.003255	0	0.036981	0.040235	0.019654	0.006735	0.006294	0.072918	0.004749	0	0.040489	0.045238	0.019654	0.006735	0.006294	0.077921	0.495625	0	0.283844	0.779469	0.003038	0	0.000193	0.003231	0.044971	34.46038

1391.799	0.007589	0	0.000293	0.007882	0.015993	0	0.000393	0.016387	0.031227	0	0.001172	0.032399	0.360225	0.086186	0.00208	0.480891	0.045566	0	0.001283	0.04685	0.360225	0.086186	0.00208	0.495341	0.75262	0	0.025295	0.777915	0.013757	0	2.47E-06	0.013759	0.033645	146.7635
378.2132	0.001686	0	0	0.001686	0.059588	0	0	0.059588	0.036302	0	0	0.036302	0	0	0	0.036302	0.041327	0	0	0.041327	0	0	0	0.041327	0.131675	0	0	0.131675	0.003584	0	0	0.003584	0.054502	33.78563
4584.499	0.02346	0.013446	0.044184	0.08109	0.044526	0.00037	0.032139	0.077035	0.112074	0.051149	0.234491	0.397715	0.133543	0.030443	0.248035	0.809735	0.163539	0.074636	0.256738	0.494913	0.133543	0.030443	0.248035	0.906934	2.524775	0.744971	4.942596	8.212343	0.044616	0.000264	0.000442	0.045322	0.122765	483.4297
15674.93	0.010584	0.003142	0	0.013726	2.358667	0.110925	0	2.469592	0.227861	0.067655	0	0.295516	0	0	0	0.295516	0.259403	0.07702	0	0.336423	0	0	0	0.336423	1.00632	2.393696	0	3.400017	0.141765	0.006667	0	0.148432	2.922738	1400.236
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
185.7515	0.117813	0.068452	0	0.186265	0.033389	0.004478	0	0.037867	0.001683	0.000978	0	0.002661	0	0	0	0.002661	0.120237	0.06986	0	0.190098	0	0	0	0.190098	0.464186	0.154179	0	0.618365	0	0	0	0	0.193391	21.47004
946.5929	0.006275	0.002528	0.009186	0.017988	0.011785	6.49E-05	0.007854	0.019704	0.030513	0.00968	0.049073	0.089266	0.047471	0.010223	0.052443	0.199404	0.044524	0.014125	0.053729	0.112378	0.047471	0.010223	0.052443	0.222516	0.709882	0.074939	1.013932	1.798753	0.00923	4.82E-05	8E-05	0.009358	0.024935	99.81704
1108.925	0.002372	0.000497	0	0.002869	0.169913	0.004799	0	0.174712	0.051077	0.010699	0	0.061775	0	0	0	0.061775	0.058147	0.01218	0	0.070326	0	0	0	0.070326	0.168642	0.166227	0	0.334869	0.010212	0.000288	0	0.010501	0.171642	99.05986
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47.06355	0.032451	0.003807	0	0.036258	0.009373	0.000221	0	0.009594	0.000464	5.44E-05	0	0.000518	0	0	0	0.000518	0.033119	0.003886	0	0.037004	0	0	0	0.037004	0.138553	0.006691	0	0.145244	0	0	0	0	0.054372	5.439829
351.0053	0.004658	0.018236	0.002202	0.025097	0.011102	0.000599	0.002018	0.013719	0.022647	0.078296	0.012485	0.113428	0.018564	0.00413	0.011576	0.147697	0.033047	0.114249	0.01367	0.160966	0.018564	0.00413	0.011576	0.195234	0.533401	0.605235	0.284889	1.423525	0.003265	0.000188	1.66E-05	0.00347	0.017563	37.01307
571.0004	0.001535	0.000161	0	0.001697	0.082641	0.00732	0	0.089961	0.033054	0.003476	0	0.03653	0	0	0	0.03653	0.03763	0.003957	0	0.041586	0	0	0	0.041586	0.095655	0.093378	0	0.189033	0.004967	0.00044	0	0.005407	0.065509	51.00724
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
219.5096	0.514396	0.075424	0	0.58982	0.040242	0.004506	0	0.044748	0.00735	0.001078	0	0.008427	0	0	0	0.008427	0.524978	0.076976	0	0.601955	0	0	0	0.601955	1.709551	0.131858	0	1.841409	0	0	0	0	0.135211	25.37196
349.6613	0.000762	0	0.00107	0.001831	0.003211	0	0.000898	0.004109	0.002376	0	0.004399	0.006775	0.001411	0.000423	0.00125	0.009859	0.003467	0	0.004816	0.008283	0.001411	0.000423	0.00125	0.011368	0.120476	0	0.100933	0.221409	0.003447	0	9.5E-06	0.003457	0.012174	36.87135
451.8876	0.001156	0	0	0.001156	0.071195	0	0	0.071195	0.024892	0	0	0.024892	0	0	0	0.024892	0.028338	0	0	0.028338	0	0	0	0.028338	0.028687	0	0	0.028687	0.004282	0	0	0.004282	0.08197	40.36694
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2058.961	3.060033	0	0	3.060033	0.419733	0	0	0.419733	0.044665	0	0	0.044665	0	0	0	0.044665	3.124018	0	0	3.124018	0	0	0	3.124018	40.18023	0	0	40.18023	0	0	0	0	0.967364	237.9845
16.76096	0.000919	0	2.26E-07	0.00092	0.001267	0	1.27E-05	0.001279	0.004708	0	1.19E-06	0.004709	0.000472	0.000124	0.001082	0.006387	0.00687	0	1.3E-06	0.006871	0.000472	0.000124	0.001082	0.008549	0.25203	0	0.009187	0.261217	0.000165	0	9.51E-07	0.000166	0.000369	1.767422
78815.2	0.030977	0.1069	0	0.137877	11.62907	0.788298	0	12.41737	0.666932	2.301519	0	2.96845	0	0	0	2.96845	0.759251	2.620104	0	3.379355	0	0	0	3.379355	2.880467	33.7799	0	36.66037	0.698953	0.04738	0	0.746333	10.86929	7040.531
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1957.387	2.062355	0.525007	0	2.587362	0.358405	0.040622	0	0.399026	0.047602	0.008192	0	0.055794	0	0	0	0.055794	2.125446	0.536595	0	2.662041	0	0	0	2.662041	12.84928	1.5187	0	14.36798	0	0	0	0	1.133199	226.2441
147872.1	1.022716	0	3.706269	4.728985	2.186738	0	1.9359	4.122638	3.658721	0	16.30492	19.96364	19.85887	5.283563	14.54196	59.64803	5.338798	0	17.85183	23.19063	19.85887	5.283563	14.54196	62.87502	350.9637	0	166.9388	517.9026	1.420831	0	0.041035	1.461866	20.72131	15592.93
234.8271	0.001118	0	0	0.001118	0.036997	0	0	0.036997	0.024071	0	0	0.024071	0	0	0	0.024071	0.027403	0	0	0.027403	0	0	0	0.027403	0.358635	0	0	0.358635	0.002225	0	0	0.002225	0.003143	20.97701
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3053.986	0.009719	0	0.084657	0.094376	0.012017	0	0.041645	0.053662	0.03104	0	0.347834	0.378874	0.259157	0.086451	0.095081	0.819563	0.045294	0	0.380834	0.426128	0.259157	0.086451	0.095081	0.866817	4.714533	0	2.670209	7.384741	0.028936	0	0.001256	0.030192	0.412473	322.039
14864.93	0.269483	0	0.550358	0.819841	0.395154	0	0.212751	0.607905	1.182776	0	2.812178	3.994954	3.978466	1.012236	2.959065	11.94472	1.725904	0	3.078981	4.804885	3.978466	1.012236	2.959065	12.75465	60.94358	0	27.4282	88.37178	0.142296	0	0.004659	0.146955	1.726431	1567.488
0.943798	3.36E-05	0	0	3.36E-05	0.000149	0	0	0.000149	0.000723	0	0	0.000723	0	0	0	0.000723	0.000823	0	0	0.000823	0	0	0	0.000823	0.005113	0	0	0.005113	8.94E-06	0	0	8.94E-06	7.37E-06	0.084309
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32.39694	0.000103	0	0.000892	0.000995	0.000127	0	0.000439	0.000566	0.000329	0	0.003664	0.003994	0.00153	0.00051	0.000436	0.006469	0.000481	0	0.004012	0.004493	0.00153	0.00051	0.000436	0.006968	0.050007	0	0.028116	0.078123	0.000306	0	1.41E-05	0.00032	0.004515	3.416217
95356.11	0.709923	0	2.30432	3.014243	1.453232	0	1.149035	2.602267	2.652737	0	10.28622	12.93895	10.09038	2.543541	7.33901	32.91188	3.870868	0	11.26211	15.13298	10.09038	2.543541	7.33901	35.10591	215.5255	0	102.0683	317.5938	0.915956	0	0.026736	0.942692	11.26998	10055.18
318.2435	0.000773	0	0	0.000773	0.050139	0	0	0.050139	0.016633	0	0	0.016633	0	0	0	0.016633	0.018936	0	0	0.018936	0	0	0	0.018936	0.170852	0	0	0.170852	0.003016	0	0	0.003016	0.003351	28.42857
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573.0757	0.001809	0	0.015961	0.01777	0.002228	0	0.00784	0.010068	0.00579	0	0.065706	0.071496	0.030216	0.01016	0.009133	0.121004	0.008449	0	0.07194	0.080388	0.030216	0.01016	0.009133	0.129897	0.879321	0	0.504331	1.383651	0.00539	0	0.000275	0.005665	0.079594	60.43012
15467.07	0.114239	0.0599	0.249106	0.423245	0.157575	0.001622	0.399966	0.559163	0.559666	0.214861	1.216779	1.991306	1.5699	0.368085	2.184714	6.114005	0.816663	0.313525	1.33222	2.462408	1.5699	0.368085	2.184714	6.585106	21.06988	2.112729	26.90114	50.08375	0.150145	0.000645	0.002117	0.152908	0.957269	1630.983
8756.471	0.09942	0.002094	0	0.101515	1.37121	0.008375	0	1.379586	2.140463	0.045092	0	2.185555	0	0	0	2.185555	2.436774	0.051334	0	2.488109	0	0	0	2.488109	6.041795	0.373747	0	6.415542	0.082468	0.000504	0	0.082972	2.742843	782.2121
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2333.118	0.008717	0.008341	0.033661	0.050719	0.019806	0.000221	0.055421	0.075448	0.038469	0.029902	0.161119	0.22949	0.209424	0.047121	0.271212	0.757247	0.056134	0.043632	0.176405	0.276172	0.209424	0.047121	0.271212	0.803929	1.981033	0.2966	3.567255	5.844888	0.022672	0.000105	0.000289	0.023065	0.128314	246.0244
4429.172	0.037123	0.000878	0	0.038001	0.692233	0.005585	0	0.697818	0.799229	0.018911	0	0.818141	0	0	0	0.818141	0.909869	0.021529	0	0.931399	0	0	0	0.931399	2.095971	0.156747	0	2.252718	0.041633	0.000336	0	0.041969	1.250489	395.6562
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938.7017	0.757507	0	0.265358	1.022864	0.175717	0	0.011518	0.187234	4.894199	0	1.963037	6.857236	3.555747	5.572939	5.989125	21.97505	5.932136	0	2.134596	8.066732	3.555747	5.572939	5.989125	23.18454	56.39745	0	12.25241	68.64986	0.008565	0	0.000715	0.00928	0.040109	98.98492
70356.11	0.555496	0	1.760394	2.31589	1.077702	0	0.784089	1.861791	2.2263	0	8.468824	10.69512	8.524652	2.032093	6.250937	27.50281	3.248612	0	9.272296	12.52091	8.524652	2.032093	6.250937	29.32859	149.4608	0	71.10039	220.5612	0.674796	0	0.020745	0.695542	6.600732	7418.964
1026.533	0.001566	0	0	0.001566	0.161731	0	0	0.161731	0.033723	0	0	0.033723	0	0	0	0.033723	0.038391	0	0	0.038391	0	0	0	0.038391	0.653735	0	0	0.653735	0.009727	0	0	0.009727	0.007952	91.69979
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358.5718	0.001112	0	0.010088	0.0112	0.001369	0	0.004942	0.006311	0.003569	0	0.041646	0.045215	0.023234	0.007664	0.007767	0.083879	0.005207	0	0.045597	0.050805	0.023234	0.007664	0.007767	0.089469	0.543334	0	0.319664	0.862998	0.00333	0	0.000215	0.003545	0.049297	37.81095
1340.425	0.006447	0	0.000278	0.006725	0.014491	0	0.000386	0.014877	0.02571	0	0.001099	0.026809	0.328789	0.077347	0.001879	0.434823	0.037516	0	0.001203	0.038719	0.328789	0.077347	0.001879	0.446733	0.592933	0	0.023576	0.616509	0.013249	0	2.35E-06	0.013251	0.032447	141.3461
374.4093	0.00163	0	0	0.00163	0.058988	0	0	0.058988	0.035094	0	0	0.035094	0	0	0	0.035094	0.039952	0	0	0.039952	0	0	0	0.039952	0.126589	0	0	0.126589	0.003548	0	0	0.003548	0.055405	33.44584
4412.84	0.019953	0.013165	0.042138	0.075256	0.039074	0.000356	0.03058	0.07001	0.093967	0.049915	0.221491	0.365373	0.126507	0.028155	0.233263	0.753298	0.137116	0.072836	0.242504	0.452457	0.126507	0.028155	0.233263	0.840382	2.077245	0.726747	4.639119	7.443112	0.042945	0.000256	0.000425	0.043625	0.119283	465.3284
15553.34	0.00937	0.003068	0	0.012439	2.339475	0.110961	0	2.450436	0.201744	0.066063	0	0.267807	0	0	0	0.267807	0.22967	0.075208	0	0.304878	0	0	0	0.304878	0.93276	2.416209	0	3.348969	0.140612	0.006669	0	0.147281	2.92774	1389.374
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189.8715	0.121074	0.070714	0	0.191788	0.034037	0.00467	0	0.038707	0.00173	0.00101	0	0.00274	0	0	0	0.00274	0.123565	0.072169	0	0.195734	0	0	0	0.195734	0.473023	0.163349	0	0.636372	0	0	0	0	0.197748	21.94625
885.9652	0.005488	0.002435	0.008816	0.01674	0.010432	6.13E-05	0.007461	0.017955	0.026633	0.009345	0.047223	0.083201	0.048036	0.010022	0.0531	0.194359	0.038863	0.013636	0.051703	0.104202	0.048036	0.010022	0.0531	0.21536	0.621386	0.07234	0.966307	1.660033	0.008636	4.63E-05	7.68E-05	0.008759	0.023553	93.42392
1101.936	0.002284	0.000511	0	0.002795	0.168722	0.004889	0	0.17361	0.049181	0.011004	0	0.060185	0	0	0	0.060185	0.055989	0.012527	0	0.068516	0	0	0	0.068516	0.163423	0.171361	0	0.334785	0.010141	0.000294	0	0.010435	0.172683	98.43547
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47.20658	0.033214	0.003875	0	0.037089	0.009396	0.000228	0	0.009623	0.000475	5.54E-05	0	0.00053	0	0	0	0.00053	0.033897	0.003955	0	0.037852	0	0	0	0.037852	0.13997	0.00712	0	0.14709	0	0	0	0	0.055156	5.45636
351.634	0.00431	0.018388	0.002205	0.024902	0.01069	0.000596	0.002047	0.013332	0.020904	0.078874	0.012464	0.112242	0.020468	0.004292	0.012838	0.14984	0.030503	0.115093	0.013646	0.159242	0.020468	0.004292	0.012838	0.196841	0.49369	0.609617	0.280602	1.383909	0.003271	0.000189	1.66E-05	0.003476	0.017648	37.07937
558.5854	0.001434	0.000158	0	0.001592	0.080829	0.007177	0	0.088005	0.030868	0.003411	0	0.034279	0	0	0	0.034279	0.03514	0.003883	0	0.039024	0	0	0	0.039024	0.090379	0.095141	0	0.18552	0.004858	0.000431	0	0.005289	0.066754	49.89821
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222.4187	0.517631	0.077139	0	0.594771	0.040704	0.004638	0	0.045342	0.007396	0.001102	0	0.008498	0	0	0	0.008498	0.528281	0.078726	0	0.607007	0	0	0	0.607007	1.711938	0.137553	0	1.849491	0	0	0	0	0.137479	25.70821
341.7786	0.000732	0	0.00105	0.001782	0.003157	0	0.000872	0.004029	0.002281	0	0.004324	0.006605	0.001362	0.000392	0.001255	0.009614	0.003328	0	0.004734	0.008062	0.001362	0.000392	0.001255	0.011071	0.120015	0	0.099451	0.219467	0.00337	0	9.33E-06	0.003379	0.012055	36.04013
420.7743	0.001086	0	0	0.001086	0.066293	0	0	0.066293	0.023391	0	0	0.023391	0	0	0	0.023391	0.026629	0	0	0.026629	0	0	0	0.026629	0.026981	0	0	0.026981	0.003987	0	0	0.003987	0.077549	37.5876
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1969.821	3.169	0	0	3.169	0.401561	0	0	0.401561	0.046193	0	0	0.046193	0	0	0	0.046193	3.235195	0	0	3.235195	0	0	0	3.235195	40.57631	0	0	40.57631	0	0	0	0	0.938313	227.6813
15.73177	0.00078	0	1.99E-07	0.00078	0.001133	0	1.03E-05	0.001143	0.003798	0	1.05E-06	0.003799	0.000373	9.54E-05	0.000834	0.0051	0.005541	0	1.15E-06	0.005542	0.000373	9.54E-05	0.000834	0.006844	0.219364	0	0.007808	0.227172	0.000155	0	8.33E-07	0.000156	0.000354	1.658895
78266.06	0.030615	0.108348	0	0.138963	11.54539	0.785461	0	12.33085	0.659128	2.332707	0	2.991835	0	0	0	2.991835	0.750367	2.655609	0	3.405976	0	0	0	3.405976	2.796569	34.27002	0	37.06659	0.693923	0.047209	0	0.741133	10.99598	6991.476
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1965.196	1.97052	0.523219	0	2.493739	0.359317	0.041302	0	0.400618	0.044432	0.008096	0	0.052528	0	0	0	0.052528	2.029605	0.53469	0	2.564295	0	0	0	2.564295	12.59285	1.550973	0	14.14382	0	0	0	0	1.145923	227.1467
144777.1	0.954197	0	3.514592	4.46879	2.113803	0	1.892084	4.005887	3.362002	0	15.34195	18.70396	19.13956	5.023199	14.01112	56.87784	4.905825	0	16.79751	21.70333	19.13956	5.023199	14.01112	59.87722	337.0652	0	159.0886	496.1538	1.391171	0	0.040097	1.431269	21.00848	15266.56
206.7634	0.000872	0	0	0.000872	0.032576	0	0	0.032576	0.018771	0	0	0.018771	0	0	0	0.018771	0.02137	0	0	0.02137	0	0	0	0.02137	0.301368	0	0	0.301368	0.001959	0	0	0.001959	0.002806	18.47009
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3101.824	0.00983	0	0.087978	0.097809	0.012124	0	0.043141	0.055265	0.031496	0	0.362691	0.394187	0.281201	0.090496	0.106317	0.872202	0.045959	0	0.397101	0.44306	0.281201	0.090496	0.106317	0.921075	4.784626	0	2.784389	7.569015	0.029369	0	0.001296	0.030665	0.421267	327.0834
14338.85	0.238583	0	0.505407	0.74399	0.357957	0	0.20277	0.560727	1.038273	0	2.554954	3.593226	3.737705	0.936776	2.747318	11.01503	1.515045	0	2.797353	4.312398	3.737705	0.936776	2.747318	11.7342	55.30741	0	25.0128	80.32022	0.137286	0	0.004468	0.141754	1.706609	1512.014
0.527811	1.69E-05	0	0	1.69E-05	8.32E-05	0	0	8.32E-05	0.000365	0	0	0.000365	0	0	0	0.000365	0.000415	0	0	0.000415	0	0	0	0.000415	0.00259	5E-06	0	0.00259	5E-06	0	0	5E-06	4.14E-06	0.047149
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38.93199	0.000124	0	0.001088	0.001212	0.000152	0	0.000535	0.000686	0.000396	0	0.004481	0.004877	0.00187	0.000622	0.000531	0.0079	0.000577	0	0.004906	0.005484	0.00187	0.000622	0.000531	0.008506	0.060051	0	0.034384	0.094435	0.000368	0	1.72E-05	0.000385	0.005425	4.10533
94747.55	0.676764	0	2.232839	2.909602	1.409462	0	1.145908	2.55537	2.49408	0	9.881192	12.37527	9.791476	2.457451	7.105116	31.72931	3.639355	0	10.81866	14.45802	9.791476	2.457451	7.105116	33.81206	210.6522	0	99.45977	310.1119	0.910093	0	0.026583	0.936676	11.54082	9991.011
317.4943	0.000777	0	0	0.000777	0.050021	0	0	0.050021	0.016723	0	0	0.016723	0	0	0	0.016723	0.019038	0	0	0.019038	0	0	0	0.019038	0.17262	0	0	0.17262	0.003008	0	0	0.003008	0.003398	28.36164

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625.8038	0.001968	0	0.0178	0.019768	0.002418	0	0.008717	0.011135	0.006316	0	0.073505	0.079821	0.035076	0.011669	0.010924	0.13749	0.009217	0	0.080478	0.089695	0.035076	0.011669	0.010924	0.147365	0.959283	0	0.56421	1.523493	0.005882	0	0.000305	0.006187	0.086882	65.99023
14993.37	0.099435	0.057952	0.236394	0.393781	0.139918	0.001582	0.387277	0.528777	0.481631	0.206793	1.145339	1.833763	1.450955	0.340182	2.020101	5.645002	0.702795	0.301752	1.254003	2.258549	1.450955	0.340182	2.020101	6.069788	19.17208	2.083748	26.46979	47.72562	0.145517	0.000632	0.002076	0.148225	0.940777	1581.032
8540.648	0.092037	0.002065	0	0.094102	1.337391	0.008191	0	1.345583	1.981497	0.044462	0	2.02596	0	0	0	2.02596	2.255803	0.050617	0	2.30642	0	0	0	2.30642	5.540204	0.368525	0	5.908729	0.080434	0.000493	0	0.080927	2.750855	762.9327
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2246.883	0.007422	0.008002	0.031823	0.047247	0.017595	0.000213	0.05333	0.071139	0.032116	0.028573	0.151387	0.212076	0.19728	0.043905	0.254689	0.70795	0.046864	0.041694	0.165749	0.254308	0.19728	0.043905	0.254689	0.750181	1.841925	0.290867	3.504341	5.637133	0.021829	0.000102	0.000281	0.022213	0.125147	236.931
4356.227	0.035335	0.000879	0	0.036214	0.680775	0.005551	0	0.686325	0.760733	0.018934	0	0.779667	0	0	0	0.779667	0.866044	0.021556	0	0.887599	0	0	0	0.887599	1.990752	0.156938	0	2.14769	0.040944	0.000334	0	0.041277	1.255855	389.14
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
935.5366	0.742609	0	0.260382	1.002991	0.173746	0	0.011164	0.18491	4.763543	0	1.919266	6.682809	3.545414	5.595382	6.023567	21.84717	5.791118	0	2.087207	7.878325	3.545414	5.595382	6.023567	23.04269	55.11706	0	12.2557	67.37276	0.008544	0	0.000705	0.009249	0.04023	98.65117
69113.56	0.511825	0	1.662968	2.174793	1.011871	0	0.766688	1.778559	2.019771	0	7.908885	9.928655	8.156175	1.93762	5.956727	25.97918	2.947245	0	8.659233	11.60648	8.156175	1.93762	5.956727	27.657	142.216	0	68.09774	210.3138	0.662893	0	0.020364	0.683258	6.699263	7287.938
985.3252	0.001414	0	0	0.001414	0.155238	0	0	0.155238	0.030448	0	0	0.030448	0	0	0	0.030448	0.034663	0	0	0.034663	0	0	0	0.034663	0.618223	0	0	0.618223	0.009336	0	0	0.009336	0.007749	88.01871
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390.2111	0.001205	0	0.011206	0.012411	0.00148	0	0.005473	0.006953	0.00388	0	0.046402	0.050282	0.02539	0.008307	0.008433	0.092412	0.005662	0	0.050804	0.056467	0.02539	0.008307	0.008433	0.098596	0.5907	0	0.356179	0.946878	0.003621	0	0.000236	0.003858	0.053606	41.14727
1292.572	0.005275	0	0.000264	0.005539	0.013071	0	0.000379	0.01345	0.019896	0	0.001034	0.02093	0.293803	0.068359	0.001661	0.384753	0.029032	0	0.001132	0.030164	0.293803	0.068359	0.001661	0.393987	0.419549	0	0.021976	0.441525	0.012776	0	2.24E-06	0.012778	0.031304	136.3001
370.7495	0.001575	0	0	0.001575	0.058412	0	0	0.058412	0.033917	0	0	0.033917	0	0	0	0.033917	0.038613	0	0	0.038613	0	0	0	0.038613	0.121632	0	0	0.121632	0.003513	0	0	0.003513	0.056267	33.11891
4228.542	0.016933	0.012845	0.040137	0.069915	0.034183	0.000341	0.029145	0.06367	0.078374	0.048579	0.20895	0.335904	0.117474	0.025761	0.214866	0.694005	0.114364	0.070887	0.228774	0.414025	0.117474	0.025761	0.214866	0.772125	1.701155	0.70709	4.344683	6.752928	0.041149	0.000247	0.000408	0.041803	0.115319	445.8945
15341.3	0.008333	0.002995	0	0.011328	2.306661	0.110368	0	2.417029	0.179403	0.064485	0	0.243888	0	0	0	0.243888	0.204236	0.073412	0	0.277648	0	0	0	0.277648	0.866891	2.424635	0	3.291526	0.138639	0.006634	0	0.145273	2.913401	1370.433
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
192.6926	0.123373	0.072528	0	0.195901	0.034453	0.004829	0	0.039282	0.001763	0.001036	0	0.002799	0	0	0	0.002799	0.125911	0.07402	0	0.199931	0	0	0	0.199931	0.478686	0.171191	0	0.649877	0	0	0	0	0.200714	22.27233
826.2313	0.004773	0.002339	0.008381	0.015494	0.009195	5.78E-05	0.00708	0.016333	0.023047	0.008996	0.044856	0.0769	0.046667	0.009573	0.051507	0.184647	0.03363	0.013128	0.049112	0.09587	0.046667	0.009573	0.051507	0.203617	0.536538	0.069637	0.915528	1.521702	0.00805	4.43E-05	7.33E-05	0.008168	0.022153	87.12506
1095.294	0.002172	0.000522	0	0.002693	0.167611	0.004953	0	0.172564	0.046758	0.011229	0	0.057987	0	0	0	0.057987	0.05323	0.012784	0	0.066014	0	0	0	0.066014	0.157437	0.175378	0	0.332815	0.010074	0.000298	0	0.010372	0.173789	97.84218
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47.25259	0.033784	0.003927	0	0.037711	0.0094	0.000232	0	0.009633	0.000483	5.61E-05	0	0.000539	0	0	0	0.000539	0.034479	0.004007	0	0.038487	0	0	0	0.038487	0.140999	0.007483	0	0.148482	0	0	0	0	0.055734	5.461679
351.8795	0.004044	0.018502	0.002229	0.024775	0.010452	0.000591	0.002094	0.013136	0.019582	0.079318	0.012585	0.111486	0.022777	0.004548	0.014508	0.153319	0.028574	0.115741	0.013779	0.158094	0.022777	0.004548	0.014508	0.199928	0.460984	0.613017	0.277867	1.351869	0.003273	0.00019	1.66E-05	0.003479	0.017709	37.10526
544.2876	0.001326	0.000155	0	0.001481	0.078751	0.007002	0	0.085753	0.028544	0.00334	0	0.031884	0	0	0	0.031884	0.032496	0.003802	0	0.036298	0	0	0	0.036298	0.084691	0.096585	0	0.181276	0.004733	0.000421	0	0.005154	0.067691	48.62099
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
224.4189	0.51894	0.078633	0	0.597573	0.040996	0.004753	0	0.045749	0.007415	0.001124	0	0.008538	0	0	0	0.008538	0.529617	0.080251	0	0.609868	0	0	0	0.609868	1.708683	0.142615	0	1.851298	0	0	0	0	0.139117	25.9394
338.9977	0.000718	0	0.001018	0.001736	0.003144	0	0.000844	0.003989	0.002234	0	0.004169	0.006403	0.001224	0.000346	0.001188	0.009161	0.00326	0	0.004564	0.007824	0.001224	0.000346	0.001188	0.010582	0.119913	0	0.098036	0.217949	0.003342	0	9.16E-06	0.003351	0.012029	35.74689
384.3089	0.000998	0	0	0.000998	0.060548	0	0	0.060548	0.021493	0	0	0.021493	0	0	0	0.021493	0.024468	0	0	0.024468	0	0	0	0.024468	0.024809	0	0	0.024809	0.003642	0	0	0.003642	0.071754	34.33016
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1859.179	3.293071	0	0	3.293071	0.379006	0	0	0.379006	0.04794	0	0	0.04794	0	0	0	0.04794	3.36179	0	0	3.36179	0	0	0	3.36179	40.85228	0	0	40.85228	0	0	0	0	0.902843	214.8928
14.83062	0.000696	0	1.7E-07	0.000696	0.001	0	8.71E-06	0.001009	0.003316	0	8.98E-07	0.003317	0.000291	7.17E-05	0.000628	0.004308	0.004839	0	9.83E-07	0.00484	0.000291	7.17E-05	0.000628	0.005831	0.207745	0	0.006676	0.214421	0.000146	0	7.32E-07	0.000147	0.00034	1.56387
77689.76	0.030264	0.109587	0	0.13985	11.45822	0.781832	0	12.24005	0.651566	2.359372	0	3.010938	0	0	0	3.010938	0.741759	2.685966	0	3.427724	0	0	0	3.427724	2.721591	34.6924	0	37.414	0.688684	0.046991	0	0.735676	11.10914	6939.995
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1964.26	1.874379	0.519315	0	2.393693	0.358672	0.041755	0	0.400427	0.041638	0.007986	0	0.049624	0	0	0	0.049624	1.929868	0.530644	0	2.460511	0	0	0	2.460511	12.27882	1.575063	0	13.85388	0	0	0	0	1.153567	227.0385
141988.8	0.896179	0	3.336913	4.233092	2.052816	0	1.852883	3.905699	3.11113	0	14.44777	17.5589	18.63348	4.788071	13.65813	54.63858	4.539754	0	15.81849	20.35825	18.63348	4.788071	13.65813	57.43792	325.3407	0	151.9957	477.3364	1.364462	0	0.039241	1.403704	21.26057	14972.54
181.4423	0.000657	0	0	0.000657	0.028586	0	0	0.028586	0.014151	0	0	0.014151	0	0	0	0.014151	0.01611	0	0	0.01611	0	0	0	0.01611	0.250134	0	0	0.250134	0.001719	0	0	0.001719	0.002501	16.20816
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3137.087	0.009903	0	0.090893	0.100796	0.012186	0	0.044435	0.056621	0.031821	0	0.375887	0.407708	0.294287	0.092435	0.112685	0.907115	0.046434	0	0.411549	0.457983	0.294287	0.092435	0.112685	0.957389	4.835366	0	2.885815	7.721181	0.029683	0	0.00133	0.031013	0.428127	330.8019
13852.51	0.210831	0	0.463695	0.674526	0.323879	0	0.193514	0.517393	0.908325	0	2.31622	3.224544	3.513174	0.868775	2.562613	10.16911	1.325425	0	2.535969	3.861394	3.513174	0.868775	2.562613	10.80596	50.24462	0	22.75789	73.0025	0.132657	0	0.004289	0.136946	1.68773	1460.73
0.216444	4.41E-06	0	0	4.41E-06	3.41E-05	0	0	3.41E-05	9.49E-05	0	0	9.49E-05	0	0	0	9.49E-05	0.000108	0	0	0.000108	0	0	0	0.000108	0.000677	0	0	0.000677	2.05E-06	0	0	2.05E-06	1.75E-06	0.019335
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46.08092	0.000146	0	0.001305	0.001451	0.000179	0	0.00064	0.000819	0.000468	0	0.005387	0.005855	0.002267	0.000751	0.000647	0.009521	0.000683	0	0.005898	0.006581	0.002267	0.000751	0.000647	0.010247	0.071027	0	0.041335	0.112362	0.000435	0	2.05E-05	0.000456	0.006419	4.859176
94151.22	0.648772	0	2.167137	2.815909	1.371977	0	1.144904	2.516882	2.359583	0	9.512108	11.87169	9.629324	2.38264	6.980365	30.86402	3.443098	0	10.41456	13.85766	9.629324	2.38264	6.980365	32.84999	206.7896	0	97.22455	304.0141	0.904339	0	0.026441	0.930781	11.78159	9928.128
316.295	0.000781	0	0	0.000781	0.049832	0	0	0.049832	0.016817	0	0	0.016817	0	0	0	0.016817	0.019145	0	0	0.019145	0	0	0	0.019145	0.174205	0	0	0.174205	0.002997	0	0	0.002997	0.003438	28.25451
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678.8548	0.002127	0	0.01968	0.021807	0.002608	0	0.009612	0.012219	0.006845	0	0.081502	0.088347	0.039662	0.013043	0.012532	0.153583	0.009988	0	0.089234	0.099222	0.039662	0.013043	0.012532	0.164459	1.039651	0	0.625615	1.665266	0.006375	0	0.000336	0.006711	0.094207	71.58439
14506.58	0.081313	0.056015	0.223172	0.360501	0.122844	0.00154	0.374837	0.499221	0.381294	0.198834	1.068003	1.64813	1.341438	0.313581	1.865549	5.168699	0.556383	0.290138	1.169329	2.015849	1.341438	0.313581	1.865549	5.536418	16.96154	2.051311	25.98558	44.99843	0.140763	0.000618	0.002032	0.143412	0.921601	1529.701
8308.064	0.085006	0.002032	0	0.087038	1.300942	0.007997	0	1.308939	1.830134	0.04375	0	1.873884	0	0	0	1.873884	2.083486	0.049806	0	2.133292	0	0	0	2.133292	5.075937	0.362622	0	5.438559	0.078242	0.000481	0	0.078723	2.743774	742.1561
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2160.996	0.006292	0.007669	0.030084	0.044046	0.015669	0.000206	0.051248	0.067123	0.026522	0.027284	0.14221	0.196016	0.186284	0.041064	0.240262	0.663626	0.038701	0.039812	0.155702	0.234216	0.186284	0.041064	0.240262	0.701826	1.718204	0.28484	3.442132	5.445176	0.02099	9.95E-05	0.000274	0.021364	0.121764	227.8743
4269.916	0.033606	0.000878	0	0.034484	0.667225	0.005502	0	0.672727	0.723525	0.018895	0	0.742421	0	0	0	0.742421	0.823686	0.021511	0	0.845196	0	0	0	0.845196	1.89109	0.156612	0	2.047702	0.040129	0.000331	0	0.04046	1.25394	381.4299
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932.3223	0.728769	0	0.255489	0.984258	0.171932	0	0.010796	0.182729	4.642231	0	1.876282	6.518514	3.476268	5.608804	6.029679	21.63327	5.659961	0	2.040669	7.700631	3.476268	5.608804	6.029679	22.81538	53.92673	0	12.24763	66.17436	0.008523	0	0.000694	0.009217	0.040337	98.31222
67992.34	0.477385	0	1.578372	2.055757	0.95812	0	0.753291	1.711411	1.85817	0	7.425968	9.284138	7.864676	1.852909	5.72718	24.7289	2.711437	0	8.1305	10.84194	7.864676	1.852909	5.72718	26.2867	136.7897	0	65.53137	202.321	0.652149	0	0.020024	0.672173	6.790644	7169.707
945.8427	0.001286	0	0	0.001286	0.149018	0	0	0.149018	0.02768	0	0	0.02768	0	0	0	0.02768	0.031511	0	0	0.031511	0	0	0	0.031511	0.585452	0	0	0.585452	0.008962	0	0	0.008962	0.007551	84.49176
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
421.3743	0.001297	0	0.012327	0.013624	0.001589	0	0.006005	0.007594	0.004187	0	0.051191	0.055378	0.027549	0.008981	0.00909	0.100998	0.006109	0	0.056048	0.062157	0.027549	0.008981	0.00909	0.107777	0.637258	0	0.392951	1.030208	0.003907	0	0.000258	0.004166	0.057846	44.4334
1251.396	0.004392	0	0.00025	0.004643	0.011893	0	0.000372	0.012265	0.015631	0	0.000966	0.016596	0.263081	0.060501	0.001472	0.341651	0.022808	0	0.001058	0.023866	0.263081	0.060501	0.001472	0.34892	0.292864	0	0.020502	0.313366	0.012369	0	2.14E-06	0.012371	0.03032	131.9582
367.3244	0.001522	0	0	0.001522	0.057872	0	0	0.057872	0.032775	0	0	0.032775	0	0	0	0.032775	0.037312	0	0	0.037312	0	0	0	0.037312	0.116826	0	0	0.116826	0.003481	0	0	0.003481	0.057096	32.81295
4031.551	0.014473	0.012482	0.038274	0.065229	0.030311	0.000327	0.027683	0.05832	0.065801	0.047137	0.197668	0.310607	0.10915	0.023599	0.198188	0.641544	0.096017	0.068783	0.216422	0.381221	0.10915	0.023599	0.198188	0.712158	1.402441	0.685936	4.072144	6.160521	0.039228	0.000237	0.000391	0.039856	0.110861	425.122
15039.77	0.007433	0.00292	0	0.010353	2.260363	0.109159	0	2.369522	0.160024	0.062869	0	0.222892	0	0	0	0.222892	0.182175	0.071571	0	0.253746	0	0	0	0.253746	0.807426	2.41898	0	3.226406	0.135857	0.006561	0	0.142418	2.880436	1343.497
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
194.2158	0.124743	0.073906	0	0.198649	0.034635	0.004957	0	0.039592	0.001782	0.001056	0	0.002838	0	0	0	0.002838	0.127309	0.075426	0	0.202735	0	0	0	0.202735	0.481069	0.177833	0	0.658902	0	0	0	0	0.202253	22.44839
768.4256	0.004134	0.002242	0.007958	0.014334	0.008125	5.44E-05	0.006688	0.014867	0.019802	0.008647	0.042581	0.07103	0.044953	0.009104	0.049515	0.174602	0.028894	0.012618	0.046621	0.088133	0.044953	0.009104	0.049515	0.191705	0.460592	0.066926	0.868326	1.395844	0.007484	4.24E-05	7E-05	0.007597	0.020768	81.02951
1090.366	0.002083	0.000528	0	0.002611	0.166812	0.004976	0	0.171788	0.044851	0.011357	0	0.056209	0	0	0	0.056209	0.05106	0.012929	0	0.063989	0	0	0	0.063989	0.152711	0.177823	0	0.330534	0.010026	0.000299	0	0.010325	0.174875	97.402
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47.25779	0.034231	0.003963	0	0.038194	0.009398	0.000236	0	0.009634	0.000489	5.66E-05	0	0.000546	0	0	0	0.000546	0.034935	0.004045	0	0.03898	0	0	0	0.03898	0.14188	0.007779	0	0.149659	0	0	0	0	0.056211	5.46228
350.334	0.003686	0.018529	0.00222	0.024434	0.009999	0.000585	0.002133	0.012716	0.017793	0.079366	0.012491	0.10965	0.02342	0.004622	0.014988	0.15268	0.025963	0.115811	0.013676	0.15545	0.02342	0.004622	0.014988	0.19848	0.417016	0.613367	0.272939	1.303322	0.003258	0.000189	1.65E-05	0.003463	0.01768	36.94229
528.1842	0.001212	0.000152	0	0.001363	0.076417	0.006799	0	0.083216	0.026088	0.003264	0	0.029352	0	0	0	0.029352	0.029699	0.003715	0	0.033415	0	0	0	0.033415	0.078633	0.097724	0	0.176357	0.004593	0.000409	0	0.005002	0.068305	47.18249
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
225.4272	0.518072	0.07988	0	0.597952	0.041102	0.004853	0	0.045955	0.007402	0.001141	0	0.008544	0	0	0	0.008544	0.528731	0.081523	0	0.610254	0	0	0	0.610254	1.698825	0.147077	0	1.845902	0	0	0	0	0.140081	26.05594
324.1821	0.000671	0	0.001013	0.001683	0.003068	0	0.000826	0.003894	0.002089	0	0.004155	0.006244	0.001295	0.000343	0.001259	0.009141	0.003049	0	0.004549	0.007598	0.001295	0.000343	0.001259	0.010495	0.118674	0	0.09543	0.214104	0.003196	0	8.89E-06	0.003205	0.011746	34.1846
325.9478	0.000859	0	0	0.000859	0.051353	0	0	0.051353	0.018484	0	0	0.018484	0	0	0	0.018484	0.021042	0	0	0.021042	0	0	0	0.021042	0.021372	0	0	0.021372	0.003089	0	0	0.003089	0.062456	29.11679
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1678.078	3.161074	0	0	3.161074	0.342087	0	0	0.342087	0.046081	0	0	0.046081	0	0	0	0.046081	3.227108	0	0	3.227108	0	0	0	3.227108	38.5561	0	0	38.5561	0	0	0	0	0.827456	193.9602
14.05367	0.000639	0	1.54E-07	0.000639	0.000928	0	5.6E-06	0.000933	0.00299	0	8.09E-07	0.002991	0.00024	5.62E-05	0.000501	0.003788	0.004363	0	8.86E-07	0.004364	0.00024	5.62E-05	0.000501	0.005161	0.200664	0	0.006067	0.20673	0.000138	0	6.59E-07	0.000139	0.000328	1.481942

77738.65	0.030163	0.111187	0	0.14135	11.46623	0.781527	0	12.24776	0.649401	2.393835	0	3.043236	0	0	0	3.043236	0.739294	2.725199	0	3.464493	0	0	0	3.464493	2.676951	35.22692	0	37.90387	0.689166	0.046973	0	0.736139	11.30701	6944.363
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963.043	1.781248	0.515006	0	2.296254	0.358059	0.042121	0	0.400179	0.038973	0.007874	0	0.046847	0	0	0	0.046847	1.833302	0.526188	0	2.35949	0	0	0	2.35949	11.95963	1.596842	0	13.55648	0	0	0	0	1.162757	226.8978
139524.4	0.846911	0	3.175259	4.02217	2.001719	0	1.81835	3.820069	2.897698	0	13.63781	16.53551	18.12334	4.544078	13.29895	52.50188	4.228314	0	14.93169	19.16	18.12334	4.544078	13.29895	55.12637	315.6178	0	145.6616	461.2793	1.340868	0	0.038473	1.379341	21.48686	14712.67
160.486	0.00055	0	0	0.00055	0.025285	0	0	0.025285	0.011852	0	0	0.011852	0	0	0	0.011852	0.013493	0	0	0.013493	0	0	0	0.013493	0.216619	0	0	0.216619	0.001521	0	0	0.001521	0.002243	14.33616
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3165.539	0.009965	0	0.093467	0.103431	0.012229	0	0.045561	0.05779	0.032105	0	0.387683	0.419788	0.308229	0.093919	0.119493	0.941428	0.046847	0	0.424464	0.471311	0.308229	0.093919	0.119493	0.992952	4.877471	0	2.976487	7.853958	0.029935	0	0.001359	0.031295	0.433571	333.8021
13408.88	0.185293	0	0.424913	0.610206	0.292214	0	0.184986	0.477199	0.788279	0	2.093748	2.882027	3.270846	0.79479	2.365724	9.313386	1.150254	0	2.292391	3.442645	3.270846	0.79479	2.365724	9.874005	45.59285	0	20.63569	66.22854	0.128437	0	0.004123	0.13256	1.67129	1413.95
0.146543	1.43E-06	0	0	1.43E-06	2.31E-05	0	0	2.31E-05	3.08E-05	0	0	3.08E-05	0	0	0	3.08E-05	3.51E-05	0	0	3.51E-05	0	0	0	3.51E-05	0.000235	0	0	0.000235	1.39E-06	0	0	1.39E-06	1.22E-06	0.013091
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52.9758	0.000167	0	0.00152	0.001688	0.000205	0	0.000744	0.000949	0.000538	0	0.006287	0.006825	0.002697	0.000887	0.00078	0.01119	0.000785	0	0.006884	0.007669	0.002697	0.000887	0.00078	0.012034	0.081615	0	0.048244	0.129859	0.0005	0	2.39E-05	0.000524	0.007372	5.586232
93567.11	0.623381	0	2.103888	2.727269	1.338039	0	1.144981	2.48302	2.236246	0	9.158614	11.39486	9.574746	2.314363	6.950442	30.23441	3.263125	0	10.02753	13.29065	9.574746	2.314363	6.950442	32.13021	203.5334	0	95.11128	298.6447	0.898708	0	0.026298	0.925006	11.99475	9866.535
314.9259	0.000787	0	0	0.000787	0.049617	0	0	0.049617	0.016944	0	0	0.016944	0	0	0	0.016944	0.01929	0	0	0.01929	0	0	0	0.01929	0.17593	0	0	0.17593	0.002984	0	0	0.002984	0.003474	28.13221
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
728.7355	0.002278	0	0.021489	0.023766	0.002785	0	0.010467	0.013252	0.007347	0	0.089236	0.096583	0.045375	0.014575	0.014735	0.171268	0.01072	0	0.097702	0.108423	0.045375	0.014575	0.014735	0.183108	1.115451	0	0.685004	1.800455	0.006839	0	0.000365	0.007204	0.101015	76.84425
14010.54	0.066424	0.054086	0.21145	0.331959	0.107076	0.001497	0.362567	0.47114	0.301266	0.191069	1.001632	1.493967	1.264153	0.291418	1.753222	4.80276	0.439607	0.278807	1.096661	1.815075	1.264153	0.291418	1.753222	5.123868	14.84834	2.01599	25.46072	42.32506	0.13592	0.000603	0.001985	0.138508	0.899973	1477.394
8061.303	0.078406	0.001996	0	0.080402	1.262267	0.007795	0	1.270062	1.688037	0.042966	0	1.731003	0	0	0	1.731003	1.921717	0.048914	0	1.970632	0	0	0	1.970632	4.652968	0.356126	0	5.009094	0.075916	0.000469	0	0.076385	2.722532	720.113
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2073.671	0.005324	0.007333	0.02839	0.041046	0.013893	0.000198	0.049156	0.063247	0.021833	0.025989	0.13337	0.181192	0.178607	0.038529	0.230171	0.628499	0.031859	0.037923	0.146024	0.215805	0.178607	0.038529	0.230171	0.663112	1.597912	0.278211	3.373347	5.24947	0.020138	9.66E-05	0.000266	0.0205	0.118113	218.666
4172.353	0.031981	0.000873	0	0.032854	0.651917	0.005439	0	0.657356	0.688538	0.018795	0	0.707333	0	0	0	0.707333	0.783854	0.021397	0	0.805251	0	0	0	0.805251	1.79911	0.155783	0	1.954893	0.039208	0.000327	0	0.039535	1.245461	372.7146
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
929.3217	0.716502	0	0.250593	0.967095	0.170308	0	0.010435	0.180743	4.533634	0	1.833117	6.366751	3.410713	5.619637	6.033798	21.4309	5.542757	0	1.993934	7.536691	3.410713	5.619637	6.033798	22.60084	52.86973	0	12.23665	65.10638	0.008505	0	0.000683	0.009187	0.040436	97.99581
67002	0.448408	0	1.503308	1.951716	0.91306	0	0.742818	1.655879	1.721153	0	6.998908	8.720061	7.669405	1.777846	5.578522	23.74583	2.511502	0	7.662923	10.17443	7.669405	1.777846	5.578522	25.2002	132.3843	0	63.28712	195.6714	0.642659	0	0.019724	0.662383	6.875873	7065.278
909.0293	0.001171	0	0	0.001171	0.143218	0	0	0.143218	0.025208	0	0	0.025208	0	0	0	0.025208	0.028697	0	0	0.028697	0	0	0	0.028697	0.55505	0	0	0.55505	0.008614	0	0	0.008614	0.007366	81.20322
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
451.1256	0.001385	0	0.013417	0.014803	0.001692	0	0.006519	0.008211	0.004482	0	0.055869	0.06035	0.031835	0.009946	0.010928	0.113059	0.00654	0	0.061169	0.067709	0.031835	0.009946	0.010928	0.120417	0.681823	0	0.428867	1.11069	0.00418	0	0.00028	0.00446	0.061846	47.57064
1214.62	0.003921	0	0.000239	0.00416	0.011006	0	0.000364	0.01137	0.013636	0	0.000913	0.014548	0.24125	0.054255	0.001336	0.31139	0.019898	0	0.000999	0.020897	0.24125	0.054255	0.001336	0.317738	0.25174	0	0.019343	0.271083	0.012006	0	2.05E-06	0.012008	0.029438	128.0801
364.026	0.00147	0	0	0.00147	0.057352	0	0	0.057352	0.031653	0	0	0.031653	0	0	0	0.031653	0.036035	0	0	0.036035	0.112092	0	0	0.036035	0.112092	0	0	0.112092	0.003449	0	0	0.003449	0.057893	32.5183
3834.234	0.012529	0.012099	0.036558	0.061186	0.027031	0.000312	0.026441	0.053784	0.055976	0.04566	0.18756	0.289196	0.10331	0.02182	0.186931	0.601257	0.08168	0.066627	0.205355	0.353661	0.10331	0.02182	0.186931	0.665723	1.168388	0.664309	3.826509	5.659206	0.037303	0.000228	0.000374	0.037905	0.106273	404.3152
14755.07	0.006692	0.002855	0	0.009547	2.216873	0.107794	0	2.324667	0.144076	0.061458	0	0.205535	0	0	0	0.205535	0.16402	0.069966	0	0.233986	0	0	0	0.233986	0.757343	2.410501	0	3.167844	0.133243	0.006479	0	0.139722	2.850408	1318.065
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195.2718	0.125783	0.074987	0	0.20077	0.034739	0.005068	0	0.039807	0.001797	0.001071	0	0.002869	0	0	0	0.002869	0.128371	0.07653	0	0.2049	0	0	0	0.2049	0.482342	0.183902	0	0.666244	0	0	0	0	0.203334	22.57045
715.0335	0.003669	0.002151	0.007588	0.013408	0.007246	5.13E-05	0.006331	0.013629	0.01752	0.008323	0.040694	0.066537	0.043907	0.008739	0.048314	0.167496	0.025565	0.012144	0.044555	0.082265	0.043907	0.008739	0.048314	0.183224	0.398283	0.064412	0.832238	1.294934	0.006961	4.06E-05	6.71E-05	0.007069	0.019469	75.39939
1086.815	0.002001	0.000531	0	0.002532	0.166255	0.004973	0	0.171228	0.043089	0.01143	0	0.05452	0	0	0	0.05452	0.049054	0.013013	0	0.062066	0	0	0	0.062066	0.148205	0.179362	0	0.327568	0.009993	0.000299	0	0.010291	0.175934	97.08477
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47.27993	0.034626	0.003997	0	0.038624	0.009399	0.000239	0	0.009638	0.000495	5.71E-05	0	0.000552	0	0	0	0.000552	0.035339	0.00408	0	0.039418	0	0	0	0.039418	0.142745	0.008046	0	0.150791	0	0	0	0	0.056645	5.464838
347.2565	0.003228	0.018483	0.002198	0.023909	0.009413	0.000579	0.002159	0.012151	0.015505	0.079077	0.012328	0.106911	0.024297	0.004693	0.015628	0.151529	0.022625	0.115389	0.013497	0.151512	0.024297	0.004693	0.015628	0.19613	0.360898	0.611133	0.265835	1.237867	0.003229	0.000188	1.63E-05	0.003433	0.017575	36.61777
510.8457	0.001093	0.000148	0	0.00124	0.073906	0.006578	0	0.080484	0.023522	0.003186	0	0.026708	0	0	0	0.026708	0.026778	0.003627	0	0.030405	0	0	0	0.030405	0.07226	0.098658	0	0.170918	0.004442	0.000395	0	0.004837	0.068693	45.63365
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
225.6829	0.51548	0.080916	0	0.596396	0.041068	0.004939	0	0.046007	0.007365	0.001156	0	0.008521	0	0	0	0.008521	0.526085	0.082581	0	0.608666	0	0	0	0.608666	1.683463	0.151127	0	1.83459	0	0	0	0	0.140558	26.0855
304.7442	0.000622	0	0.000919	0.001541	0.002899	0	0.000763	0.003662	0.001929	0	0.003742	0.005672	0.001086	0.000294	0.001109	0.00816	0.002815	0	0.004097	0.006913	0.001086	0.000294	0.001109	0.009401	0.116372	0	0.088787	0.205159	0.003005	0	8.06E-06	0.003013	0.011336	32.1349
283.4087	0.000737	0	0	0.000737	0.044651	0	0	0.044651	0.015858	0	0	0.015858	0	0	0	0.015858	0.018053	0	0	0.018053	0	0	0	0.018053	0.018012	0	0	0.018012	0.002685	0	0	0.002685	0.05424	25.31679
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1343.022	2.913188	0	0	2.913188	0.273784	0	0	0.273784	0.042542	0	0	0.042542	0	0	0	0.042542	2.974125	0	0	2.974125	0	0	0	2.974125	34.12549	0	0	34.12549	0	0	0	0	0.694217	155.2329
13.3135	0.000603	0	1.4E-07	0.000604	0.000862	0	5.18E-06	0.000867	0.002802	0	7.38E-07	0.002803	0.000192	4.28E-05	0.000385	0.003422	0.004089	0	8.08E-07	0.00409	0.000192	4.28E-05	0.000385	0.004709	0.195854	0	0.005667	0.201521	0.000131	0	5.99E-07	0.000132	0.000316	1.403891
77861.13	0.030097	0.112792	0	0.142889	11.48501	0.782038	0	12.26705	0.647982	2.428387	0	3.076368	0	0	0	3.076368	0.737678	2.764533	0	3.502211	0	0	0	3.502211	2.640664	35.75689	0	38.39755	0.690295	0.047004	0	0.737298	11.50318	6955.304
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1956.324	1.690976	0.5085	0	2.199476	0.356492	0.042318	0	0.398809	0.036531	0.007737	0	0.044268	0	0	0	0.044268	1.739859	0.519499	0	2.259358	0	0	0	2.259358	11.61894	1.613173	0	13.23211	0	0	0	0	1.168822	226.1212
137396.5	0.804267	0	3.02694	3.831207	1.95844	0	1.787989	3.746429	2.711867	0	12.89275	15.60462	17.88441	4.339675	13.16154	50.99025	3.95715	0	14.11594	18.07309	17.88441	4.339675	13.16154	53.45872	307.2812	0	139.9081	447.1893	1.320518	0	0.037787	1.358304	21.68928	14488.29
141.3	0.000428	0	0	0.000428	0.022262	0	0	0.022262	0.009224	0	0	0.009224	0	0	0	0.009224	0.010501	0	0	0.010501	0	0	0	0.010501	0.182565	0	0	0.182565	0.001339	0	0	0.001339	0.002008	12.62228
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3186.556	0.010005	0	0.095736	0.105741	0.012249	0	0.046541	0.05879	0.032312	0	0.398197	0.430509	0.347521	0.098277	0.139896	1.016204	0.04715	0	0.435976	0.483126	0.347521	0.098277	0.139896	1.06882	4.908438	0	3.057315	7.965753	0.030118	0	0.001384	0.031502	0.437849	336.0183
13013.31	0.163517	0	0.390592	0.554109	0.265367	0	0.177495	0.442862	0.686058	0	1.897929	2.583987	3.05362	0.727792	2.188403	8.553801	1.001095	0	2.077993	3.079088	3.05362	0.727792	2.188403	9.048902	41.6176	0	18.79292	60.41052	0.124675	0	0.003975	0.12865	1.657437	1372.238
0.126739	4.77E-07	0	0	4.77E-07	2E-05	0	0	2E-05	1.03E-05	0	0	1.03E-05	0	0	0	1.03E-05	1.17E-05	0	0	1.17E-05	0	0	0	1.17E-05	9.07E-05	0	0	9.07E-05	1.2E-06	0	0	1.2E-06	1.08E-06	0.011322
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59.49267	0.000188	0	0.00173	0.001918	0.000229	0	0.000845	0.001074	0.000604	0	0.00717	0.007774	0.003165	0.001024	0.00093	0.012893	0.000881	0	0.00785	0.008732	0.003165	0.001024	0.00093	0.013851	0.091603	0	0.055018	0.146622	0.000561	0	2.72E-05	0.000588	0.008272	6.273428
93020.27	0.600973	0	2.044198	2.645171	1.308079	0	1.146057	2.454136	2.126799	0	8.826907	10.95371	9.578863	2.255867	6.978308	29.76674	3.10342	0	9.664352	12.76777	9.578863	2.255867	6.978308	31.58081	200.7664	0	93.18382	293.9502	0.89344	0	0.02616	0.9196	12.18299	9808.871
313.3615	0.000792	0	0	0.000792	0.04937	0	0	0.04937	0.017044	0	0	0.017044	0	0	0	0.017044	0.019403	0	0	0.019403	0	0	0	0.019403	0.177332	0	0	0.177332	0.002969	0	0	0.002969	0.003503	27.99246
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
774.6608	0.002415	0	0.023214	0.025628	0.002946	0	0.011279	0.014225	0.007807	0	0.096649	0.104456	0.050637	0.01589	0.016577	0.18756	0.011392	0	0.105818	0.11721	0.050637	0.01589	0.016577	0.200315	1.185096	0	0.741929	1.927025	0.007265	0	0.000393	0.007658	0.107282	81.68701
13513.25	0.052703	0.052214	0.200656	0.305573	0.093987	0.001453	0.350496	0.445936	0.225579	0.183723	0.940699	1.350001	1.212786	0.27425	1.678293	4.515331	0.329165	0.268088	1.029947	1.6272	1.212786	0.27425	1.678293	4.79253	13.25986	1.97956	24.92871	40.16812	0.131066	0.000588	0.001938	0.133592	0.87642	1424.955
7803.284	0.07265	0.001958	0	0.074608	1.221816	0.007595	0	1.229411	1.564103	0.042159	0	1.606262	0	0	0	1.606262	1.780628	0.047995	0	1.828622	0	0	0	1.828622	4.278938	0.349432	0	4.628369	0.073483	0.000457	0	0.07394	2.687941	697.0643
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1985.038	0.004423	0.006994	0.026738	0.038156	0.012321	0.00019	0.047008	0.059519	0.017377	0.024698	0.124789	0.166865	0.172554	0.03629	0.222291	0.598	0.025357	0.03604	0.136628	0.198025	0.172554	0.03629	0.222291	0.62916	1.492931	0.271055	3.298018	5.062004	0.019273	9.36E-05	0.000258	0.019624	0.114216	209.3198
4064.024	0.030446	0.000866	0	0.031312	0.634926	0.005363	0	0.640289	0.65549	0.01864	0	0.67413	0	0	0	0.67413	0.746232	0.02122	0	0.767452	0	0	0	0.767452	1.710854	0.154496	0	1.86535	0.038186	0.000323	0	0.038509	1.230767	363.0377
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927.1356	0.706003	0	0.24663	0.952633	0.168938	0	0.010128	0.179066	4.440535	0	1.797979	6.238514	3.376197	5.638634	6.05405	21.30739	5.442321	0	1.9559	7.398221	3.376197	5.638634	6.05405	22.4671	51.95583	0	12.2454	64.20123	0.008492	0	0.000674	0.009166	0.040536	97.76529
66133.88	0.424075	0	1.436912	1.860988	0.875412	0	0.734761	1.610173	1.605376	0	6.622664	8.228041	7.538448	1.713404	5.484317	22.96421	2.342561	0	7.250984	9.593545	7.538448	1.713404	5.484317	24.32971	128.7746	0	61.34029	190.1149	0.634341	0	0.01946	0.653801	6.954524	6973.735
874.3018	0.001086	0	0	0.001086	0.137747	0	0	0.137747	0.023378	0	0	0.023378	0	0	0	0.023378	0.026615	0	0	0.026615	0	0	0	0.026615	0.529358	0	0	0.529358	0.008284	0	0	0.008284	0.007188	78.10103
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
478.4857	0.001466	0	0.014454	0.01592	0.001786	0	0.007005	0.008791	0.004753	0	0.060337	0.06509	0.036189	0.010878	0.012747	0.124903	0.006935	0	0.066062	0.072996	0.036189	0.010878	0.012747	0.13281	0.722708	0	0.463182	1.18589	0.00443	0	0.0003	0.00473	0.06552	50.45572
1181.591	0.003532	0	0.000229	0.003761	0.01023	0	0.000356	0.010586	0.012003	0	0.000865	0.012868	0.22161	0.048758	0.001218	0.284455	0.017515	0	0.000947	0.018462	0.22161	0.048758	0.001218	0.290049	0.216725	0	0.018294	0.235018	0.011679	0	1.97E-06	0.011681	0.028646	124.5973
361.0918	0.001421	0	0	0.001421	0.05689	0	0	0.05689	0.030596	0	0	0.030596	0	0	0	0.030596	0.034831	0	0	0.034831	0	0	0	0.034831	0.107584	0	0	0.107584	0.003422	0	0	0.003422	0.058689	32.25619
3639.275	0.011013	0.011699	0.035012	0.057724	0.024399	0.000297	0.025346	0.050041	0.048495	0.044151	0.1787	0.271346	0.099732	0.020354	0.179874	0.571306	0.070764	0.064424	0.195654	0.330843	0.099732	0.020354	0.179874	0.630802	0.99513	0.642232	3.604688	5.24205	0.035402	0.000219	0.000357	0.035978	0.101643	383.7569
14440.16	0.006067	0.002793	0	0.00886	2.169069	0.105985	0	2.275053	0.130617	0.06014	0	0.190757	0	0	0	0.190757	0.148698	0.068464	0	0.217162	0	0	0	0.217162	0.713824	2.391666	0	3.10549	0.13037	0.00637	0	0.13674	2.813391	1289.934
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195.0196	0.125985	0.07547	0	0.201454	0.034617	0.005139	0	0.039756	0.0018	0.001078	0	0.002878	0	0	0	0.002878	0.128576	0.077022	0	0.205599	0	0	0	0.205599	0.4805	0.18858	0	0.669081	0	0	0	0	0.203081	22.54129

664.851	0.00325	0.002059	0.007245	0.012554	0.006459	4.83E-05	0.005995	0.012502	0.015402	0.008	0.038946	0.062348	0.042632	0.00836	0.046876	0.160217	0.022475	0.011674	0.042641	0.076789	0.042632	0.00836	0.046876	0.174658	0.347252	0.06191	0.801109	1.210271	0.00647	3.89E-05	6.43E-05	0.006573	0.018235	70.10771
1084.037	0.001913	0.000532	0	0.002446	0.165844	0.004947	0	0.17079	0.041197	0.011458	0	0.052655	0	0	0	0.052655	0.0469	0.013044	0	0.059944	0	0	0	0.059944	0.143192	0.180146	0	0.323338	0.009968	0.000297	0	0.010265	0.176979	96.83659
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47.3348	0.035026	0.004024	0	0.039049	0.009408	0.000242	0	0.00965	0.0005	5.75E-05	0	0.000558	0	0	0	0.000558	0.035746	0.004106	0	0.039853	0	0	0	0.039853	0.143676	0.0083	0	0.151976	0	0	0	0.057087	5.471181
342.6807	0.002699	0.018365	0.002159	0.023223	0.008625	0.000571	0.002178	0.011375	0.012855	0.078467	0.012049	0.10337	0.025276	0.004761	0.016332	0.149738	0.018758	0.114498	0.013192	0.146448	0.025276	0.004761	0.016332	0.192816	0.295432	0.606415	0.256571	1.158418	0.003186	0.000186	1.6E-05	0.003388	0.017397	36.13525
492.8142	0.000973	0.000144	0	0.001118	0.071297	0.006346	0	0.077643	0.020951	0.003108	0	0.02406	0	0	0	0.02406	0.023851	0.003539	0	0.02739	0	0	0	0.02739	0.065831	0.099393	0	0.165224	0.004285	0.000381	0	0.004667	0.068848	44.0229
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225.1788	0.511113	0.081722	0	0.592835	0.040893	0.005011	0	0.045904	0.007303	0.001168	0	0.00847	0	0	0	0.00847	0.521628	0.083404	0	0.605032	0	0	0	0.605032	1.662306	0.154779	0	1.817085	0	0	0	0	0.140553	26.02723
299.9514	0.000606	0	0.000924	0.00153	0.002958	0	0.000756	0.003714	0.001883	0	0.003767	0.00565	0.001146	0.0003	0.001153	0.008249	0.002748	0	0.004124	0.006872	0.001146	0.0003	0.001153	0.009471	0.117692	0	0.086774	0.204466	0.002957	0	7.86E-06	0.002965	0.011252	31.6295
230.0842	0.000603	0	0	0.000603	0.03625	0	0	0.03625	0.012993	0	0	0.012993	0	0	0	0.012993	0.014791	0	0	0.014791	0	0	0	0.014791	0.014832	0	0	0.014832	0.00218	0	0	0.00218	0.044626	20.55333
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1294.677	2.876696	0	0	2.876696	0.263928	0	0	0.263928	0.042046	0	0	0.042046	0	0	0	0.042046	2.936909	0	0	2.936909	0	0	0	2.936909	33.47703	0	0	33.47703	0	0	0	0	0.668221	149.6449
12.67336	0.000579	0	1.27E-07	0.000579	0.000817	0	3.42E-06	0.00082	0.002677	0	6.67E-07	0.002677	0.000168	3.52E-05	0.000326	0.003207	0.003906	0	7.3E-07	0.003906	0.000168	3.52E-05	0.000326	0.004436	0.190197	0	0.005233	0.19543	0.000125	0	5.54E-07	0.000125	0.000305	1.33639
78141.19	0.030064	0.114447	0	0.144511	11.5274	0.783772	0	12.31118	0.647272	2.464002	0	3.111274	0	0	0	3.111274	0.73687	2.805079	0	3.541948	0	0	0	3.541948	2.602417	36.30154	0	38.90395	0.692843	0.047108	0	0.73995	11.70944	6980.322
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1941.972	1.603742	0.500805	0	2.104547	0.353518	0.042366	0	0.395884	0.034362	0.007593	0	0.041954	0	0	0	0.041954	1.649779	0.511606	0	2.161385	0	0	0	2.161385	11.2376	1.624409	0	12.86201	0	0	0	0	1.172214	224.4624
135604.5	0.768304	0	2.893424	3.661728	1.922613	0	1.761647	3.68426	2.554288	0	12.22453	14.77882	17.6484	4.144622	13.00479	49.57664	3.727211	0	13.38433	17.11154	17.6484	4.144622	13.00479	51.90935	300.3753	0	134.8427	435.218	1.303404	0	0.037185	1.340589	21.87049	14299.33
125.5601	0.000366	0	0	0.000366	0.019782	0	0	0.019782	0.007878	0	0	0.007878	0	0	0	0.007878	0.008968	0	0	0.008968	0	0	0	0.008968	0.159298	0	0	0.159298	0.00119	0	0	0.00119	0.001811	11.21623
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3202.446	0.010037	0	0.097713	0.10775	0.012256	0	0.047382	0.059639	0.032485	0	0.40747	0.439955	0.383322	0.101659	0.158281	1.083217	0.047402	0	0.446128	0.493531	0.383322	0.101659	0.158281	1.136792	4.932489	0	3.128607	8.061095	0.030254	0	0.001405	0.031659	0.441099	337.694
12666.91	0.145182	0	0.360525	0.505707	0.24303	0	0.170992	0.414022	0.60013	0	1.727409	2.327539	2.916282	0.67535	2.080819	7.99999	0.875708	0	1.891295	2.767004	2.916282	0.67535	2.080819	8.439455	38.28467	0	17.21307	55.49774	0.121382	0	0.003844	0.125225	1.646666	1335.71
0.130399	4.58E-07	0	0	4.58E-07	2.05E-05	0	0	2.05E-05	9.85E-06	0	0	9.85E-06	0	0	0	9.85E-06	1.12E-05	0	0	1.12E-05	0	0	0	1.12E-05	8.83E-05	0	0	8.83E-05	1.24E-06	0	0	1.24E-06	1.12E-06	0.011648
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65.65298	0.000207	0	0.001934	0.002141	0.000252	0	0.000943	0.001195	0.000667	0	0.008032	0.008699	0.003646	0.001161	0.001084	0.014589	0.000973	0	0.008794	0.009767	0.003646	0.001161	0.001084	0.015657	0.101036	0	0.061637	0.162673	0.000619	0	3.04E-05	0.000649	0.009119	6.923024
92503.21	0.580121	0	1.986192	2.566312	1.280235	0	1.147361	2.427596	2.024013	0	8.505296	10.52931	9.580373	2.194513	6.997974	29.30217	2.953435	0	9.312229	12.26566	9.580373	2.194513	6.997974	31.03852	198.2706	0	91.31136	289.582	0.88847	0	0.026019	0.914488	12.34603	9754.348
311.9333	0.000797	0	0	0.000797	0.049145	0	0	0.049145	0.017158	0	0	0.017158	0	0	0	0.017158	0.019533	0	0	0.019533	0	0	0	0.019533	0.178706	0	0	0.178706	0.002956	0	0	0.002956	0.00353	27.86488
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816.7316	0.00254	0	0.02484	0.02738	0.003091	0	0.01204	0.015132	0.00823	0	0.103673	0.111904	0.056922	0.017301	0.018983	0.20511	0.01201	0	0.113509	0.125519	0.056922	0.017301	0.018983	0.218725	1.24889	0	0.795876	2.044765	0.007654	0	0.00042	0.008074	0.112986	86.12333
12984.46	0.046309	0.050265	0.192141	0.288715	0.08516	0.001405	0.336881	0.423446	0.196368	0.17628	0.89764	1.270288	1.158113	0.256014	1.596275	4.28069	0.286539	0.257228	0.982803	1.52657	1.158113	0.256014	1.596275	4.536972	12.64633	1.937861	24.47619	39.06038	0.125903	0.000573	0.001889	0.128365	0.850192	1369.195
7524.311	0.06723	0.001916	0	0.069146	1.178079	0.00738	0	1.185458	1.447428	0.041244	0	1.488672	0	0	0	1.488672	1.6478	0.046954	0	1.694754	0	0	0	1.694754	3.926528	0.341852	0	4.268379	0.070853	0.000444	0	0.071297	2.640273	672.1438
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1894.755	0.003923	0.006661	0.025213	0.035797	0.011059	0.000182	0.044848	0.056089	0.015232	0.023446	0.117107	0.155784	0.164603	0.033983	0.212439	0.566809	0.022226	0.034212	0.128217	0.184655	0.164603	0.033983	0.212439	0.59568	1.433106	0.263631	3.224236	4.920973	0.018392	9.05E-05	0.00025	0.018732	0.110158	199.7995
3944.75	0.029009	0.000856	0	0.029865	0.61622	0.005277	0	0.621497	0.62454	0.018437	0	0.642977	0	0	0	0.642977	0.710997	0.020989	0	0.731987	0	0	0	0.731987	1.627853	0.152815	0	1.780668	0.037061	0.000317	0	0.037379	1.210116	352.3829
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925.9596	0.697552	0	0.243754	0.941306	0.167842	0	0.009883	0.177725	4.364589	0	1.772623	6.137213	3.361588	5.665261	6.086047	21.25011	5.360901	0	1.928473	7.289374	3.361588	5.665261	6.086047	22.40227	51.19945	0	12.27656	63.47601	0.008487	0	0.000667	0.009154	0.040643	97.64128
65384.86	0.402988	0	1.377239	1.780226	0.843236	0	0.72859	1.571826	1.503896	0	6.284803	7.788699	7.414476	1.650802	5.391266	22.24524	2.194482	0	6.881068	9.075549	7.414476	1.650802	5.391266	23.53209	125.7135	0	59.58343	185.297	0.627171	0	0.019224	0.646396	7.025769	6894.752
842.5258	0.001009	0	0	0.001009	0.13274	0	0	0.13274	0.021728	0	0	0.021728	0	0	0	0.021728	0.024736	0	0	0.024736	0	0	0	0.024736	0.505411	0	0	0.505411	0.007983	0	0	0.007983	0.007022	75.2625
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
503.9625	0.001541	0	0.015442	0.016983	0.001873	0	0.007466	0.009339	0.005006	0	0.06462	0.069626	0.042528	0.012041	0.015669	0.139864	0.007305	0	0.070751	0.078055	0.042528	0.012041	0.015669	0.148293	0.760784	0	0.496071	1.256855	0.004662	0	0.00032	0.004982	0.068915	53.14222

1153.769	0.003202	0	0.00022	0.003422	0.009569	0	0.000348	0.009917	0.010617	0	0.000824	0.011441	0.206069	0.044165	0.001126	0.262801	0.015492	0	0.000902	0.016395	0.206069	0.044165	0.001126	0.267755	0.187047	0	0.017397	0.204443	0.011404	0	1.9E-06	0.011406	0.027981	121.6634
358.0364	0.00137	0	0	0.00137	0.056409	0	0	0.056409	0.029504	0	0	0.029504	0	0	0	0.029504	0.033588	0	0	0.033588	0	0	0	0.033588	0.102989	0	0	0.102989	0.003393	0	0	0.003393	0.059448	31.98325
3445.577	0.009716	0.011284	0.033444	0.054444	0.022089	0.000282	0.024261	0.046631	0.042138	0.042592	0.169798	0.254528	0.095251	0.018835	0.171449	0.540063	0.061488	0.06215	0.185908	0.309546	0.095251	0.018835	0.171449	0.595081	0.853485	0.619471	3.393422	4.866378	0.033513	0.000209	0.000341	0.034063	0.096952	363.3318
14096.37	0.005525	0.002728	0	0.008252	2.117152	0.103737	0	2.220889	0.118947	0.058722	0	0.177669	0	0	0	0.177669	0.135412	0.066851	0	0.202263	0	0	0	0.202263	0.673709	2.362279	0	3.035987	0.127249	0.006235	0	0.133484	2.769609	1259.223
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
193.8568	0.125444	0.075587	0	0.20103	0.034335	0.005184	0	0.039519	0.001792	0.00108	0	0.002872	0	0	0	0.002872	0.128025	0.077142	0	0.205166	0	0	0	0.205166	0.475674	0.192261	0	0.667936	0	0	0	0	0.202075	22.40689
617.8003	0.002944	0.001969	0.006936	0.01185	0.005794	4.56E-05	0.005623	0.011463	0.01395	0.007685	0.037444	0.059079	0.041442	0.007994	0.045518	0.154034	0.020356	0.011214	0.040996	0.072566	0.041442	0.007994	0.045518	0.167521	0.315781	0.059468	0.769969	1.145217	0.006009	3.72E-05	6.16E-05	0.006108	0.01706	65.14627
1081.675	0.001822	0.000531	0	0.002353	0.165521	0.004897	0	0.170418	0.039222	0.01143	0	0.050652	0	0	0	0.050652	0.044652	0.013012	0	0.057664	0	0	0	0.057664	0.13776	0.180063	0	0.317823	0.009948	0.000294	0	0.010243	0.17797	96.62561
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47.58218	0.035546	0.004046	0	0.039593	0.009455	0.000245	0	0.0097	0.000508	5.78E-05	0	0.000566	0	0	0	0.000566	0.036278	0.00413	0	0.040407	0	0	0	0.040407	0.145124	0.008562	0	0.153687	0	0	0	0	0.05774	5.499774
336.3563	0.002072	0.018158	0.002088	0.022318	0.007678	0.000563	0.002189	0.01043	0.009699	0.077437	0.011575	0.098711	0.025184	0.004671	0.016305	0.144872	0.014152	0.112996	0.012673	0.139822	0.025184	0.004671	0.016305	0.185982	0.219799	0.598459	0.244781	1.063038	0.003127	0.000183	1.56E-05	0.003325	0.017137	35.46835
474.5751	0.000859	0.000141	0	0.001	0.06866	0.006109	0	0.07477	0.018499	0.003032	0	0.02153	0	0	0	0.02153	0.021059	0.003451	0	0.024511	0	0	0	0.024511	0.059646	0.09987	0	0.159516	0.004127	0.000367	0	0.004494	0.068731	42.39361
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
223.7233	0.504523	0.082223	0	0.586746	0.040542	0.005066	0	0.045607	0.007209	0.001175	0	0.008383	0	0	0	0.008383	0.514903	0.083914	0	0.598817	0	0	0	0.598817	1.633888	0.157898	0	1.791786	0	0	0	0	0.139949	25.859
276.0911	0.000549	0	0.000825	0.001374	0.002693	0	0.000695	0.003388	0.001698	0	0.003343	0.005041	0.001081	0.000283	0.001086	0.007491	0.002478	0	0.00366	0.006138	0.001081	0.000283	0.001086	0.008588	0.114955	0	0.07933	0.194285	0.002722	0	7.02E-06	0.002729	0.010719	29.11346
209.6533	0.000555	0	0	0.000555	0.033031	0	0	0.033031	0.01195	0	0	0.01195	0	0	0	0.01195	0.013604	0	0	0.013604	0	0	0	0.013604	0.01368	0	0	0.01368	0.001987	0	0	0.001987	0.041242	18.72824
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1238.915	2.755216	0	0	2.755216	0.252561	0	0	0.252561	0.040326	0	0	0.040326	0	0	0	0.040326	2.812948	0	0	2.812948	0	0	0	2.812948	32.07193	0	0	32.07193	0	0	0	0	0.639545	143.1996
12.07742	0.000551	0	1.14E-07	0.000551	0.000776	0	2.03E-06	0.000778	0.002528	0	5.95E-07	0.002529	0.000139	2.83E-05	0.000264	0.002959	0.003689	0	6.52E-07	0.00369	0.000139	2.83E-05	0.000264	0.00412	0.184201	0	0.005124	0.189324	0.000119	0	5.22E-07	0.000119	0.000294	1.273548
78593.85	0.030103	0.116209	0	0.146312	11.59535	0.787147	0	12.38249	0.648112	2.501944	0	3.150057	0	0	0	3.150057	0.737826	2.848273	0	3.5861	0	0	0	3.5861	2.580162	36.87894	0	39.4591	0.696926	0.047311	0	0.744237	11.92936	7020.758
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1927.348	1.52627	0.493663	0	2.019933	0.350584	0.042319	0	0.392903	0.032466	0.00746	0	0.039926	0	0	0	0.039926	1.569814	0.504283	0	2.074097	0	0	0	2.074097	10.89577	1.633147	0	12.52892	0	0	0	0	1.174212	222.7721
134061.4	0.735913	0	2.770928	3.506842	1.891643	0	1.738796	3.630439	2.411591	0	11.60571	14.0173	17.23573	3.942364	12.70956	47.90496	3.518987	0	12.70679	16.22578	17.23573	3.942364	12.70956	50.11343	294.2349	0	130.1943	424.4292	1.288678	0	0.036655	1.325334	22.03014	14136.61
112.0921	0.000312	0	0	0.000312	0.01766	0	0	0.01766	0.006707	0	0	0.006707	0	0	0	0.006707	0.007636	0	0	0.007636	0	0	0	0.007636	0.138679	0	0	0.138679	0.001062	0	0	0.001062	0.001643	10.01314
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3211.064	0.010039	0	0.099427	0.109466	0.012239	0	0.048103	0.060342	0.032551	0	0.4156	0.448151	0.412453	0.104071	0.172638	1.137313	0.047498	0	0.45503	0.502528	0.412453	0.104071	0.172638	1.19169	4.943548	0	3.191121	8.134669	0.030322	0	0.001422	0.031745	0.443474	338.6027
12342.47	0.127575	0	0.33172	0.459295	0.222961	0	0.165026	0.387988	0.517284	0	1.563324	2.080609	2.697468	0.613948	1.914237	7.306261	0.75482	0	1.711643	2.466463	2.697468	0.613948	1.914237	7.692116	35.05325	0	15.6707	50.72395	0.1183	0	0.003718	0.122018	1.6358	1301.498
0.133763	4.4E-07	0	0	4.4E-07	2.11E-05	0	0	2.11E-05	9.48E-06	0	0	9.48E-06	0	0	0	9.48E-06	1.08E-05	0	0	1.08E-05	0	0	0	1.08E-05	8.62E-05	0	0	8.62E-05	1.27E-06	0	0	1.27E-06	1.16E-06	0.011949
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71.39648	0.000224	0	0.002132	0.002356	0.000273	0	0.001037	0.00131	0.000724	0	0.008871	0.009595	0.004146	0.001298	0.001246	0.016285	0.001057	0	0.009713	0.010769	0.004146	0.001298	0.001246	0.017459	0.109779	0	0.068074	0.177854	0.000672	0	3.35E-05	0.000706	0.009912	7.52867
92012.85	0.561422	0	1.932587	2.494008	1.25566	0	1.149418	2.405078	1.931866	0	8.209001	10.14087	9.556844	2.136798	7.002991	28.8375	2.818974	0	8.987823	11.8068	9.556844	2.136798	7.002991	30.50343	196.0542	0	89.62814	285.6824	0.883755	0	0.025886	0.909641	12.48881	9702.64
310.433	0.0008	0	0	0.0008	0.048909	0	0	0.048909	0.01723	0	0	0.01723	0	0	0	0.01723	0.019616	0	0	0.019616	0	0	0	0.019616	0.179575	0	0	0.179575	0.002942	0	0	0.002942	0.003553	27.73085
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854.6504	0.002651	0	0.026371	0.029022	0.003221	0	0.012754	0.015975	0.008605	0	0.110316	0.118921	0.064891	0.018881	0.022302	0.224995	0.012556	0	0.120782	0.133339	0.064891	0.018881	0.022302	0.239413	1.305883	0	0.846897	2.152779	0.008004	0	0.000445	0.008449	0.118179	90.12182
12449.11	0.040751	0.048252	0.184487	0.27349	0.075761	0.001355	0.324158	0.401274	0.171995	0.168735	0.860282	1.201012	1.09088	0.236139	1.496822	4.024854	0.250975	0.246217	0.941901	1.439093	1.09088	0.236139	1.496822	4.262935	11.94582	1.890769	23.98651	37.8231	0.12068	0.000556	0.001836	0.123072	0.821382	1312.743
7239.736	0.062568	0.001871	0	0.064439	1.13346	0.007163	0	1.140623	1.347046	0.040285	0	1.387331	0	0	0	1.387331	1.533522	0.045862	0	1.579384	0	0	0	1.579384	3.621595	0.333905	0	3.9555	0.068169	0.000431	0	0.0686	2.580635	646.7228
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1803.771	0.003487	0.006318	0.023714	0.03352	0.009884	0.000173	0.042615	0.052671	0.013409	0.022164	0.109644	0.145217	0.158415	0.031939	0.205014	0.540585	0.019566	0.032342	0.120046	0.171954	0.158415	0.031939	0.205014	0.567323	1.371018	0.255412	3.14027	4.7667	0.017504	8.72E-05	0.000241	0.017832	0.105794	190.2054

3818.526	0.027766	0.000845	0	0.02861	0.59643	0.00518	0	0.60161	0.597784	0.018182	0	0.615966	0	0	0	0.615966	0.680537	0.020699	0	0.701236	0	0	0	0.701236	1.555401	0.150702	0	1.706103	0.035871	0.000312	0	0.036182	1.18366	341.1074
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
924.7964	0.689405	0	0.24101	0.930415	0.166852	0	0.009646	0.176499	4.292009	0	1.748153	6.040162	3.351732	5.691576	6.118499	21.20197	5.282488	0	1.902006	7.184494	3.351732	5.691576	6.118499	22.3463	50.48805	0	12.30939	62.79745	0.008481	0	0.000661	0.009143	0.040746	97.51862
64718	0.383417	0	1.322931	1.706348	0.814871	0	0.724034	1.538905	1.408688	0	5.975463	7.384151	7.330328	1.595577	5.338113	21.64817	2.055554	0	6.54238	8.597934	7.330328	1.595577	5.338113	22.86195	122.8937	0	57.93489	180.8286	0.62079	0	0.019014	0.639803	7.088922	6824.433
813.3327	0.000932	0	0	0.000932	0.128141	0	0	0.128141	0.02006	0	0	0.02006	0	0	0	0.02006	0.022837	0	0	0.022837	0	0	0	0.022837	0.481111	0.007707	0	0	0.481111	0.007707	0	0	0.007707	0.00687	72.65469
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
526.8876	0.001607	0	0.016372	0.017979	0.00195	0	0.007898	0.009848	0.005229	0	0.068667	0.073896	0.045748	0.012764	0.016793	0.149201	0.00763	0	0.075182	0.082812	0.045748	0.012764	0.016793	0.158117	0.794697	0	0.527153	1.32185	0.004871	0	0.000338	0.005209	0.072002	55.55964
1128.886	0.002915	0	0.000212	0.003126	0.008986	0	0.00034	0.009326	0.009408	0	0.000786	0.010194	0.190768	0.039835	0.001038	0.241835	0.013728	0	0.000861	0.014589	0.190768	0.039835	0.001038	0.24623	0.163663	0	0.01658	0.180243	0.011158	0	1.84E-06	0.01116	0.027384	119.0396
355.1327	0.001321	0	0	0.001321	0.055951	0	0	0.055951	0.028445	0	0	0.028445	0	0	0	0.028445	0.032382	0	0	0.032382	0	0	0	0.032382	0.098478	0	0	0.098478	0.003365	0	0	0.003365	0.060162	31.72386
3254.244	0.008615	0.010853	0.031945	0.051413	0.020105	0.000267	0.023241	0.043613	0.036809	0.040987	0.161421	0.239217	0.090621	0.017455	0.163735	0.511028	0.053711	0.059808	0.176736	0.290255	0.090621	0.017455	0.163735	0.562066	0.735213	0.596057	3.189078	4.520348	0.031647	0.0002	0.000325	0.032172	0.092217	343.156
13729.47	0.005067	0.002658	0	0.007725	2.06194	0.101144	0	2.163083	0.109102	0.057222	0	0.166324	0	0	0	0.166324	0.124204	0.065143	0	0.189347	0	0	0	0.189347	0.63848	2.323688	0	2.962169	0.123931	0.006079	0	0.13001	2.719205	1226.448
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
191.7719	0.124416	0.075189	0	0.199604	0.033901	0.005193	0	0.039094	0.001778	0.001074	0	0.002852	0	0	0	0.002852	0.126975	0.076735	0	0.203711	0	0	0	0.203711	0.469594	0.19457	0	0.664164	0	0	0	0	0.199962	22.16591
574.0283	0.002674	0.001882	0.006655	0.011211	0.005174	4.3E-05	0.005254	0.010471	0.012665	0.007378	0.036119	0.056162	0.03953	0.007568	0.043536	0.146796	0.018481	0.010765	0.039546	0.068792	0.03953	0.007568	0.043536	0.159426	0.290188	0.057082	0.735093	1.082362	0.00558	3.56E-05	5.88E-05	0.005675	0.015951	60.53057
1079.537	0.001728	0.000529	0	0.002257	0.16524	0.004842	0	0.170082	0.037207	0.011395	0	0.048602	0	0	0	0.048602	0.042357	0.012973	0	0.05533	0	0	0	0.05533	0.132109	0.179875	0	0.311984	0.009932	0.000291	0	0.010223	0.178935	96.43463
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47.89156	0.036115	0.004067	0	0.040182	0.009515	0.000248	0	0.009763	0.000516	5.81E-05	0	0.000574	0	0	0	0.000574	0.036858	0.004151	0	0.041009	0	0	0	0.041009	0.146719	0.008836	0	0.155555	0	0	0	0	0.058446	5.535534
328.9627	0.001473	0.017886	0.002015	0.021374	0.00674	0.000553	0.002193	0.009486	0.006684	0.076139	0.011094	0.093917	0.024584	0.004518	0.015939	0.138959	0.009754	0.111102	0.012146	0.133002	0.024584	0.004518	0.015939	0.178043	0.1472	0.588424	0.232586	0.968211	0.003058	0.000179	1.52E-05	0.003252	0.016822	34.6887
456.0527	0.000751	0.000137	0	0.000889	0.065982	0.00587	0	0.071851	0.016175	0.002955	0	0.019131	0	0	0	0.019131	0.018414	0.003365	0	0.021779	0	0	0	0.021779	0.053683	0.10008	0	0.153763	0.003966	0.000353	0	0.004319	0.068339	40.73901
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
221.3768	0.495883	0.082431	0	0.578314	0.040026	0.005103	0	0.045129	0.007085	0.001178	0	0.008263	0	0	0	0.008263	0.506085	0.084127	0	0.590211	0	0	0	0.590211	1.598884	0.160484	0	1.759369	0	0	0	0	0.138773	25.58778
256.7955	0.000505	0	0.000755	0.00126	0.002499	0	0.000651	0.003149	0.001554	0	0.003042	0.004596	0.001133	0.000285	0.001117	0.007132	0.002268	0	0.003331	0.005599	0.001133	0.000285	0.001117	0.008134	0.113378	0	0.073791	0.187169	0.002532	0	6.39E-06	0.002539	0.010278	27.07877
204.608	0.000543	0	0	0.000543	0.032236	0	0	0.032236	0.0117	0	0	0.0117	0	0	0	0.0117	0.013319	0	0	0.013319	0	0	0	0.013319	0.013457	0	0	0.013457	0.001939	0	0	0.001939	0.040397	18.27755
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1234.158	2.745623	0	0	2.745623	0.251591	0	0	0.251591	0.040215	0	0	0.040215	0	0	0	0.040215	2.803186	0	0	2.803186	0	0	0	2.803186	31.96269	0	0	31.96269	0	0	0	0	0.634734	142.6498
11.48064	0.000527	0	9.75E-08	0.000527	0.000738	0	1.08E-07	0.000739	0.002409	0	5.11E-07	0.002409	0.000123	2.38E-05	0.00023	0.002786	0.003515	0	5.59E-07	0.003515	0.000123	2.38E-05	0.00023	0.003892	0.178872	0	0.004894	0.183766	0.000113	0	4.91E-07	0.000113	0.000282	1.21062
79239.81	0.030251	0.118095	0	0.148346	11.69195	0.792313	0	12.48426	0.651286	2.542561	0	3.193847	0	0	0	3.193847	0.74144	2.894512	0	3.635952	0	0	0	3.635952	2.568831	37.49269	0	40.06152	0.702733	0.047621	0	0.750354	12.16385	7078.461
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1909.297	1.456872	0.486444	0	1.943316	0.347065	0.042158	0	0.389223	0.030858	0.007334	0	0.038192	0	0	0	0.038192	1.498286	0.496889	0	1.995175	0	0	0	1.995175	10.56048	1.637912	0	12.19839	0	0	0	0	1.174183	220.6857
132772.1	0.707121	0	2.658593	3.365713	1.864943	0	1.719074	3.584017	2.283056	0	11.03132	13.31438	16.8711	3.748587	12.42799	46.36206	3.33143	0	12.07791	15.40934	16.8711	3.748587	12.42799	48.45702	288.9585	0	125.9137	414.8722	1.276393	0	0.036194	1.312588	22.16993	14000.66
100.7949	0.000265	0	0	0.000265	0.01588	0	0	0.01588	0.005699	0	0	0.005699	0	0	0	0.005699	0.006488	0	0	0.006488	0	0	0	0.006488	0.121021	0	0	0.121021	0.000955	0	0	0.000955	0.001502	9.003969
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3215.535	0.01003	0	0.100891	0.110921	0.012212	0	0.048707	0.060919	0.032576	0	0.422639	0.455215	0.427437	0.104492	0.179123	1.166266	0.047535	0	0.462736	0.510271	0.427437	0.104492	0.179123	1.221322	4.948483	0	3.245245	8.193728	0.030352	0	0.001436	0.031789	0.445076	339.0742
12061.4	0.113439	0	0.3073	0.420739	0.207784	0	0.160076	0.36786	0.451099	0	1.425672	1.876771	2.707871	0.584671	1.929341	7.098653	0.658242	0	1.560931	2.219173	2.707871	0.584671	1.929341	7.441056	32.47478	0	14.41769	46.89247	0.115629	0	0.00361	0.119239	1.627803	1271.86
0.13694	4.27E-07	0	0	4.27E-07	2.16E-05	0	0	2.16E-05	9.19E-06	0	0	9.19E-06	0	0	0	9.19E-06	1.05E-05	0	0	1.05E-05	0	0	0	1.05E-05	8.48E-05	0	0	8.48E-05	1.3E-06	0	0	0	1.3E-06	1.19E-06	0.012233
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76.75396	0.00024	0	0.002322	0.002562	0.000292	0	0.001127	0.001419	0.000778	0	0.009682	0.01046	0.004716	0.001444	0.001441	0.018062	0.001135	0	0.010601	0.011736	0.004716	0.001444	0.001441	0.019338	0.117915	0	0.074301	0.192216	0.000722	0	3.65E-05	0.000759	0.010651	8.093609
91563.93	0.54431	0	1.882437	2.426746	1.233117	0	1.151709	2.384826	1.847055	0	7.931407	9.778461	9.446734	2.065761	6.914665	28.20562	2.695218	0	8.683892	11.37911	9.446734	2.065761	6.914665	29.80627	194.0863	0	88.06168	282.148	0.879442	0	0.025761	0.905203	12.61075	9655.302
309.2409	0.000804	0	0	0.000804	0.048721	0	0	0.048721	0.017305	0	0	0.017305	0	0	0	0.017305	0.0197	0	0	0.0197	0	0	0	0.0197	0.180454	0	0	0.180454	0.00293	0	0	0.00293	0.003575	27.62437
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888.7899	0.00275	0	0.027796	0.030545	0.003336	0	0.013414	0.01675	0.008941	0	0.116528	0.125469	0.071828	0.020249	0.025032	0.242579	0.013047	0	0.127584	0.140631	0.071828	0.020249	0.025032	0.25774	1.357064	0	0.894612	2.251675	0.008319	0	0.000468	0.008787	0.122846	93.72179
11901.73	0.034911	0.046263	0.176117	0.257291	0.067636	0.001304	0.310501	0.379442	0.145136	0.16135	0.818452	1.124938	1.04717	0.21943	1.42409	3.815629	0.211782	0.235441	0.896102	1.343326	1.04717	0.21943	1.42409	4.034016	11.24771	1.840402	23.39178	36.4799	0.115344	0.000538	0.001779	0.117661	0.790485	1255.023
6936.792	0.057824	0.00182	0	0.059644	1.085972	0.006923	0	1.092894	1.244916	0.039176	0	1.284092	0	0	0	1.284092	1.417254	0.0446	0	1.461854	0	0	0	1.461854	3.322544	0.324714	0	3.647258	0.065313	0.000416	0	0.06573	2.508936	619.6609
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1712.007	0.003036	0.005978	0.022234	0.031247	0.0088	0.000165	0.040374	0.049338	0.011469	0.020898	0.102286	0.134654	0.155523	0.030238	0.201163	0.521579	0.016736	0.030494	0.111991	0.159221	0.155523	0.030238	0.201163	0.546146	1.303911	0.24673	3.045995	4.596636	0.01661	8.38E-05	0.000231	0.016925	0.101233	180.529
3679.862	0.026464	0.000829	0	0.027293	0.574701	0.005063	0	0.579764	0.569747	0.017849	0	0.587595	0	0	0	0.587595	0.648619	0.02032	0	0.668938	0	0	0	0.668938	1.480919	0.14794	0	1.628859	0.034564	0.000305	0	0.034869	1.151471	328.7206
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
924.0747	0.682475	0	0.238757	0.921232	0.16604	0	0.009439	0.175479	4.229837	0	1.727815	5.957653	3.349082	5.720961	6.155176	21.18287	5.215367	0	1.880021	7.095388	3.349082	5.720961	6.155176	22.32061	49.88098	0	12.35397	62.23494	0.008479	0	0.000656	0.009135	0.040851	97.44252
64143.23	0.366913	0	1.275371	1.642284	0.791326	0	0.721032	1.512358	1.327769	0	5.70498	7.032749	7.242953	1.540258	5.265263	21.08122	1.937478	0	6.246235	8.183713	7.242953	1.540258	5.265263	22.23219	120.5999	0	56.49891	177.0988	0.61529	0	0.018831	0.634121	7.146327	6763.823
786.997	0.000861	0	0	0.000861	0.123992	0	0	0.123992	0.018536	0	0	0.018536	0	0	0	0.018536	0.021102	0	0	0.021102	0	0	0	0.021102	0.458635	0	0	0.458635	0.007457	0	0	0.007457	0.006733	70.30213
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
547.846	0.001666	0	0.017248	0.018914	0.002019	0	0.008303	0.010322	0.005433	0	0.072499	0.077931	0.048909	0.01345	0.017864	0.158155	0.007927	0	0.079377	0.087304	0.048909	0.01345	0.017864	0.167528	0.825606	0	0.556582	1.382189	0.005061	0	0.000355	0.005416	0.074817	57.76968
1107.34	0.002693	0	0.000204	0.002898	0.008524	0	0.000331	0.008855	0.008481	0	0.000755	0.009236	0.175998	0.035898	0.000953	0.222084	0.012376	0	0.000826	0.013202	0.175998	0.035898	0.000953	0.22605	0.145741	0	0.015904	0.161645	0.010945	0	1.78E-06	0.010947	0.026867	116.7676
352.3981	0.001274	0	0	0.001274	0.05552	0	0	0.05552	0.027424	0	0	0.027424	0	0	0	0.027424	0.031221	0	0	0.031221	0	0	0	0.031221	0.094114	0	0	0.094114	0.003339	0	0	0.003339	0.060861	31.47958
3064.063	0.007727	0.010407	0.030486	0.048621	0.018409	0.000252	0.022265	0.040926	0.032561	0.03934	0.153489	0.22539	0.088037	0.01633	0.159108	0.488866	0.047513	0.057405	0.168051	0.272969	0.088037	0.01633	0.159108	0.536445	0.638582	0.572063	2.992353	4.202998	0.029792	0.000191	0.000309	0.030291	0.087417	323.1017
13351.43	0.004662	0.002585	0	0.007246	2.005226	0.098298	0	2.103524	0.100364	0.05565	0	0.156014	0	0	0	0.156014	0.114257	0.063353	0	0.17761	0	0	0	0.17761	0.606	2.278276	0	2.884276	0.120522	0.005908	0	0.12643	2.664726	1192.678
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
189.3276	0.123103	0.074527	0	0.19763	0.033416	0.00518	0	0.038596	0.001759	0.001065	0	0.002824	0	0	0	0.002824	0.125636	0.07606	0	0.201696	0	0	0	0.201696	0.462853	0.195907	0	0.65876	0	0	0	0	0.197512	21.88338
532.9175	0.002449	0.001799	0.006361	0.010609	0.004674	4.06E-05	0.004953	0.009667	0.011609	0.007085	0.034623	0.053317	0.038242	0.007205	0.041985	0.140749	0.01694	0.010338	0.037908	0.065186	0.038242	0.007205	0.041985	0.152618	0.269057	0.054812	0.704416	1.028284	0.005178	3.4E-05	5.63E-05	0.005268	0.014895	56.19549
1077.59	0.001638	0.000527	0	0.002165	0.164996	0.004778	0	0.169775	0.035261	0.011345	0	0.046606	0	0	0	0.046606	0.040142	0.012915	0	0.053057	0	0	0	0.053057	0.126639	0.179418	0	0.306057	0.009917	0.000287	0	0.010204	0.179884	96.26065
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48.2057	0.036677	0.004086	0	0.040763	0.009577	0.00025	0	0.009827	0.000524	5.84E-05	0	0.000582	0	0	0	0.000582	0.037432	0.00417	0	0.041602	0	0	0	0.041602	0.148267	0.009112	0	0.157379	0	0	0	0	0.059141	5.571844
321.2948	0.001063	0.017584	0.001936	0.020583	0.005962	0.000543	0.002175	0.008679	0.004636	0.074761	0.010598	0.089995	0.025865	0.004588	0.016881	0.137329	0.006765	0.109091	0.011604	0.12746	0.025865	0.004588	0.016881	0.174794	0.096956	0.577775	0.22258	0.897312	0.002986	0.000176	1.47E-05	0.003176	0.016487	33.88014
437.4899	0.000653	0.000134	0	0.000787	0.063295	0.005631	0	0.068927	0.014062	0.00288	0	0.016942	0	0	0	0.016942	0.016008	0.003279	0	0.019287	0	0	0	0.019287	0.048139	0.100034	0	0.148173	0.003804	0.000338	0	0.004143	0.067672	39.0808
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
218.175	0.485279	0.082326	0	0.567605	0.039355	0.005122	0	0.044476	0.006934	0.001176	0	0.00811	0	0	0	0.00811	0.495263	0.08402	0	0.579282	0	0	0	0.579282	1.557594	0.162564	0	1.720159	0	0	0	0	0.137048	25.21771
222.7468	0.000419	0	0.00063	0.001049	0.002019	0	0.000587	0.002606	0.001276	0	0.002511	0.003787	0.001025	0.00026	0.001023	0.006095	0.001862	0	0.00275	0.004611	0.001025	0.00026	0.001023	0.006919	0.107594	0	0.067183	0.174777	0.002197	0	5.5E-06	0.002202	0.009571	23.48837
151.4071	0.000401	0	0	0.000401	0.023854	0	0	0.023854	0.008628	0	0	0.008628	0	0	0	0.008628	0.009822	0	0	0.009822	0	0	0	0.009822	0.009914	0	0	0.009914	0.001435	0	0	0.001435	0.030574	13.52514
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
997.1126	2.214136	0	0	2.214136	0.203268	0	0	0.203268	0.03262	0	0	0.03262	0	0	0	0.03262	2.260763	0	0	2.260763	0	0	0	2.260763	25.72629	0	0	25.72629	0	0	0	0	0.517529	115.251
10.91186	0.000507	0	9.29E-08	0.000507	0.000697	0	2.29E-08	0.000697	0.002316	0	4.87E-07	0.002316	0.000114	2.07E-05	0.00021	0.002662	0.003379	0	5.33E-07	0.00338	0.000114	2.07E-05	0.00021	0.003725	0.173406	0	0.004571	0.177977	0.000107	0	4.63E-07	0.000108	0.000271	1.150642
79842.21	0.030402	0.120086	0	0.150488	11.78015	0.799018	0	12.57917	0.65454	2.585426	0	3.239966	0	0	0	3.239966	0.745143	2.943311	0	3.688454	0	0	0	3.688454	2.565102	38.13654	0	40.70164	0.708034	0.048024	0	0.756058	12.38207	7132.273
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1886.849	1.391858	0.478394	0	1.870253	0.342757	0.041889	0	0.384647	0.029466	0.007201	0	0.036667	0	0	0	0.036667	1.431407	0.488653	0	1.92006	0	0	0	1.92006	10.22652	1.638594	0	11.86511	0	0	0	0	1.169704	218.091
131727.8	0.68202	0	2.55631	3.238329	1.842131	0	1.702283	3.544414	2.169131	0	10.50083	12.66996	16.52398	3.552744	12.16607	44.91275	3.165191	0	11.49709	14.66228	16.52398	3.552744	12.16607	46.90507	284.6414	0	121.9927	406.6342	1.266463	0	0.0358	1.302263	22.29187	13890.53
91.45913	0.000224	0	0	0.000224	0.014409	0	0	0.014409	0.004819	0	0	0.004819	0	0	0	0.004819	0.005486	0	0	0.005486	0	0	0	0.005486	0.106171	0	0	0.106171	0.000867	0	0	0.000867	0.001387	8.170008
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3218.819	0.010028	0	0.102137	0.112165	0.012187	0	0.049211	0.061398	0.032617	0	0.428719	0.461336	0.443043	0.1047	0.185864	1.194943	0.047595	0	0.469393	0.516988	0.443043	0.1047	0.185864	1.250596	4.953564	0	3.292007	8.245572	0.030374	0	0.001448	0.031821	0.446074	339.4204
11806.79	0.100597	0	0.284541	0.385138	0.194025	0	0.155462	0.349487	0.390783	0	1.297245	1.688028	2.657519	0.545901	1.894611	6.78606	0.57023	0	1.42032	1.99055	2.657519	0.545901	1.894611	7.088582	30.13529	0	13.24371	43.379	0.113213	0	0.00351	0.116722	1.620202	1245.011
0.136735	2.95E-07	0	0	2.95E-07	2.15E-05	0	0	2.15E-05	6.34E-06	0	0	6.34E-06	0	0	0	6.34E-06	7.22E-06	0	0	7.22E-06	0	0	0	7.22E-06	6.52E-05	0	0	6.52E-05	1.3E-06	0	0	1.3E-06	1.2E-06	0.012215
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81.77947	0.000256	0	0.002504	0.00276	0.00031	0	0.001213	0.001523	0.000829	0	0.010464	0.011293	0.005354	0.001599	0.001673	0.019919	0.00121	0	0.011457	0.012666	0.005354	0.001599	0.001673	0.021293	0.125575	0	0.080302	0.205877	0.000769	0	3.94E-05	0.000808	0.011336	8.623543
91172.48	0.529605	0	1.837086	2.366691	1.213248	0	1.154225	2.367473	1.773441	0	7.681104	9.454545	9.440355	2.005536	6.911665	27.8121	2.587801	0	8.409842	10.99764	9.440355	2.005536	6.911665	29.3552	192.5635	0	86.69741	279.261	0.875683	0	0.02565	0.901333	12.71388	9614.024
308.3958	0.00081	0	0	0.00081	0.048588	0	0	0.048588	0.01743	0	0	0.01743	0	0	0	0.01743	0.019843	0	0	0.019843	0	0	0	0.019843	0.181892	0	0	0.181892	0.002922	0	0	0.002922	0.003597	27.54887
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920.0225	0.002842	0	0.029117	0.031959	0.00344	0	0.014024	0.017464	0.009256	0	0.122322	0.131577	0.080713	0.021797	0.028804	0.262891	0.013506	0	0.133927	0.147433	0.080713	0.021797	0.028804	0.278746	1.404313	0	0.93911	2.343423	0.008606	0	0.00049	0.009095	0.127034	97.01523
11396.59	0.030235	0.044426	0.168271	0.242932	0.059711	0.001257	0.29852	0.359487	0.123462	0.154611	0.779111	1.057184	1.036256	0.207908	1.399226	3.700574	0.180156	0.225608	0.853028	1.258792	1.036256	0.207908	1.399226	3.902182	10.58028	1.792731	22.69431	35.06732	0.110422	0.000522	0.001723	0.112667	0.761763	1201.756
6650.604	0.05353	0.001769	0	0.0553	1.041115	0.00669	0	1.047805	1.15248	0.038088	0	1.190567	0	0	0	1.190567	1.312021	0.04336	0	1.355382	0	0	0	1.355382	3.052515	0.315691	0	3.368206	0.062615	0.000402	0	0.063018	2.438715	594.0958
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1625.763	0.002664	0.005651	0.020839	0.029154	0.007826	0.000156	0.038228	0.04621	0.00989	0.019688	0.095377	0.124955	0.151765	0.028457	0.196504	0.501681	0.014432	0.028729	0.104426	0.147586	0.151765	0.028457	0.196504	0.524313	1.240365	0.23819	2.94968	4.428235	0.015769	8.05E-05	0.000222	0.016072	0.096938	171.4347
3546.937	0.025216	0.000813	0	0.026029	0.553874	0.004947	0	0.558821	0.542885	0.017514	0	0.560399	0	0	0	0.560399	0.618039	0.019938	0	0.637977	0	0	0	0.637977	1.411217	0.145162	0	1.556379	0.033311	0.000298	0	0.033609	1.119715	316.8465
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923.5952	0.676515	0	0.236673	0.913188	0.165319	0	0.009246	0.174564	4.175577	0	1.708999	5.884576	3.348223	5.750261	6.191293	21.17435	5.157106	0	1.859686	7.016792	3.348223	5.750261	6.191293	22.30657	49.34926	0	12.40039	61.74965	0.008479	0	0.000652	0.009131	0.040947	97.39196
63661.92	0.353597	0	1.23461	1.588207	0.772181	0	0.719416	1.491597	1.261902	0	5.474594	6.736496	7.196869	1.489603	5.226099	20.64907	1.841365	0	5.993991	7.835356	7.196869	1.489603	5.226099	21.74793	118.8628	0	55.30515	174.168	0.610685	0	0.018678	0.629363	7.198586	6713.07
763.2733	0.000801	0	0	0.000801	0.120254	0	0	0.120254	0.017239	0	0	0.017239	0	0	0	0.017239	0.019625	0	0	0.019625	0	0	0	0.019625	0.439334	0	0	0.439334	0.007232	0	0	0.007232	0.006611	68.1829
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567.1803	0.001722	0	0.018068	0.01979	0.002082	0	0.00868	0.010762	0.005624	0	0.076102	0.081727	0.055862	0.014501	0.021028	0.173117	0.008207	0	0.083322	0.091529	0.055862	0.014501	0.021028	0.18292	0.854367	0	0.58426	1.438627	0.005235	0	0.000372	0.005607	0.077364	59.80846
1088.844	0.002525	0	0.000198	0.002723	0.00816	0	0.000322	0.008482	0.007785	0	0.000728	0.008513	0.166944	0.032864	0.000901	0.209222	0.01136	0	0.000797	0.012157	0.166944	0.032864	0.000901	0.212866	0.132224	0	0.015348	0.147572	0.010763	0	1.73E-06	0.010764	0.026427	114.8173
349.5745	0.001229	0	0	0.001229	0.055076	0	0	0.055076	0.026468	0	0	0.026468	0	0	0	0.026468	0.030132	0	0	0.030132	0.090002	0	0	0.030132	0.090002	0	0	0.090002	0.003312	0	0	0.003312	0.061498	31.22735
2888.401	0.006973	0.009984	0.029086	0.046043	0.016824	0.000238	0.021518	0.03858	0.029013	0.037771	0.145951	0.212735	0.086275	0.015345	0.156398	0.470754	0.042336	0.055115	0.159798	0.257249	0.086275	0.015345	0.156398	0.515268	0.562152	0.549229	2.814557	3.925939	0.02808	0.000182	0.000293	0.028555	0.082955	304.5783
12998.18	0.004347	0.002516	0	0.006863	1.952462	0.095406	0	2.047868	0.093586	0.054166	0	0.147752	0	0	0	0.147752	0.10654	0.061664	0	0.168204	0	0	0	0.168204	0.579065	2.230634	0	2.809699	0.117351	0.005734	0	0.123085	2.614099	1161.122
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186.7139	0.121743	0.073557	0	0.1953	0.032916	0.005147	0	0.038063	0.001739	0.001051	0	0.00279	0	0	0	0.00279	0.124248	0.07507	0	0.199318	0	0	0	0.199318	0.455839	0.196574	0	0.652413	0	0	0	0	0.194943	21.58128
496.3397	0.002272	0.001722	0.006078	0.010072	0.004298	3.84E-05	0.004723	0.009059	0.010777	0.006808	0.033179	0.050764	0.037084	0.006834	0.04054	0.135222	0.015726	0.009934	0.036327	0.061987	0.037084	0.006834	0.04054	0.146445	0.247934	0.052661	0.672764	0.973358	0.00482	3.26E-05	5.39E-05	0.004907	0.013951	52.3384
1076.108	0.001559	0.000525	0	0.002084	0.164828	0.004713	0	0.169541	0.033561	0.011296	0	0.044857	0	0	0	0.044857	0.038207	0.01286	0	0.051067	0	0	0	0.051067	0.121712	0.178921	0	0.300633	0.009907	0.000283	0	0.01019	0.18084	96.12833
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48.52166	0.037214	0.004096	0	0.041309	0.009639	0.000253	0	0.009891	0.000532	5.85E-05	0	0.00059	0	0	0	0.00059	0.037979	0.00418	0	0.042159	0	0	0	0.042159	0.149718	0.009363	0	0.15908	0	0	0	0	0.059804	5.608363
312.1158	0.000862	0.017183	0.001875	0.019919	0.005539	0.000527	0.002144	0.008209	0.003646	0.073013	0.010234	0.086894	0.027732	0.004676	0.018291	0.137593	0.005321	0.106541	0.011205	0.123067	0.027732	0.004676	0.018291	0.173766	0.074039	0.56427	0.21471	0.853018	0.0029	0.000171	1.43E-05	0.003086	0.01608	32.91222
419.665	0.000566	0.00013	0	0.000696	0.060716	0.005402	0	0.066118	0.012179	0.002807	0	0.014986	0	0	0	0.014986	0.013865	0.003195	0	0.01706	0	0	0	0.01706	0.043103	0.099848	0	0.14295	0.003649	0.000325	0	0.003974	0.066869	37.48851
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214.4303	0.473393	0.081928	0	0.55532	0.038587	0.005126	0	0.043713	0.006764	0.001171	0	0.007934	0	0	0	0.007934	0.483132	0.083613	0	0.566745	0	0	0	0.566745	1.511982	0.164309	0	1.676291	0	0	0	0	0.135	24.78487
217.7074	0.000411	0	0.00061	0.00102	0.001987	0	0.000583	0.002571	0.001246	0	0.002431	0.003677	0.001022	0.00026	0.001022	0.005982	0.001819	0	0.002662	0.00448	0.001022	0.00026	0.001022	0.006785	0.109263	0	0.066579	0.175843	0.002147	0	5.29E-06	0.002152	0.009569	22.95698
139.7061	0.000374	0	0	0.000374	0.022011	0	0	0.022011	0.008051	0	0	0.008051	0	0	0	0.008051	0.009166	0	0	0.009166	0	0	0	0.009166	0.009363	0	0	0.009363	0.001324	0	0	0.001324	0.027797	12.47989
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909.6907	2.022877	0	0	2.022877	0.185446	0	0	0.185446	0.029914	0	0	0.029914	0	0	0	0.029914	2.065599	0	0	2.065599	0	0	0	2.065599	23.51751	0	0	23.51751	0	0	0	0	0.47123	105.1464
10.38624	0.000487	0	1.23E-07	0.000487	0.000658	0	0	0.000658	0.002224	0	6.51E-07	0.002224	0.00011	1.87E-05	0.000202	0.002554	0.003245	0	7.13E-07	0.003246	0.00011	1.87E-05	0.000202	0.003576	0.167445	0	0.004415	0.17186	0.000102	0	4.4E-07	0.000103	0.00026	1.095216

80669.05	0.030674	0.122275	0	0.152949	11.90155	0.807888	0	12.70944	0.660395	2.632547	0	3.292942	0	0	0	3.292942	0.75181	2.996954	0	3.748764	0	0	0	3.748764	2.567754	38.84147	0	41.40922	0.71533	0.048557	0	0.763888	12.61773	7206.134
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1864.051	1.33193	0.47109	0	1.80302	0.338382	0.041616	0	0.379999	0.028134	0.007078	0	0.035212	0	0	0	0.035212	1.369704	0.481178	0	1.850882	0	0	0	1.850882	9.906659	1.639316	0	11.54598	0	0	0	0	1.164555	215.4558
130889.5	0.660972	0	2.468585	3.129556	1.823806	0	1.688998	3.512804	2.073695	0	10.04593	12.11962	16.25963	3.385724	11.9693	43.73428	3.025931	0	10.99903	14.02496	16.25963	3.385724	11.9693	45.63961	281.0627	0	118.7341	399.7968	1.25849	0	0.035486	1.293976	22.40025	13802.13
84.01289	0.000191	0	0	0.000191	0.013236	0	0	0.013236	0.004118	0	0	0.004118	0	0	0	0.004118	0.004688	0	0	0.004688	0	0	0	0.004688	0.094037	0	0	0.094037	0.000796	0	0	0.000796	0.001295	7.504838
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3218.159	0.010008	0	0.103197	0.113205	0.012151	0	0.049634	0.061784	0.032595	0	0.433956	0.466551	0.484855	0.107354	0.20586	1.264619	0.047562	0	0.475127	0.522689	0.484855	0.107354	0.20586	1.320757	4.95106	0	3.332293	8.283353	0.030358	0	0.001457	0.031815	0.446605	339.3509
11585.37	0.090064	0	0.265152	0.355217	0.182659	0	0.151478	0.334137	0.341542	0	1.188768	1.53031	2.488828	0.499897	1.762486	6.281522	0.498378	0	1.301551	1.799929	2.488828	0.499897	1.762486	6.551141	28.21937	0	12.28239	40.50176	0.11111	0	0.003423	0.114533	1.614395	1221.663
0.139696	2.99E-07	0	0	2.99E-07	2.2E-05	0	0	2.2E-05	6.43E-06	0	0	6.43E-06	0	0	0	6.43E-06	7.32E-06	0	0	7.32E-06	0	0	0	7.32E-06	6.64E-05	0	0	6.64E-05	1.32E-06	0	0	1.32E-06	1.23E-06	0.012479
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86.38416	0.000269	0	0.002678	0.002948	0.000326	0	0.001295	0.001621	0.000875	0	0.011214	0.012089	0.006105	0.001762	0.001953	0.02191	0.001277	0	0.012278	0.013555	0.006105	0.001762	0.001953	0.023375	0.132534	0	0.086062	0.218596	0.000812	0	4.22E-05	0.000854	0.011968	9.109101
90818.27	0.517035	0	1.797155	2.314189	1.196341	0	1.157094	2.353435	1.710718	0	7.461098	9.171816	9.627039	1.968721	7.065984	27.83356	2.496276	0	8.168963	10.66524	9.627039	1.968721	7.065984	29.32698	191.2661	0	85.55766	276.8238	0.872274	0	0.025557	0.897831	12.80133	9576.673
307.9813	0.000814	0	0	0.000814	0.048523	0	0	0.048523	0.017519	0	0	0.017519	0	0	0	0.017519	0.019944	0	0	0.019944	0	0	0	0.019944	0.182976	0	0	0.182976	0.002918	0	0	0.002918	0.00362	27.51185
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947.2476	0.002919	0	0.03033	0.033249	0.00353	0	0.01458	0.01811	0.009522	0	0.127661	0.137183	0.088887	0.023128	0.031922	0.281119	0.013895	0	0.139772	0.153667	0.088887	0.023128	0.031922	0.297603	1.444927	0	0.980125	2.425052	0.008855	0	0.000509	0.009365	0.130739	99.88608
10946.08	0.026288	0.042725	0.161262	0.230275	0.053053	0.001212	0.287611	0.341875	0.105145	0.148414	0.744277	0.997837	1.041176	0.198928	1.396611	3.634551	0.153428	0.216566	0.81489	1.184883	1.041176	0.198928	1.396611	3.821598	10.00912	1.747723	22.05454	33.81139	0.106037	0.000506	0.00167	0.108213	0.735666	1154.251
6382.79	0.049423	0.001717	0	0.05114	0.999158	0.006453	0	1.005611	1.064048	0.036966	0	1.101014	0	0	0	1.101014	1.211348	0.042083	0	1.253431	0	0	0	1.253431	2.795975	0.306394	0	3.102368	0.060092	0.000388	0	0.06048	2.372052	570.1721
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1549.705	0.002381	0.00535	0.019592	0.027323	0.007041	0.000149	0.036243	0.043433	0.008714	0.018575	0.08923	0.116519	0.149984	0.027011	0.194539	0.488052	0.012715	0.027105	0.097695	0.137515	0.149984	0.027011	0.194539	0.509049	1.189966	0.230279	2.86389	4.284134	0.015029	7.75E-05	0.000214	0.01532	0.093095	163.4144
3420.784	0.023968	0.000797	0	0.024764	0.534121	0.004824	0	0.538946	0.516013	0.017151	0	0.533164	0	0	0	0.533164	0.587446	0.019526	0	0.606972	0	0	0	0.606972	1.341737	0.142159	0	1.483896	0.032124	0.00029	0	0.032414	1.089369	305.5773
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923.2887	0.671113	0	0.235038	0.906151	0.164711	0	0.009079	0.17379	4.126723	0	1.693915	5.820638	3.348949	5.782925	6.229913	21.18243	5.104439	0	1.843399	6.947839	3.348949	5.782925	6.229913	22.30963	48.87451	0	12.45774	61.33226	0.008479	0	0.000649	0.009128	0.04104	97.35964
63241.3	0.340914	0	1.197553	1.538468	0.755186	0	0.718648	1.473834	1.198395	0	5.26268	6.461075	7.213213	1.44429	5.23641	20.35499	1.748695	0	5.761973	7.510668	7.213213	1.44429	5.23641	21.40458	117.2099	0	54.16375	171.3737	0.606661	0	0.018544	0.625205	7.245009	6668.716
742.5803	0.000741	0	0	0.000741	0.116994	0	0	0.116994	0.015961	0	0	0.015961	0	0	0	0.015961	0.018171	0	0	0.018171	0	0	0	0.018171	0.420577	0	0	0.420577	0.007036	0	0	0.007036	0.006504	66.3344
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584.5775	0.001771	0	0.01884	0.020611	0.002138	0	0.009034	0.011172	0.005792	0	0.079513	0.085305	0.063218	0.015547	0.024255	0.188324	0.008452	0	0.087056	0.095508	0.063218	0.015547	0.024255	0.198528	0.879868	0	0.610457	1.490325	0.005392	0	0.000387	0.005779	0.079687	61.64297
1073.119	0.002381	0	0.000193	0.002574	0.007844	0	0.000313	0.008157	0.007188	0	0.000705	0.007893	0.1627	0.030522	0.000876	0.201992	0.010489	0	0.000772	0.011261	0.1627	0.030522	0.000876	0.205359	0.120719	0	0.014844	0.135563	0.010607	0	1.69E-06	0.010609	0.026049	113.159
346.608	0.001184	0	0	0.001184	0.054608	0	0	0.054608	0.025499	0	0	0.025499	0	0	0	0.025499	0.029028	0	0	0.029028	0.08586	0	0	0.029028	0.08586	0	0	0.08586	0.003284	0	0	0.003284	0.062058	30.96236
2727.885	0.006296	0.009576	0.027792	0.043663	0.0155	0.000224	0.020552	0.036277	0.025842	0.036252	0.138993	0.201087	0.085224	0.014461	0.154973	0.455746	0.037709	0.052899	0.15218	0.242788	0.085224	0.014461	0.154973	0.497446	0.495869	0.52714	2.645459	3.668469	0.026516	0.000173	0.000279	0.026968	0.078841	287.652
12684.85	0.004083	0.002452	0	0.006535	1.905894	0.09261	0	1.998504	0.087912	0.052781	0	0.140693	0	0	0	0.140693	0.100081	0.060087	0	0.160168	0	0	0	0.160168	0.555726	2.184059	0	2.739785	0.114552	0.005566	0	0.120118	2.5694	1133.133
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184.2683	0.120504	0.072464	0	0.192968	0.032459	0.005105	0	0.037564	0.001722	0.001035	0	0.002757	0	0	0	0.002757	0.122983	0.073955	0	0.196938	0	0	0	0.196938	0.449494	0.19683	0	0.646325	0	0	0	0	0.192583	21.29861
464.6943	0.002131	0.001654	0.005873	0.009657	0.003998	3.64E-05	0.004539	0.008573	0.010121	0.006572	0.032162	0.048855	0.036339	0.006568	0.039671	0.131433	0.014769	0.00959	0.035213	0.059572	0.036339	0.006568	0.039671	0.14215	0.232129	0.050833	0.647288	0.930249	0.004511	3.13E-05	5.18E-05	0.004594	0.013131	49.00143
1074.872	0.001476	0.000523	0	0.001999	0.164692	0.004654	0	0.169346	0.031781	0.011261	0	0.043042	0	0	0	0.043042	0.03618	0.012819	0	0.049	0	0	0	0.049	0.11663	0.178638	0	0.295268	0.009899	0.00028	0	0.010178	0.181823	96.01785
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48.75155	0.037669	0.004102	0	0.041771	0.009684	0.000255	0	0.009938	0.000538	5.86E-05	0	0.000597	0	0	0	0.000597	0.038444	0.004186	0	0.04263	0	0	0	0.04263	0.150877	0.009604	0	0.160481	0	0	0	0.060336	5.634936	
301.2179	0.000828	0.016683	0.001817	0.019328	0.005357	0.000507	0.002114	0.007978	0.003504	0.070899	0.009919	0.084322	0.029388	0.004732	0.019579	0.138021	0.005113	0.103456	0.01086	0.119429	0.029388	0.004732	0.019579	0.173128	0.071624	0.547931	0.209301	0.828857	0.002799	0.000165	1.39E-05	0.002978	0.01559	31.76306
402.5816	0.000487	0.000127	0	0.000614	0.058247	0.005179	0	0.063427	0.010478	0.002732	0	0.01321	0	0	0	0.01321	0.011929	0.00311	0	0.015039	0	0	0	0.015039	0.038487	0.099522	0	0.138009	0.003501	0.000311	0	0.003812	0.065968	35.96246

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210.1555	0.460303	0.081224	0	0.541527	0.037728	0.005114	0	0.042842	0.006577	0.001161	0	0.007737	0	0	0	0.007737	0.469773	0.082895	0	0.552668	0	0	0	0.552668	1.462323	0.165696	0	0	1.628019	0	0	0	0	0.13264	24.29077
189.1676	0.00034	0	0.000504	0.000844	0.001556	0	0.000532	0.002087	0.001017	0	0.00198	0.002997	0.000961	0.000248	0.000965	0.005171	0.001483	0	0.002168	0.003651	0.000961	0.000248	0.000965	0.005825	0.105877	0	0.060885	0.166762	0.001866	0	4.54E-06	0.00187	0.009039	19.94749
128.0098	0.000346	0	0	0.000346	0.020168	0	0	0.020168	0.007457	0	0	0.007457	0	0	0	0.007457	0.008489	0	0	0.008489	0	0	0	0.008489	0.008811	0	0	0.008811	0.001213	0	0	0.001213	0.025171	11.43507
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720.5954	1.643629	0	0	1.643629	0.146898	0	0	0.146898	0.024518	0	0	0.024518	0	0	0	0.024518	1.678572	0	0	1.678572	0	0	0	1.678572	19.07167	0	0	19.07167	0	0	0	0	0.385914	83.28983
9.900736	0.000467	0	1.24E-07	0.000467	0.000621	0	3.95E-07	0.000621	0.002129	0	6.53E-07	0.002424	0.003107	0	7.15E-07	0.003107	9.79E-05	1.63E-05	0.00018	0.002424	0.003107	9.79E-05	1.63E-05	0.00018	0.003401	0.161184	0	0.004276	0.16546	9.75E-05	0	4.2E-07	9.79E-05	0.00025	1.04402
81662.49	0.030968	0.124671	0	0.155639	12.04708	0.81888	0	12.86596	0.666726	2.684138	0	3.350864	0	0	0	3.350864	0.759017	3.055687	0	3.814703	0	0	0	3.814703	2.58838	39.61098	0	42.19936	0.724077	0.049218	0	0.773295	12.86954	7294.878
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1836.783	1.272456	0.463712	0	1.736168	0.333141	0.041299	0	0.37444	0.026775	0.006955	0	0.03373	0	0	0	0.03373	1.308427	0.473627	0	1.782054	0	0	0	1.782054	9.552707	1.638285	0	11.19099	0	0	0	0	1.158274	212.3041
130223.6	0.643018	0	2.391551	3.034569	1.808694	0	1.678485	3.487179	1.991077	0	9.641234	11.63231	15.79213	3.212185	11.60525	42.24188	2.905375	0	10.55594	13.46131	15.79213	3.212185	11.60525	44.07088	278.5068	0	115.8775	394.3843	1.252154	0	0.035239	1.287392	22.49547	13731.91
78.15425	0.000167	0	0	0.000167	0.012313	0	0	0.012313	0.003604	0	0	0.003604	0	0	0	0.003604	0.004103	0	0	0.004103	0	0	0	0.004103	0.084732	0	0	0.084732	0.000741	0	0	0.000741	0.001223	6.981488
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3219.172	0.010002	0	0.104101	0.114103	0.012126	0	0.049985	0.062112	0.032612	0	0.438491	0.471103	0.510306	0.108313	0.216929	1.30665	0.047587	0	0.480092	0.527679	0.510306	0.108313	0.216929	1.363227	4.954139	0	3.367178	8.321317	0.030361	0	0.001464	0.031825	0.446807	339.4576
11387.09	0.080496	0	0.24725	0.327747	0.172162	0	0.147811	0.319973	0.296792	0	1.088559	1.38535	2.376427	0.46013	1.679048	5.900956	0.433078	0	1.191835	1.624912	2.376427	0.46013	1.679048	6.140518	26.62408	0	11.4509	38.07499	0.109227	0	0.003346	0.112573	1.608636	1200.754
0.142267	3.03E-07	0	0	3.03E-07	2.24E-05	0	0	2.24E-05	6.52E-06	0	0	6.52E-06	0	0	0	6.52E-06	7.42E-06	0	0	7.42E-06	0	0	0	7.42E-06	6.76E-05	0	0	6.76E-05	1.35E-06	0	0	1.35E-06	1.26E-06	0.012709
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90.71355	0.000283	0	0.002844	0.003126	0.000341	0	0.001372	0.001714	0.000919	0	0.011932	0.012851	0.006909	0.001928	0.002252	0.023939	0.001341	0	0.013064	0.014404	0.006909	0.001928	0.002252	0.025493	0.139153	0	0.091571	0.230724	0.000852	0	4.48E-05	0.000897	0.012549	9.565631
90512.06	0.505333	0	1.760867	2.2662	1.180404	0	1.160045	2.340449	1.651468	0	7.25887	8.910338	9.669066	1.920699	7.101316	27.60142	2.409818	0	7.947549	10.35737	9.669066	1.920699	7.101316	29.04845	190.285	0	84.49983	274.7848	0.869324	0	0.02548	0.894804	12.87604	9544.384
307.7689	0.00082	0	0	0.00082	0.048489	0	0	0.048489	0.01766	0	0	0.01766	0	0	0	0.01766	0.020105	0	0	0.020105	0	0	0	0.020105	0.184634	0	0	0.184634	0.002916	0	0	0.002916	0.003642	27.49288
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
972.158	0.002992	0	0.031434	0.034425	0.003611	0	0.015083	0.018694	0.009774	0	0.132548	0.142321	0.098526	0.024562	0.035814	0.301223	0.014262	0	0.145123	0.159385	0.098526	0.024562	0.035814	0.318286	1.482984	0	1.01767	2.500654	0.009084	0	0.000527	0.009611	0.133989	102.5128
10505.85	0.021909	0.041096	0.154511	0.217515	0.046263	0.001169	0.277404	0.324835	0.084544	0.142439	0.710302	0.937285	1.024334	0.187063	1.363225	3.511907	0.123367	0.207847	0.777691	1.108904	1.024334	0.187063	1.363225	3.683526	9.393099	1.702867	21.38069	32.47666	0.101753	0.000491	0.001616	0.103861	0.711322	1107.829
6127.762	0.045597	0.001667	0	0.047263	0.959204	0.006227	0	0.965431	0.981668	0.035885	0	1.017553	0	0	0	1.017553	1.117564	0.040853	0	1.158417	0	0	0	1.158417	2.560673	0.297432	0	2.858106	0.057689	0.000375	0	0.058064	2.308534	547.3905
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1476.98	0.002128	0.005066	0.018433	0.025626	0.006358	0.000142	0.03435	0.04085	0.007662	0.017522	0.083521	0.108705	0.144401	0.02528	0.187995	0.466381	0.01118	0.025569	0.091445	0.128194	0.144401	0.02528	0.187995	0.485869	1.143767	0.222692	2.783113	4.149572	0.014321	7.45E-05	0.000206	0.014601	0.089577	155.7456
3296.685	0.022687	0.000779	0	0.023466	0.514695	0.004699	0	0.519394	0.488435	0.016775	0	0.505209	0	0	0	0.505209	0.55605	0.019097	0	0.575147	0	0	0	0.575147	1.26996	0.139039	0	1.408999	0.030955	0.000283	0	0.031238	1.06027	294.4916
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
923.0186	0.666438	0	0.233474	0.899912	0.164166	0	0.00892	0.173086	4.083748	0	1.679451	5.7632	3.348114	5.814384	6.266282	21.19198	5.058454	0	1.827787	6.886241	3.348114	5.814384	6.266282	22.31502	48.47828	0	12.5156	60.99388	0.008479	0	0.000646	0.009125	0.041124	97.33116
62886.11	0.329849	0	1.165198	1.495046	0.740717	0	0.718654	1.459372	1.142282	0	5.077275	6.219557	7.15715	1.395652	5.1867	19.95906	1.666815	0	5.558977	7.225792	7.15715	1.395652	5.1867	20.96529	115.9849	0	53.17059	169.1555	0.603258	0	0.018435	0.621693	7.285842	6631.262
724.1288	0.000697	0	0	0.000697	0.114087	0	0	0.114087	0.015003	0	0	0.015003	0	0	0	0.015003	0.01708	0	0	0.01708	0	0	0	0.01708	0.405603	0	0	0.405603	0.006861	0	0	0.006861	0.00641	64.68614
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600.7639	0.001817	0	0.019556	0.021373	0.002189	0	0.009359	0.011549	0.005953	0	0.082688	0.088641	0.074095	0.016904	0.029403	0.209043	0.008687	0	0.090533	0.09922	0.074095	0.016904	0.029403	0.219622	0.904154	0	0.634853	1.539007	0.005538	0	0.000401	0.005939	0.081762	63.3498
1058.994	0.002263	0	0.000188	0.002452	0.007578	0	0.000304	0.007882	0.006706	0	0.000685	0.007391	0.155692	0.028127	0.000839	0.192049	0.009786	0	0.00075	0.010535	0.155692	0.028127	0.000839	0.195194	0.111441	0	0.014416	0.125858	0.010468	0	1.66E-06	0.010469	0.025718	111.6696
343.3605	0.001138	0	0	0.001138	0.054097	0	0	0.054097	0.024492	0	0	0.024492	0	0	0	0.024492	0.027882	0	0	0.027882	0	0	0	0.027882	0.081654	0	0	0.081654	0.003254	0	0	0.003254	0.06256	30.67226
2581.854	0.005741	0.009194	0.026572	0.041507	0.01427	0.000211	0.019781	0.034263	0.023257	0.034831	0.132509	0.190597	0.08271	0.013502	0.150978	0.437787	0.033937	0.050825	0.145081	0.229843	0.08271	0.013502	0.150978	0.477032	0.441193	0.506474	2.497793	3.44546	0.025093	0.000165	0.000266	0.025524	0.075096	272.2533
12399.43	0.003859	0.002393	0	0.006252	1.863545	0.08999	0	1.953536	0.083081	0.051513	0	0.134594	0	0	0	0.134594	0.094581	0.058643	0	0.153225	0	0	0	0.153225	0.534099	2.140194	0	2.674292	0.112006	0.005409	0	0.117415	2.529912	1107.636
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
181.3094	0.118805	0.071177	0	0.189982	0.031914	0.005047	0	0.036961	0.001697	0.001017	0	0.002714	0	0	0	0.002714	0.121249	0.072641	0	0.193891	0	0	0	0.193891	0.440318	0.196379	0	0.636697	0	0	0	0	0.190022	20.9566
436.7383	0.002002	0.001591	0.005614	0.009208	0.003717	3.47E-05	0.004283	0.008035	0.009506	0.006344	0.030775	0.046626	0.035095	0.006223	0.038177	0.126121	0.013871	0.009258	0.033695	0.056824	0.035095	0.006223	0.038177	0.136319	0.216064	0.049065	0.619155	0.884284	0.004238	3.01E-05	4.98E-05	0.004318	0.012405	46.05351
1073.696	0.001384	0.000521	0	0.001905	0.164565	0.004597	0	0.169161	0.029791	0.011222	0	0.041013	0	0	0	0.041013	0.033915	0.012775	0	0.04669	0	0	0	0.04669	0.11123	0.178308	0	0.289539	0.009891	0.000276	0	0.010167	0.182822	95.91281
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48.96068	0.03807	0.004116	0	0.042186	0.009724	0.000257	0	0.009981	0.000544	5.88E-05	0	0.000603	0	0	0	0.000603	0.038853	0.004201	0	0.043054	0	0	0	0.043054	0.151977	0.009833	0	0.161809	0	0	0	0	0.060797	5.659108
288.7496	0.000793	0.016104	0.001749	0.018646	0.005104	0.000485	0.002046	0.007635	0.003355	0.06845	0.009549	0.081354	0.029255	0.004583	0.019628	0.134821	0.004895	0.099883	0.010455	0.115233	0.029255	0.004583	0.019628	0.1687	0.068827	0.529005	0.202481	0.800313	0.002683	0.000159	1.33E-05	0.002855	0.015022	30.44829
386.0291	0.000413	0.000123	0	0.000536	0.055857	0.004962	0	0.060819	0.008883	0.002654	0	0.011537	0	0	0	0.011537	0.010113	0.003021	0	0.013134	0	0	0	0.013134	0.034153	0.099007	0	0.13316	0.003357	0.000298	0	0.003655	0.064996	34.48383
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
205.4695	0.446529	0.080095	0	0.526625	0.036808	0.005079	0	0.041886	0.00638	0.001144	0	0.007524	0	0	0	0.007524	0.455716	0.081743	0	0.537459	0	0	0	0.537459	1.410657	0.166542	0	1.577199	0	0	0	0	0.130044	23.74914
173.8189	0.000299	0	0.000445	0.000744	0.001345	0	0.000503	0.001849	0.00088	0	0.001725	0.002605	0.000888	0.000235	0.00091	0.004638	0.001284	0	0.001889	0.003172	0.000888	0.000235	0.00091	0.005206	0.10394	0	0.057933	0.161874	0.001714	0	4.12E-06	0.001718	0.008833	18.32899
118.1374	0.000322	0	0	0.000322	0.018613	0	0	0.018613	0.006924	0	0	0.006924	0	0	0	0.006924	0.007882	0	0	0.007882	0	0	0	0.007882	0.008253	0	0	0.008253	0.001119	0	0	0.001119	0.023133	10.55317
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592.7922	1.331452	0	0	1.331452	0.120845	0	0	0.120845	0.020074	0	0	0.020074	0	0	0	0.020074	1.35999	0	0	1.35999	0	0	0	1.35999	15.41637	0	0	15.41637	0	0	0	0	0.315109	68.51774
9.44842	0.000447	0	1.29E-07	0.000448	0.000586	0	1.49E-06	0.000588	0.002037	0	6.77E-07	0.002038	8.86E-05	1.45E-05	0.000164	0.002305	0.002973	0	7.41E-07	0.002973	8.86E-05	1.45E-05	0.000164	0.00324	0.155077	0	0.004141	0.159218	9.3E-05	0	4.02E-07	9.34E-05	0.00024	0.996324
82845.55	0.03137	0.127269	0	0.158639	12.22055	0.831796	0	13.05235	0.675389	2.740076	0	3.415465	0	0	0	3.415465	0.768879	3.119368	0	3.888246	0	0	0	3.888246	2.605882	40.44369	0	43.04957	0.734504	0.049994	0	0.784498	13.13687	7400.56
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1813.928	1.221628	0.457364	0	1.678992	0.328779	0.041002	0	0.369781	0.025486	0.006842	0	0.032328	0	0	0	0.032328	1.255911	0.467123	0	1.723034	0	0	0	1.723034	9.26953	1.636904	0	10.90643	0	0	0	0	1.151904	209.6624
129733.6	0.627246	0	2.324196	2.951442	1.796106	0	1.67041	3.466516	1.917566	0	9.280551	11.19812	15.27617	3.049292	11.1961	40.71967	2.798108	0	10.16104	12.95914	15.27617	3.049292	11.1961	42.4807	276.093	0	113.3815	389.4745	1.247501	0	0.035048	1.282549	22.58035	13680.25
73.6477	0.000148	0	0	0.000148	0.011603	0	0	0.011603	0.003195	0	0	0.003195	0	0	0	0.003195	0.003637	0	0	0.003637	0	0	0	0.003637	0.077318	0	0	0.077318	0.000698	0	0	0.000698	0.001168	6.57892
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3216.592	0.009981	0	0.104877	0.114858	0.012092	0	0.050284	0.062376	0.032573	0	0.442419	0.474992	0.520247	0.107962	0.219115	1.322315	0.04753	0	0.484393	0.531923	0.520247	0.107962	0.219115	1.379247	4.949024	0	3.3974	8.346424	0.030329	0	0.00147	0.031799	0.446808	339.1856
11212.88	0.071867	0	0.2311	0.302968	0.16314	0	0.144612	0.307752	0.256472	0	0.998043	1.254516	2.207324	0.416706	1.548529	5.427075	0.374244	0	1.092732	1.466976	2.207324	0.416706	1.548529	5.639535	25.20358	0	10.72628	35.92986	0.107574	0	0.003277	0.110851	1.603445	1182.384
0.144606	3.06E-07	0	0	3.06E-07	2.28E-05	0	0	2.28E-05	6.59E-06	0	0	6.59E-06	0	0	0	6.59E-06	7.5E-06	0	0	7.5E-06	0	0	0	7.5E-06	6.86E-05	0	0	6.86E-05	1.37E-06	0	0	1.37E-06	1.28E-06	0.012918
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94.6037	0.000294	0	0.003001	0.003295	0.000355	0	0.001445	0.0018	0.000957	0	0.012615	0.013572	0.007781	0.002098	0.002577	0.026029	0.001397	0	0.013811	0.015208	0.007781	0.002098	0.002577	0.027665	0.145006	0	0.096814	0.24182	0.000888	0	4.74E-05	0.000935	0.013081	9.975842
90280.61	0.494715	0	1.729787	2.224502	1.166254	0	1.163531	2.329785	1.597758	0	7.08323	8.680987	9.662552	1.874636	7.092216	27.31039	2.331444	0	7.755245	10.08669	9.662552	1.874636	7.092216	28.71609	189.2743	0	83.64761	272.9219	0.867086	0	0.025429	0.892516	12.94321	9519.977
307.8522	0.000824	0	0	0.000824	0.048502	0	0	0.048502	0.017751	0	0	0.017751	0	0	0	0.017751	0.020208	0	0	0.020208	0	0	0	0.020208	0.185777	0	0	0.185777	0.002917	0	0	0.002917	0.003663	27.50032
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993.0854	0.00305	0	0.032432	0.035482	0.003677	0	0.015537	0.019214	0.009977	0	0.136986	0.146963	0.110358	0.026166	0.040874	0.324361	0.014558	0	0.149982	0.164541	0.110358	0.026166	0.040874	0.341938	1.514048	0	1.05177	2.565818	0.009274	0	0.000543	0.009818	0.136822	104.7196
10129.48	0.018272	0.039609	0.148518	0.206398	0.040542	0.001129	0.268166	0.309837	0.067377	0.137036	0.680492	0.884905	1.005995	0.176366	1.328505	3.395771	0.098316	0.199963	0.745053	1.043332	1.005995	0.176366	1.328505	3.554198	8.853929	1.661025	20.75627	31.27123	0.098096	0.000477	0.001566	0.10014	0.689104	1068.141
5899.206	0.042345	0.001619	0	0.043963	0.923411	0.006012	0	0.929422	0.911659	0.034845	0	0.946505	0	0	0	0.946505	1.037863	0.039669	0	1.077533	0	0	0	1.077533	2.356557	0.288817	0	2.645374	0.055536	0.000362	0	0.055898	2.248973	526.9737
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1414.183	0.001867	0.004803	0.017369	0.024038	0.005708	0.000135	0.03261	0.038454	0.006531	0.016548	0.07827	0.101349	0.141636	0.023842	0.18466	0.451488	0.009531	0.024146	0.085695	0.119373	0.141636	0.023842	0.18466	0.469511	1.09641	0.215534	2.703424	4.015368	0.01371	7.18E-05	0.000199	0.013981	0.086369	149.1238
3184.875	0.021566	0.000762	0	0.022328	0.497203	0.004575	0	0.501778	0.464307	0.016402	0	0.480709	0	0	0	0.480709	0.528583	0.018673	0	0.547256	0	0	0	0.547256	1.205768	0.13595	0	1.341718	0.029903	0.000275	0	0.030178	1.033063	284.5036
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922.7587	0.662015	0	0.232045	0.894061	0.163679	0	0.00877	0.172449	4.043566	0	1.666078	5.709644	3.341618	5.845299	6.299677	21.19624	5.015174	0	1.813356	6.82853	3.341618	5.845299	6.299677	22.31512	48.08814	0	12.57459	60.66273	0.008479	0	0.000643	0.009122	0.041202	97.30375
62567.18	0.315889	0	1.131497	1.447386	0.724498	0	0.718396	1.442895	1.070565	0	4.877344	5.947909	7.017247	1.33344	5.066247	19.36484	1.562165	0	5.340078	6.902243	7.017247	1.33344	5.066247	20.31918	114.2	0	51.95799	166.158	0.600211	0	0.018329	0.61854	7.318377	6597.631
708.2777	0.000655	0	0	0.000655	0.111589	0	0	0.111589	0.014093	0	0	0.014093	0	0	0	0.014093	0.016043	0	0	0.016043	0	0	0	0.016043	0.391136	0	0	0.391136	0.006711	0	0	0.006711	0.006329	63.27017
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

614.6927	0.001855	0	0.020216	0.022072	0.002233	0	0.009658	0.011891	0.006086	0	0.085633	0.091719	0.079271	0.017682	0.031277	0.21995	0.008881	0	0.093757	0.102638	0.079271	0.017682	0.031277	0.230869	0.924441	0	0.65747	1.581911	0.005662	0	0.000414	0.006077	0.083608	64.81858
1046.554	0.002149	0	0.000184	0.002333	0.007327	0	0.000294	0.007621	0.006226	0	0.000666	0.006892	0.144015	0.025366	0.000774	0.177047	0.009085	0	0.000729	0.009814	0.144015	0.025366	0.000774	0.17997	0.102657	0	0.014004	0.116661	0.010345	0	1.62E-06	0.010346	0.025418	110.3578
340.4385	0.001095	0	0	0.001095	0.053636	0	0	0.053636	0.02358	0	0	0.02358	0	0	0	0.02358	0.026844	0	0	0.026844	0	0	0	0.026844	0.077758	0	0	0.077758	0.003226	0	0	0.003226	0.063015	30.41124
2450.78	0.005222	0.008835	0.025411	0.039467	0.013182	0.0002	0.01897	0.032352	0.020868	0.033485	0.126334	0.180687	0.080036	0.012584	0.146551	0.419858	0.030451	0.048861	0.138319	0.217631	0.080036	0.012584	0.146551	0.456802	0.393464	0.486892	2.361447	3.241804	0.023818	0.000158	0.000253	0.024228	0.071691	258.4316
12155.32	0.003675	0.00234	0	0.006016	1.827486	0.087591	0	1.915076	0.079125	0.050388	0	0.129513	0	0	0	0.129513	0.090078	0.057363	0	0.147441	0	0	0	0.147441	0.517095	2.100051	0	2.617146	0.109839	0.005265	0	0.115104	2.496588	1085.83
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
178.6367	0.117422	0.069839	0	0.187261	0.031434	0.004983	0	0.036416	0.001678	0.000998	0	0.002676	0	0	0	0.002676	0.119838	0.071276	0	0.191113	0	0	0	0.191113	0.433614	0.195568	0	0.629181	0	0	0	0.187494	20.64768	
412.2922	0.001866	0.001534	0.005385	0.008784	0.003445	3.33E-05	0.004009	0.007487	0.008838	0.006133	0.029517	0.044488	0.034052	0.005891	0.036804	0.121236	0.012896	0.00895	0.032317	0.054163	0.034052	0.005891	0.036804	0.130911	0.200092	0.047424	0.58925	0.836767	0.003999	2.9E-05	4.79E-05	0.004076	0.011768	43.4757
1072.977	0.0013	0.00052	0	0.001819	0.164502	0.004546	0	0.169048	0.027981	0.011192	0	0.039173	0	0	0	0.039173	0.031854	0.012741	0	0.044596	0	0	0	0.044596	0.106301	0.178086	0	0.284387	0.009887	0.000273	0	0.01016	0.183806	95.8486
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49.12866	0.03839	0.004137	0	0.042527	0.009756	0.000259	0	0.010015	0.000549	5.91E-05	0	0.000608	0	0	0	0.000608	0.03918	0.004222	0	0.043402	0	0	0	0.043402	0.152834	0.01005	0	0.162884	0	0	0	0	0.061183	5.678524	
275.1412	0.000758	0.015454	0.001683	0.017895	0.004851	0.000461	0.001977	0.007289	0.00321	0.065703	0.009188	0.0781	0.028055	0.004321	0.018923	0.129399	0.004684	0.095873	0.01006	0.110617	0.028055	0.004321	0.018923	0.161916	0.06598	0.507769	0.194567	0.768316	0.002556	0.000151	1.27E-05	0.00272	0.0144	29.0133
370.0172	0.000342	0.000119	0	0.000462	0.053546	0.00475	0	0.058296	0.007373	0.00257	0	0.009943	0	0	0	0.009943	0.008393	0.002926	0	0.011319	0	0	0	0.011319	0.030083	0.098233	0	0.128316	0.003218	0.000286	0	0.003504	0.063929	33.05349
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
200.0468	0.431226	0.078454	0	0.50968	0.035766	0.005015	0	0.040781	0.006161	0.001121	0	0.007282	0	0	0	0.007282	0.440098	0.080068	0	0.520166	0	0	0	0.520166	1.353901	0.166735	0	1.520636	0	0	0	0	0.127046	23.12236	
147.07	0.000226	0	0.00034	0.000566	0.000937	0	0.000447	0.001384	0.000633	0	0.001267	0.0019	0.00084	0.000219	0.000863	0.003823	0.000924	0	0.001387	0.002311	0.00084	0.000219	0.000863	0.004234	0.099687	0	0.052378	0.152065	0.001451	0	3.43E-06	0.001454	0.00839	15.50835
91.51364	0.000255	0	0	0.000255	0.014418	0	0	0.014418	0.005482	0	0	0.005482	0	0	0	0.005482	0.00624	0	0	0.00624	0	0	0	0.00624	0.00673	0	0	0.00673	0.000867	0	0	0.000867	0.017652	8.174877	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
476.5721	1.059108	0	0	1.059108	0.097152	0	0	0.097152	0.016174	0	0	0.016174	0	0	0	0.016174	1.082035	0	0	1.082035	0	0	0	1.082035	12.27945	0	0	12.27945	0	0	0	0.251111	55.08446	
9.022053	0.00043	0	1.11E-07	0.00043	0.000554	0	3.09E-06	0.000557	0.001957	0	5.76E-07	0.001958	8.37E-05	1.31E-05	0.000155	0.00221	0.002856	0	6.31E-07	0.002857	8.37E-05	1.31E-05	0.000155	0.003109	0.149125	0	0.003984	0.153109	8.88E-05	0	3.84E-07	8.92E-05	0.000231	0.951364
84187.54	0.031822	0.130086	0	0.161908	12.41714	0.846637	0	13.26378	0.685125	2.80071	0	3.485835	0	0	0	3.485835	0.779963	3.188395	0	3.968357	0	0	0	3.968357	2.629184	41.34533	0	43.97451	0.746319	0.050886	0	0.797206	13.4205	7520.44	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1791.707	1.176406	0.451967	0	1.628374	0.324533	0.040719	0	0.365251	0.024142	0.006738	0	0.030881	0	0	0	0.030881	1.208965	0.461586	0	1.67055	0	0	0	1.67055	9.013844	1.635229	0	10.64907	0	0	0	0	1.145487	207.094	
129374.8	0.612944	0	2.263828	2.876773	1.785178	0	1.664166	3.449344	1.849437	0	8.94738	10.79682	14.65627	2.881431	10.70349	39.03801	2.698694	0	9.796255	12.49495	14.65627	2.881431	10.70349	40.73614	274.0179	0	111.0718	385.0896	1.2441	0	0.034902	1.279002	22.65565	13642.41
70.10114	0.000132	0	0	0.000132	0.011044	0	0	0.011044	0.002846	0	0	0.002846	0	0	0	0.002846	0.00324	0	0	0.00324	0	0	0	0.00324	0.071194	0	0	0.071194	0.000664	0	0	0.000664	0.001125	6.262107	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3214.017	0.009961	0	0.105551	0.115513	0.01206	0	0.050542	0.062602	0.032535	0	0.445861	0.478396	0.526834	0.107311	0.219363	1.331903	0.047474	0	0.488162	0.535636	0.526834	0.107311	0.219363	1.389144	4.944051	0	3.423884	8.367935	0.030299	0	0.001475	0.031774	0.446718	338.914
11063.67	0.064801	0	0.217373	0.282175	0.155575	0	0.141877	0.297452	0.22361	0	0.921613	1.145223	2.063671	0.379279	1.439727	5.027901	0.326292	0	1.00905	1.335342	2.063671	0.379279	1.439727	5.218019	24.06176	0	10.13998	34.20174	0.106157	0	0.003219	0.109376	1.599487	1166.65
0.146718	3.09E-07	0	0	3.09E-07	2.31E-05	0	0	2.31E-05	6.66E-06	0	0	6.66E-06	0	0	0	6.66E-06	7.58E-06	0	0	7.58E-06	0	0	0	7.58E-06	6.96E-05	0	0	6.96E-05	1.39E-06	0	0	1.39E-06	1.3E-06	0.013106	
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98.15113	0.000304	0	0.003149	0.003453	0.000367	0	0.001514	0.001881	0.000993	0	0.013261	0.014254	0.008829	0.002282	0.00298	0.028345	0.001448	0	0.014519	0.015968	0.008829	0.002282	0.00298	0.030059	0.15033	0	0.101778	0.252108	0.000921	0	4.98E-05	0.00097	0.013564	10.34991
90100.26	0.484249	0	1.702126	2.186375	1.15392	0	1.167402	2.321322	1.544515	0	6.923592	8.468106	9.496279	1.81325	6.951962	26.7296	2.253752	0	7.580461	9.834214	9.496279	1.81325	6.951962	28.0957	188.3023	0	82.88519	271.1874	0.865338	0	0.025395	0.890733	13.00281	9500.96
308.011	0.000828	0	0	0.000828	0.048527	0	0	0.048527	0.017833	0	0	0.017833	0	0	0	0.017833	0.020301	0	0	0.020301	0	0	0	0.020301	0.186816	0	0	0.186816	0.002919	0	0	0.002919	0.003682	27.5145	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1011.328	0.0031	0	0.033331	0.036432	0.003735	0	0.015943	0.019678	0.010153	0	0.141005	0.151159	0.120099	0.027494	0.044747	0.343498	0.014816	0	0.154383	0.169199	0.120099	0.027494	0.044747	0.361539	1.541044	0	1.082654	2.623698	0.00944	0	0.000558	0.009998	0.139287	106.6433
9765.065	0.014953	0.038077	0.141756	0.194786	0.034915	0.001089	0.258782	0.294787	0.052257	0.131335	0.645903	0.829495	0.964018	0.160318	1.253166	3.206998	0.076253	0.191644	0.707183	0.97508	0.964018	0.160318	1.253166	3.352583	8.367956	1.615599	20.12701	30.11056	0.094561	0.000463	0.001514	0.096538	0.667705	1029.714	
5687.152	0.039401	0.001572	0	0.040973	0.890209	0.005804	0	0.896013	0.848284	0.033835	0	0.882119	0	0	0	0.882119	0.965715	0.038519	0	1.004233	0	0	0	1.004233	2.172338	0.280441	0	2.452779	0.05354	0.000349	0	0.053889	2.192123	508.031	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1357.179	0.001661	0.004558	0.016371	0.02259	0.005157	0.000129	0.030986	0.036272	0.005673	0.015637	0.073331	0.094642	0.135485	0.022083	0.176557	0.428768	0.008279	0.022818	0.080289	0.111385	0.135485	0.022083	0.176557	0.445511	1.056352	0.208733	2.629864	3.894949	0.013156	6.92E-05	0.000192	0.013417	0.08344	143.1128	
3084.877	0.020632	0.000746	0	0.021378	0.481559	0.004464	0	0.486024	0.444199	0.016065	0	0.460264	0	0	0	0.460264	0.505691	0.018289	0	0.52398	0	0	0	0.52398	1.150637	0.133154	0	1.283791	0.028962	0.000268	0	0.029231	1.008011	275.5708	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
922.5695	0.658123	0	0.23071	0.888832	0.163231	0	0.00864	0.171871	4.008617	0	1.653634	5.662251	3.322956	5.875687	6.327867	21.18876	4.977056	0	1.799897	6.776952	3.322956	5.875687	6.327867	22.30346	47.74526	0	12.61793	60.36319	0.00848	0	0.000641	0.009121	0.04127	97.2838
62301.55	0.304569	0	1.10353	1.408099	0.710897	0	0.718741	1.429637	1.013328	0	4.713655	5.726983	6.80568	1.267185	4.887102	18.68695	1.478646	0	5.160859	6.639505	6.80568	1.267185	4.887102	19.59947	112.9171	0	51.05865	163.9758	0.597668	0	0.018247	0.615914	7.34638	6569.621
694.8813	0.00062	0	0	0.00062	0.109479	0	0	0.109479	0.013351	0	0	0.013351	0	0	0	0.013351	0.015199	0	0	0.015199	0	0	0	0.015199	0.379137	0	0	0.379137	0.006584	0	0	0.006584	0.006261	62.07347	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
627.0126	0.001889	0	0.02082	0.022709	0.002271	0	0.00993	0.012201	0.006203	0	0.088338	0.094541	0.084316	0.018411	0.033033	0.2303	0.009052	0	0.096719	0.105771	0.084316	0.018411	0.033033	0.24153	0.942318	0	0.678253	1.620571	0.005772	0	0.000426	0.006199	0.085236	66.11769
1035.152	0.002069	0	0.00018	0.002249	0.007106	0	0.000285	0.007391	0.005911	0	0.000648	0.006559	0.133885	0.022936	0.000719	0.1641	0.008626	0	0.000709	0.009335	0.133885	0.022936	0.000719	0.166876	0.09539	0	0.013638	0.109028	0.010232	0	1.59E-06	0.010234	0.025144	109.1555
337.822	0.001057	0	0	0.001057	0.053224	0	0	0.053224	0.022749	0	0	0.022749	0	0	0	0.022749	0.025898	0	0	0.025898	0	0	0	0.025898	0.074155	0	0	0.074155	0.003201	0	0	0.003201	0.063457	30.17751	
2333.288	0.004808	0.008502	0.024333	0.037643	0.012251	0.00019	0.018183	0.030624	0.018969	0.03224	0.120704	0.171913	0.076175	0.01171	0.140507	0.400305	0.02768	0.047045	0.132155	0.20688	0.076175	0.01171	0.140507	0.435272	0.355413	0.468797	2.243943	3.068153	0.022674	0.000151	0.000242	0.023067	0.068616	246.0423	
11938.82	0.003504	0.002292	0	0.005796	1.795604	0.085362	0	1.880965	0.075444	0.049344	0	0.124789	0	0	0	0.124789	0.085887	0.056175	0	0.142062	0	0	0	0.142062	0.501603	2.062828	0	2.564431	0.107923	0.005131	0	0.113053	2.467861	1066.49	
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175.9956	0.116042	0.068487	0	0.184529	0.030965	0.004913	0	0.035878	0.001658	0.000979	0	0.002637	0	0	0	0.002637	0.11843	0.069896	0	0.188326	0	0	0	0.188326	0.427108	0.194358	0	0.621466	0	0	0	0	0.185044	20.34241	
390.9088	0.001745	0.001481	0.005158	0.008384	0.003209	3.19E-05	0.003821	0.007062	0.008254	0.005936	0.028263	0.042452	0.032729	0.005538	0.035097	0.115817	0.012044	0.008662	0.030944	0.05165	0.032729	0.005538	0.035097	0.125014	0.187155	0.04589	0.562157	0.795203	0.00379	2.8E-05	4.6E-05	0.003865	0.011209	41.22084	
1072.714	0.001206	0.000519	0	0.001726	0.1645	0.004507	0	0.169007	0.025974	0.011182	0	0.037156	0	0	0	0.037156	0.029569	0.01273	0	0.042299	0	0	0	0.042299	0.100968	0.178158	0	0.279126	0.009887	0.000271	0	0.010158	0.184812	95.82516	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49.27343	0.038656	0.004164	0	0.04282	0.009783	0.000262	0	0.010045	0.000552	5.95E-05	0	0.000612	0	0	0	0.000612	0.039452	0.00425	0	0.043701	0	0	0	0.043701	0.153599	0.010246	0	0.163844	0	0	0	0	0.061519	5.695256	
259.3098	0.000717	0.014688	0.0016	0.017004	0.004513	0.000434	0.001869	0.006816	0.003036	0.062452	0.008737	0.074224	0.026347	0.003986	0.017878	0.122435	0.00443	0.09113	0.009566	0.105125	0.026347	0.003986	0.017878	0.153336	0.062312	0.482649	0.185135	0.730095	0.002409	0.000143	1.21E-05	0.002564	0.013671	27.3439	
354.5984	0.000278	0.000115	0	0.000393	0.051323	0.004545	0	0.055867	0.005982	0.002482	0	0.008464	0	0	0	0.008464	0.00681	0.002825	0	0.009635	0	0	0	0.009635	0.026351	0.09713	0	0.123481	0.003085	0.000273	0	0.003358	0.062736	31.67614	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
193.5847	0.413565	0.076233	0	0.489797	0.034544	0.00492	0	0.039464	0.005909	0.001089	0	0.006998	0	0	0	0.006998	0.422073	0.077801	0	0.499874	0	0	0	0.499874	1.288987	0.166185	0	1.455172	0	0	0	0	0.123491	22.37544	
125.8189	0.000167	0	0.000226	0.000393	0.000575	0	0.000386	0.000962	0.00043	0	0.000763	0.001193	0.000705	0.00019	0.000747	0.002835	0.000627	0	0.000835	0.001462	0.000705	0.00019	0.000747	0.003105	0.095968	0	0.046468	0.142436	0.001241	0	2.71E-06	0.001244	0.008057	13.26745	
72.38933	0.000203	0	0	0.000203	0.011405	0	0	0.011405	0.004381	0	0	0.004381	0	0	0	0.004381	0.004987	0	0	0.004987	0	0	0	0.004987	0.005506	0	0	0.005506	0.000686	0	0	0.000686	0.014137	6.46651	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
394.5598	0.873002	0	0	0.873002	0.080434	0	0	0.080434	0.013513	0	0	0.013513	0	0	0	0.013513	0.892097	0	0	0.892097	0	0	0	0.892097	10.1724	0	0	10.1724	0	0	0	0	0.206407	45.6051	
8.627896	0.000412	0	1.02E-07	0.000412	0.000524	0	5.49E-06	0.000529	0.001874	0	5.32E-07	0.001875	8.06E-05	1.22E-05	0.000151	0.002119	0.002735	0	5.82E-07	0.002735	8.06E-05	1.22E-05	0.000151	0.002979	0.14324	0	0.003887	0.147127	8.49E-05	0	3.67E-07	8.53E-05	0.000222	0.909801	
85691.77	0.032335	0.133136	0	0.16547	12.63734	0.86343	0	13.50077	0.696158	2.866373	0	3.562531	0	0	0	3.562531	0.792523	3.263147	0	4.05567	0	0	0	4.05567	2.65857	42.32041	0	44.97898	0.759554	0.051896	0	0.81145	13.72127	7654.812	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1770.418	1.138065	0.447461	0	1.585526	0.320461	0.04045	0	0.360911	0.022827	0.006644	0	0.029472	0	0	0	0.029472	1.16896	0.456953	0	1.625913	0	0	0	1.625913	8.78711	1.633599	0	10.42071	0	0	0	0	1.139162	204.6333	
129091.5	0.599864	0	2.210882	2.810746	1.775944	0	1.659557	3.435501	1.786984	0	8.642822	10.42981	14.26449	2.783904	10.46645	37.94464	2.607563	0	9.462802	12.07036	14.26449	2.783904	10.46645	39.5852	272.1032	0	109.2196	381.3228	1.241396	0	0.034805	1.276201	22.72331	13612.54
67.39928	0.000119	0	0	0.000119	0.010619	0	0	0.010619	0.002567	0	0	0.002567	0	0	0	0.002567	0.002923	0	0	0.002923	0	0	0	0.002923	0.066204	0	0	0.066204	0.000639	0	0	0.000639	0.001093	6.020751	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3208.862	0.00992	0	0.106148	0.116068	0.012019	0	0.05077	0.062789	0.032422	0	0.448908	0.48133	0.537158	0.10722	0.221775	1.347483	0.047311	0	0.491498	0.538808	0.537158	0.10722	0.221775	1.404961	4.932792	0	3.447328	8.38012	0.030243	0	0.00148	0.031723	0.44659	338.3704
10930.48	0.05851	0	0.204655	0.263165	0.148888	0	0.139337	0.288226	0.194199	0	0.849858	1.044057	1.947415	0.355168	1.373166	4.719805	0.283375	0	0.930488	1.213863	1.947415	0.355168	1.373166	4.889611	23.02012	0	9.632099	32.65221	0.104891	0	0.003168	0.108059	1.596125	1152.606
0.148535	3.11E-07	0	0	3.11E-07	2.34E-05	0	0	2.34E-05	6.69E-06	0	0	6.69E-06	0	0	0	6.69E-06	7.61E-06	0	0	7.61E-06	0	0	0	7.61E-06	7.02E-05	0	0	7.02E-05	1.41E-06	0	0	1.41E-06	1.32E-06	0.013269	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101.2867	0.000313	0	0.003288	0.003601	0.000377	0	0.001578	0.001955	0.001022	0	0.01387	0.014892	0.009996	0.002471	0.003448	0.030806	0.001491	0	0.015186	0.016677	0.009996	0.002471	0.003448	0.032592	0.15495	0	0.106455	0.261405	0.000949	0	5.2E-05	0.001001	0.014001	10.68056	
89940.19	0.474518	0	1.67801	2.152528	1.14289	0	1.171124	2.314014	1.495558	0	6.780921	8.276478	9.421685	1.777961	6.912882	26.38901	2.182314	0	7.424255	9.606569	9.421685	1.777961	6.912882	27.7191	187.2943	0	82.28229	269.5766	0.863772	0	0.025378	0.88915	13.05538	9484.08

308.1063	0.000828	0	0	0.000828	0.048542	0	0	0.048542	0.017824	0	0	0.017824	0	0	0	0.017824	0.020291	0	0	0.020291	0	0	0	0.020291	0.186888	0	0	0.186888	0.002919	0	0	0.002919	0.003698	27.52301
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1026.345	0.003137	0	0.034138	0.037275	0.003779	0	0.016307	0.020086	0.010284	0	0.144625	0.154909	0.131875	0.028961	0.049739	0.365484	0.015006	0	0.158346	0.173352	0.131875	0.028961	0.049739	0.383928	1.562473	0	1.110471	2.672944	0.009575	0	0.000571	0.010146	0.141415	108.2268
9439.551	0.014192	0.036664	0.13563	0.186487	0.032511	0.001052	0.249644	0.283206	0.049354	0.126174	0.615717	0.791246	0.937349	0.152906	1.234998	3.116499	0.072018	0.184113	0.674133	0.930264	0.937349	0.152906	1.234998	3.255517	8.148211	1.573411	19.68069	29.40232	0.091402	0.000449	0.001469	0.09332	0.648289	995.3888
5491.503	0.036897	0.001527	0	0.038424	0.859579	0.005609	0	0.865189	0.794377	0.032874	0	0.827251	0	0	0	0.827251	0.904345	0.037425	0	0.94177	0	0	0	0.94177	2.01197	0.272479	0	2.284449	0.051697	0.000337	0	0.052035	2.138165	490.5538
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1306.027	0.001554	0.004334	0.015474	0.021363	0.004778	0.000123	0.029489	0.03439	0.005269	0.014808	0.06895	0.089028	0.131008	0.020794	0.171769	0.412599	0.007689	0.021608	0.075492	0.104789	0.131008	0.020794	0.171769	0.42836	1.026625	0.202402	2.564543	3.793571	0.012659	6.68E-05	0.000185	0.012911	0.080772	137.7189
2993.234	0.019846	0.000731	0	0.020577	0.467226	0.004359	0	0.471585	0.42727	0.015741	0	0.443011	0	0	0	0.443011	0.486418	0.017921	0	0.504339	0	0	0	0.504339	1.101274	0.130473	0	1.231748	0.0281	0.000262	0	0.028362	0.984516	267.3844
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
921.9984	0.653685	0	0.229381	0.883066	0.162788	0	0.008508	0.171296	3.970511	0	1.641	5.611511	3.311614	5.904839	6.357565	21.18553	4.93461	0	1.786233	6.720842	3.311614	5.904839	6.357565	22.29486	47.39122	0	12.65958	60.0508	0.008477	0	0.000638	0.009115	0.04133	97.22358
62077.06	0.298814	0	1.083702	1.382517	0.701202	0	0.719445	1.420647	0.986202	0	4.602909	5.589111	6.67879	1.231439	4.812476	18.31182	1.439064	0	5.039606	6.478669	6.67879	1.231439	4.812476	19.20137	112.2817	0	50.57413	162.8559	0.595504	0	0.018191	0.613695	7.371422	6545.949
683.6679	0.000589	0	0	0.000589	0.107712	0	0	0.107712	0.012679	0	0	0.012679	0	0	0	0.012679	0.014435	0	0	0.014435	0	0	0	0.014435	0.367544	0	0	0.367544	0.006478	0	0	0.006478	0.006206	61.07178
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
637.4083	0.001914	0	0.021373	0.023286	0.002301	0	0.010178	0.012479	0.006293	0	0.090824	0.097117	0.089368	0.019114	0.034857	0.240456	0.009183	0	0.099441	0.108624	0.089368	0.019114	0.034857	0.251962	0.95687	0	0.697355	1.654225	0.005864	0	0.000438	0.006301	0.08667	67.21391
1025.739	0.002014	0	0.000177	0.002191	0.006943	0	0.000276	0.007219	0.005697	0	0.000634	0.006332	0.126271	0.021269	0.000685	0.154557	0.008314	0	0.000694	0.009008	0.126271	0.021269	0.000685	0.157233	0.090532	0	0.013388	0.103919	0.010139	0	1.57E-06	0.01014	0.024917	108.1629
335.2983	0.00102	0	0	0.00102	0.052826	0	0	0.052826	0.021966	0	0	0.021966	0	0	0	0.021966	0.025006	0	0	0.025006	0	0	0	0.025006	0.070732	0	0	0.070732	0.003177	0	0	0.003177	0.063865	29.95206
2227.544	0.004423	0.00819	0.023329	0.035941	0.011464	0.00018	0.017248	0.028892	0.017235	0.03106	0.115467	0.163762	0.073156	0.010958	0.135895	0.383771	0.02515	0.045323	0.126422	0.196894	0.073156	0.010958	0.135895	0.416903	0.322997	0.451647	2.137438	2.912082	0.021646	0.000144	0.000231	0.022022	0.065829	234.8917
11747.54	0.003362	0.00225	0	0.005612	1.767473	0.083357	0	1.85083	0.072378	0.048439	0	0.120817	0	0	0	0.120817	0.082397	0.055145	0	0.137541	0	0	0	0.137541	0.488103	2.029744	0	2.517846	0.106232	0.00501	0	0.111242	2.443007	1049.403
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
173.4098	0.114701	0.067115	0	0.181816	0.03051	0.004841	0	0.035351	0.001639	0.000959	0	0.002598	0	0	0	0.002598	0.117061	0.068495	0	0.185556	0	0	0	0.185556	0.420791	0.193008	0	0.613799	0	0	0	0	0.182645	20.04353
372.9718	0.001661	0.001435	0.004993	0.008089	0.003063	3.07E-05	0.003684	0.006778	0.007852	0.005765	0.027385	0.041002	0.031828	0.005346	0.034296	0.112472	0.011457	0.008413	0.029983	0.049853	0.031828	0.005346	0.034296	0.121323	0.177858	0.044567	0.541732	0.764157	0.003616	2.71E-05	4.45E-05	0.003687	0.010738	39.32941
1073.17	0.00112	0.000519	0	0.001639	0.164601	0.004478	0	0.169078	0.024114	0.011182	0	0.035296	0	0	0	0.035296	0.027452	0.01273	0	0.040182	0	0	0	0.040182	0.096155	0.178372	0	0.274527	0.009893	0.000269	0	0.010162	0.18581	95.86584
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49.37755	0.038855	0.004191	0	0.043047	0.009802	0.000264	0	0.010066	0.000555	5.99E-05	0	0.000615	0	0	0	0.000615	0.039655	0.004278	0	0.043932	0	0	0	0.043932	0.154173	0.010414	0	0.164587	0	0	0	0	0.061762	5.707292
240.3282	0.000665	0.013755	0.00149	0.01591	0.004066	0.000404	0.001692	0.006161	0.002815	0.058487	0.008136	0.069438	0.024288	0.003583	0.016605	0.113915	0.004108	0.085345	0.008908	0.09836	0.024288	0.003583	0.016605	0.142837	0.057813	0.452008	0.174108	0.683929	0.002232	0.000133	1.12E-05	0.002376	0.012793	25.34231
339.8384	0.00022	0.000111	0	0.000331	0.049199	0.004343	0	0.053542	0.004739	0.00239	0	0.007129	0	0	0	0.007129	0.005395	0.002721	0	0.008116	0	0	0	0.008116	0.022979	0.095611	0	0.11859	0.002957	0.000261	0	0.003218	0.061391	30.35763
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
186.3634	0.394391	0.073447	0	0.467838	0.033198	0.004793	0	0.037991	0.005635	0.001049	0	0.006684	0	0	0	0.006684	0.402505	0.074958	0	0.477463	0	0	0	0.477463	1.219036	0.164898	0	1.383935	0	0	0	0	0.119538	21.54077
127.8631	0.000164	0	0.000227	0.000391	0.000571	0	0.000387	0.000958	0.000423	0	0.00076	0.001183	0.000761	0.000198	0.000792	0.002933	0.000617	0	0.000832	0.001449	0.000761	0.000198	0.000792	0.003199	0.097345	0	0.046565	0.143909	0.001261	0	2.73E-06	0.001264	0.008223	13.483
59.29861	0.00017	0	0	0.00017	0.009343	0	0	0.009343	0.003651	0	0	0.003651	0	0	0	0.003651	0.004157	0	0	0.004157	0	0	0	0.004157	0.004743	0	0	0.004743	0.000562	0	0	0.000562	0.011598	5.297122
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341.2632	0.744756	0	0	0.744756	0.069569	0	0	0.069569	0.011722	0	0	0.011722	0	0	0	0.011722	0.761259	0	0	0.761259	0	0	0	0.761259	8.689269	0	0	8.689269	0	0	0	0	0.178512	39.44482
8.273082	0.000395	0	1.02E-07	0.000395	0.000488	0	9.47E-06	0.000497	0.001795	0	5.3E-07	0.001795	7.84E-05	1.14E-05	0.000148	0.002033	0.002619	0	5.81E-07	0.00262	7.84E-05	1.14E-05	0.000148	0.002858	0.137957	0	0.003774	0.141731	8.14E-05	0	3.51E-07	8.18E-05	0.000214	0.872386
87359.53	0.032909	0.136399	0	0.169308	12.88155	0.881981	0	13.76353	0.708518	2.936641	0	3.645159	0	0	0	3.645159	0.806594	3.343142	0	4.149736	0	0	0	4.149736	2.694238	43.36263	0	46.05687	0.774232	0.053011	0	0.827242	14.04033	7803.792
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1750.574	1.104882	0.444149	0	1.549032	0.316645	0.040221	0	0.356866	0.021535	0.006566	0	0.0281	0	0	0	0.0281	1.134162	0.453537	0	1.5877	0	0	0	1.5877	8.582279	1.633387	0	10.21567	0	0	0	0	1.133479	202.3397
128943.5	0.589888	0	2.165768	2.755656	1.768897	0	1.656075	3.424972	1.738299	0	8.380562	10.11886	13.95912	2.698348	10.30374	37.08007	2.536521	0	9.17566	11.71218	13.95912	2.698348	10.30374	38.67339	270.8274	0	107.6697	378.4971	1.239996	0	0.034742	1.274738	22.78584	13596.93
65.37401	0.00011	0	0	0.00011	0.0103	0	0	0.0103	0.002361	0	0	0.002361	0	0	0	0.002361	0.002688	0	0	0.002688	0	0	0	0.002688	0.062628	0	0	0.062628	0.000619	0	0	0.000619	0.001069	5.839834
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3207.474	0.009907	0	0.106681	0.116588	0.011998	0	0.050973	0.062971	0.032398	0	0.45164	0.484039	0.549694	0.107239	0.224042	1.365014	0.047276	0	0.494489	0.541765	0.549694	0.107239	0.224042	1.422741	4.929862	0	3.468352	8.398215	0.030225	0	0.001484	0.031709	0.446542	338.2241
10814.5	0.053531	0	0.193574	0.247105	0.143126	0	0.136994	0.28012	0.171456	0	0.788485	0.959941	1.841431	0.332228	1.315372	4.448972	0.250188	0	0.863292	1.11348	1.841431	0.332228	1.315372	4.602511	22.18244	0	9.2017	31.38414	0.103789	0	0.003123	0.106912	1.59286	1140.376
0.150188	3.13E-07	0	0	3.13E-07	2.37E-05	0	0	2.37E-05	6.74E-06	0	0	6.74E-06	0	0	0	6.74E-06	7.68E-06	0	0	7.68E-06	0	0	0	7.68E-06	7.11E-05	0	0	7.11E-05	1.42E-06	0	0	1.42E-06	1.34E-06	0.013416
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104.203	0.000321	0	0.003417	0.003738	0.000387	0	0.001637	0.002024	0.001051	0	0.014442	0.015492	0.011335	0.002666	0.003981	0.033474	0.001533	0	0.015812	0.017345	0.011335	0.002666	0.003981	0.035326	0.159302	0	0.110842	0.270143	0.000976	0	5.41E-05	0.00103	0.014397	10.98808
89818.52	0.464651	0	1.653924	2.118575	1.130497	0	1.173659	2.304157	1.445907	0	6.636664	8.082571	9.343383	1.740285	6.889322	26.05556	2.109864	0	7.266312	9.376176	9.343383	1.740285	6.889322	27.34917	186.2374	0	81.62808	267.8655	0.862587	0	0.02536	0.887947	13.09911	9471.25
308.3114	0.000831	0	0	0.000831	0.048575	0	0	0.048575	0.017885	0	0	0.017885	0	0	0	0.017885	0.020361	0	0	0.020361	0	0	0	0.020361	0.187673	0	0	0.187673	0.002921	0	0	0.002921	0.003712	27.54133
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1040.182	0.003174	0	0.034862	0.038037	0.003821	0	0.016631	0.020452	0.010416	0	0.147885	0.158302	0.143703	0.030318	0.05438	0.386703	0.0152	0	0.161916	0.177115	0.143703	0.030318	0.05438	0.405516	1.582817	0	1.135532	2.718349	0.0097	0	0.000583	0.010283	0.143278	109.6859
9137.573	0.013483	0.035313	0.129497	0.178293	0.030229	0.001015	0.240974	0.272219	0.046616	0.121193	0.585126	0.752935	0.913646	0.145481	1.220675	3.032736	0.068023	0.176844	0.640639	0.885506	0.913646	0.145481	1.220675	3.165307	7.938987	1.531646	19.23635	28.76098	0.088474	0.000436	0.001424	0.090334	0.630231	963.5457
5309.368	0.034555	0.001483	0	0.036038	0.831075	0.005418	0	0.836493	0.743948	0.031924	0	0.775871	0	0	0	0.775871	0.846935	0.036343	0	0.883278	0	0	0	0.883278	1.862722	0.264599	0	2.127321	0.049983	0.000326	0	0.050309	2.086832	474.2838
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1260.053	0.001462	0.00413	0.014645	0.020236	0.004451	0.000118	0.028137	0.032706	0.004918	0.01405	0.064886	0.083854	0.127518	0.019624	0.168311	0.399307	0.007176	0.020501	0.071042	0.09872	0.127518	0.019624	0.168311	0.414173	0.998755	0.196459	2.501786	3.697	0.012213	6.46E-05	0.000179	0.012457	0.078343	132.871
2910.412	0.019162	0.000717	0	0.019879	0.454274	0.004262	0	0.458537	0.412544	0.015441	0	0.427985	0	0	0	0.427985	0.469654	0.017578	0	0.487233	0	0	0	0.487233	1.057386	0.127981	0	1.185367	0.027321	0.000256	0	0.027578	0.962543	259.986
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921.9518	0.650548	0	0.228319	0.878867	0.162445	0	0.008392	0.170836	3.942022	0	1.630886	5.572908	3.311316	5.93686	6.393584	21.21467	4.903661	0	1.775304	6.678965	3.311316	5.93686	6.393584	22.32072	47.11571	0	12.70937	59.82508	0.008478	0	0.000637	0.009114	0.041393	97.21867
61912.17	0.293547	0	1.065574	1.359121	0.691832	0	0.720081	1.411914	0.960801	0	4.500162	5.460963	6.575445	1.198145	4.759454	17.99401	1.401998	0	4.927111	6.329109	6.575445	1.198145	4.759454	18.86215	111.7336	0	50.11433	161.8479	0.593917	0	0.018148	0.612065	7.393012	6528.561
674.8521	0.000566	0	0	0.000566	0.106323	0	0	0.106323	0.012178	0	0	0.012178	0	0	0	0.012178	0.013864	0	0	0.013864	0	0	0	0.013864	0.359535	0	0	0.359535	0.006395	0	0	0.006395	0.006164	60.28427
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
647.0414	0.001939	0	0.021874	0.023814	0.002329	0	0.010402	0.012732	0.006384	0	0.093093	0.099477	0.096254	0.019915	0.037406	0.253052	0.009315	0	0.101926	0.11124	0.096254	0.019915	0.037406	0.264815	0.970737	0	0.714791	1.685528	0.005949	0	0.000448	0.006397	0.087936	68.22971
1017.145	0.001954	0	0.000173	0.002128	0.007463	0	0.000259	0.007722	0.005462	0	0.00062	0.006082	0.119515	0.019705	0.000655	0.145958	0.00797	0	0.000679	0.00865	0.119515	0.019705	0.000655	0.148525	0.085165	0	0.013135	0.0983	0.010054	0	1.55E-06	0.010056	0.024708	107.2567
332.8816	0.000986	0	0	0.000986	0.052446	0	0	0.052446	0.021238	0	0	0.021238	0	0	0	0.021238	0.024178	0	0	0.024178	0	0	0	0.024178	0.067516	0	0	0.067516	0.003154	0	0	0.003154	0.064232	29.73618
2133.621	0.004108	0.007899	0.022391	0.034397	0.010785	0.000172	0.01639	0.027346	0.01582	0.029959	0.110624	0.156402	0.071017	0.010304	0.132612	0.370335	0.023084	0.043716	0.121119	0.187919	0.071017	0.010304	0.132612	0.401852	0.296719	0.435659	2.044794	2.777172	0.020733	0.000139	0.000222	0.021093	0.063334	224.9877
11582.59	0.003229	0.002212	0	0.005441	1.743295	0.081546	0	1.824841	0.06952	0.047627	0	0.117147	0	0	0	0.117147	0.079143	0.05422	0	0.133362	0	0	0	0.133362	0.475435	2.000259	0	2.475693	0.104779	0.004901	0	0.10968	2.422458	1034.668
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170.8582	0.113372	0.06576	0	0.179133	0.030065	0.004765	0	0.034831	0.00162	0.00094	0	0.002559	0	0	0	0.002559	0.115705	0.067113	0	0.182818	0	0	0	0.182818	0.414679	0.19136	0	0.606038	0	0	0	0	0.180317	19.7486
356.7154	0.001551	0.001388	0.004827	0.007765	0.003014	2.93E-05	0.003562	0.006605	0.007308	0.005583	0.026445	0.039335	0.030661	0.005111	0.033333	0.10844	0.010663	0.008147	0.028953	0.047763	0.030661	0.005111	0.033333	0.116868	0.162629	0.043146	0.516018	0.721792	0.003458	2.61E-05	4.28E-05	0.003526	0.010313	37.61519
1073.932	0.001017	0.00052	0	0.001537	0.164739	0.004459	0	0.169198	0.021888	0.011195	0	0.033083	0	0	0	0.033083	0.024918	0.012744	0	0.037662	0	0	0	0.037662	0.09043	0.178804	0	0.269234	0.009901	0.000268	0	0.010169	0.186834	95.93394
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49.54307	0.039079	0.004227	0	0.043306	0.009833	0.000266	0	0.0101	0.000558	6.04E-05	0	0.000619	0	0	0	0.000619	0.039883	0.004314	0	0.044197	0	0	0	0.044197	0.154905	0.01058	0	0.165486	0	0	0	0	0.062059	5.726423
227.4637	0.000632	0.013134	0.001412	0.015178	0.003744	0.000383	0.00157	0.005697	0.002675	0.055847	0.007713	0.066235	0.023154	0.003326	0.015932	0.108647	0.003903	0.081492	0.008445	0.09384	0.023154	0.003326	0.015932	0.136252	0.055014	0.431604	0.166679	0.653297	0.002112	0.000126	1.07E-05	0.002249	0.012199	23.98577
325.8278	0.000172	0.000107	0	0.000279	0.047188	0.004147	0	0.051334	0.003704	0.002296	0	0.006001	0	0	0	0.006001	0.004217	0.002614	0	0.006831	0	0	0	0.006831	0.020083	0.093632	0	0.113716	0.002836	0.000249	0	0.003085	0.059876	29.10607
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
178.2881	0.373294	0.070115	0	0.443409	0.031708	0.004637	0	0.036345	0.005334	0.001002	0	0.006335	0	0	0	0.006335	0.380974	0.071558	0	0.452532	0	0	0	0.452532	1.142446	0.162914	0	1.305359	0	0	0	0	0.115133	20.60738
130.0132	0.000166	0	0.00023	0.000395	0.000576	0	0.000393	0.00097	0.000425	0	0.000768	0.001193	0.000708	0.000193	0.000753	0.002847	0.00062	0	0.000841	0.001461	0.000708	0.000193	0.000753	0.003115	0.098767	0	0.047391	0.146158	0.001283	0	2.78E-06	0.001285	0.008391	13.70973
45.07922	0.000129	0	0	0.000129	0.007102	0	0	0.007102	0.002774	0	0	0.002774	0	0	0	0.002774	0.003158	0	0	0.003158	0	0	0	0.003158	0.00337	0	0	0.00337	0.000427	0	0	0.000427	0.009029	4.026909
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264.569	0.568441	0	0	0.568441	0.053934	0	0	0.053934	0.009219	0	0	0.009219	0	0	0	0.009219	0.581334	0	0	0.581334	0	0	0	0.581334	6.642554	0	0	6.642554	0	0	0	0	0.140494	30.58014

7.968987	0.00038	0	1.01E-07	0.00038	0.000466	0	1.39E-05	0.000479	0.001724	0	5.22E-07	0.001725	7.74E-05	1.08E-05	0.000147	0.00196	0.002516	0	5.72E-07	0.002516	7.74E-05	1.08E-05	0.000147	0.002752	0.133094	0	0.003669	0.136763	7.84E-05	0	3.38E-07	7.88E-05	0.000207	0.84032
89179.91	0.033543	0.13988	0	0.173423	13.14808	0.902248	0	14.05033	0.72218	3.011571	0	3.733751	0	0	0	3.733751	0.822147	3.428444	0	4.250591	0	0	0	4.250591	2.735814	44.47297	0	47.20878	0.790252	0.054229	0	0.84448	14.37802	7966.406
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1733.254	1.077682	0.441967	0	1.519649	0.313294	0.040042	0	0.353335	0.020366	0.006505	0	0.02687	0.02687	0	0	0.02687	1.105514	0.451275	0	1.556789	0	0	0	1.556789	8.405149	1.634502	0	10.03965	0	0	0	1.128978	200.3378
128864.1	0.582432	0	2.129699	2.712132	1.763612	0	1.653819	3.41743	1.70248	0	8.170994	9.873474	13.75021	2.628749	10.17127	36.4237	2.484255	0	8.94621	11.43046	13.75021	2.628749	10.17127	37.98069	269.9516	0	106.4929	376.4445	1.239242	0	0.03471	1.273952	22.84429	13588.55
63.79449	0.000102	0	0	0.000102	0.010051	0	0	0.010051	0.002187	0	0	0.002187	0	0	0	0.002187	0.00249	0	0	0.00249	0	0	0	0.00249	0.05971	0	0	0.05971	0.000604	0	0	0.000604	0.001051	5.698736
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3206.795	0.009898	0	0.107167	0.117065	0.011982	0	0.051158	0.06314	0.032382	0	0.454124	0.486506	0.560274	0.107328	0.225472	1.37958	0.047252	0	0.497209	0.544461	0.560274	0.107328	0.225472	1.437535	4.92809	0	3.487466	8.415557	0.030214	0	0.001488	0.031702	0.446554	338.1525
10709.79	0.049488	0	0.183849	0.233337	0.13806	0	0.134794	0.272855	0.153427	0	0.735433	0.888859	1.756276	0.311291	1.261843	4.218269	0.22388	0	0.805206	1.029086	1.756276	0.311291	1.261843	4.358496	21.4828	0	8.8352	30.318	0.102795	0	0.003082	0.105877	1.59109	1129.334
0.151636	3.16E-07	0	0	3.16E-07	2.39E-05	0	0	2.39E-05	6.79E-06	0	0	6.79E-06	0	0	0	6.79E-06	7.73E-06	0	0	7.73E-06	0	0	0	7.73E-06	7.18E-05	0	0	7.18E-05	1.44E-06	0	0	1.44E-06	1.36E-06	0.013546
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106.8301	0.000329	0	0.003538	0.003866	0.000395	0	0.001692	0.002087	0.001076	0	0.014975	0.016051	0.012813	0.002868	0.004569	0.036302	0.001571	0	0.016396	0.017966	0.012813	0.002868	0.004569	0.038217	0.163211	0	0.114937	0.278149	0.001	0	5.61E-05	0.001056	0.014753	11.2651
89727.22	0.457034	0	1.634107	2.091142	1.119548	0	1.175782	2.29533	1.408305	0	6.518048	7.926354	9.300516	1.708171	6.867021	25.80206	2.054996	0	7.136442	9.191439	9.300516	1.708171	6.867021	27.06715	185.4418	0	81.14311	266.5849	0.861689	0	0.025356	0.887045	13.14026	9461.623
308.5495	0.000833	0	0	0.000833	0.048612	0	0	0.048612	0.017939	0	0	0.017939	0	0	0	0.017939	0.020423	0	0	0.020423	0	0	0	0.020423	0.18837	0	0	0.18837	0.002924	0	0	0.002924	0.003725	27.5626
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1052.296	0.003207	0	0.035514	0.038721	0.003858	0	0.016921	0.020779	0.010532	0	0.150833	0.161364	0.154995	0.031606	0.058711	0.406675	0.015368	0	0.165143	0.180511	0.154995	0.031606	0.058711	0.425822	1.600566	0	1.158188	2.758754	0.009809	0	0.000594	0.010403	0.144904	110.9633
8873.564	0.012911	0.034148	0.124447	0.171506	0.028446	0.000984	0.23345	0.26288	0.044433	0.116957	0.560396	0.721786	0.904434	0.13999	1.211898	2.978108	0.064837	0.170663	0.613563	0.849063	0.904434	0.13999	1.211898	3.105385	7.747331	1.494854	18.83291	28.0751	0.085915	0.000424	0.001385	0.087724	0.614139	935.7062
5149.528	0.0327	0.001445	0	0.034145	0.806055	0.005255	0	0.81131	0.704014	0.031103	0	0.735117	0	0	0	0.735117	0.801473	0.035409	0	0.836882	0	0	0	0.836882	1.745778	0.2578	0	2.003579	0.048478	0.000316	0	0.048794	2.039332	460.0053
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1218.804	0.001384	0.003944	0.013909	0.019236	0.004182	0.000113	0.026915	0.03121	0.004623	0.013363	0.061305	0.079291	0.12466	0.018591	0.165144	0.387685	0.006747	0.019499	0.067121	0.093366	0.12466	0.018591	0.165144	0.401761	0.972481	0.190958	2.441905	3.605344	0.011813	6.25E-05	0.000174	0.012049	0.076132	128.5214
2838.843	0.018622	0.000706	0	0.019328	0.443078	0.004183	0	0.447261	0.400927	0.015192	0	0.416118	0	0	0	0.416118	0.456428	0.017295	0	0.473723	0	0	0	0.473723	1.02295	0.125917	0	1.148868	0.026648	0.000252	0	0.026899	0.94253	253.5927
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
921.7215	0.647437	0	0.226989	0.874426	0.162095	0	0.008262	0.170357	3.913764	0	1.618419	5.532183	3.306644	5.965593	6.425504	21.22992	4.872933	0	1.761821	6.634754	3.306644	5.965593	6.425504	22.33249	46.84112	0	12.75002	59.59114	0.008478	0	0.000634	0.009112	0.041448	97.19438
61782.24	0.28886	0	1.048914	1.337775	0.683366	0	0.720498	1.403864	0.937978	0	4.403739	5.341716	6.508593	1.170144	4.712478	17.73293	1.368695	0	4.82154	6.190234	6.508593	1.170144	4.712478	18.58145	111.2735	0	49.72789	161.0014	0.592663	0	0.018117	0.61078	7.414497	6514.86
667.8309	0.000547	0	0	0.000547	0.105217	0	0	0.105217	0.011772	0	0	0.011772	0	0	0	0.011772	0.013401	0	0	0.013401	0	0	0	0.013401	0.35312	0	0	0.35312	0.006328	0	0	0.006328	0.006132	59.65707
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
655.5585	0.001962	0	0.022332	0.024294	0.002354	0	0.010606	0.01296	0.006463	0	0.095172	0.101636	0.102837	0.020677	0.039785	0.264935	0.009431	0	0.104202	0.113633	0.102837	0.020677	0.039785	0.276933	0.982943	0	0.730767	1.71371	0.006024	0	0.000457	0.006481	0.089051	69.12782
1010.436	0.00194	0	0.000171	0.002111	0.00822	0	0.000241	0.008461	0.005421	0	0.000612	0.006032	0.114731	0.018471	0.000633	0.139866	0.00791	0	0.00067	0.00858	0.114731	0.018471	0.000633	0.142413	0.084419	0	0.013	0.097418	0.009988	0	1.53E-06	0.009989	0.024547	106.5492
330.4292	0.000954	0	0	0.000954	0.052059	0	0	0.052059	0.020529	0	0	0.020529	0	0	0	0.020529	0.023371	0	0	0.023371	0	0	0	0.023371	0.064403	0	0	0.064403	0.003131	0	0	0.003131	0.064555	29.51711
2048.989	0.003811	0.007621	0.021446	0.032877	0.010142	0.000164	0.015637	0.025944	0.014453	0.028889	0.105665	0.149007	0.068695	0.009658	0.128883	0.356243	0.02109	0.042155	0.11569	0.178935	0.068695	0.009658	0.128883	0.386171	0.269657	0.420123	1.952449	2.642229	0.019911	0.000133	0.000212	0.020256	0.061084	216.0633
11451.83	0.003124	0.002181	0	0.005305	1.724279	0.079961	0	1.80424	0.06726	0.046959	0	0.114219	0	0	0	0.114219	0.07657	0.05346	0	0.13003	0	0	0	0.13003	0.464944	1.975221	0	2.440165	0.103636	0.004806	0	0.108442	2.40796	1022.987
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
168.6828	0.112274	0.064514	0	0.176788	0.029691	0.004696	0	0.034387	0.001604	0.000922	0	0.002526	0	0	0	0.002526	0.114584	0.065841	0	0.180425	0	0	0	0.180425	0.40953	0.189831	0	0.599362	0	0	0	0	0.178378	19.49716
342.2418	0.001443	0.001342	0.004608	0.007394	0.003215	2.8E-05	0.003413	0.006657	0.006769	0.005393	0.025217	0.037379	0.029633	0.00488	0.032296	0.104187	0.009877	0.00787	0.027609	0.045356	0.029633	0.00488	0.032296	0.112165	0.148808	0.041679	0.493361	0.683849	0.003317	2.52E-05	4.12E-05	0.003383	0.009935	36.08897
1075.096	0.000928	0.000521	0	0.001449	0.164932	0.00445	0	0.169382	0.019979	0.011225	0	0.031204	0	0	0	0.031204	0.022744	0.012779	0	0.035523	0	0	0	0.035523	0.085427	0.179454	0	0.264882	0.009913	0.000267	0	0.010181	0.187807	96.03789
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49.72086	0.039284	0.004268	0	0.043552	0.009867	0.000269	0	0.010136	0.000561	6.1E-05	0	0.000622	0	0	0	0.000622	0.040092	0.004356	0	0.044448	0	0	0	0.044448	0.15563	0.010737	0	0.166367	0	0	0	0	0.062351	5.746973
220.466	0.000609	0.012818	0.001391	0.014818	0.003609	0.000369	0.001528	0.005507	0.00258	0.054532	0.007601	0.064713	0.022838	0.003212	0.015786	0.106549	0.003765	0.079573	0.008322	0.09166	0.022838	0.003212	0.015786	0.133496	0.053551	0.42144	0.162044	0.637035	0.002047	0.000122	1.04E-05	0.00218	0.01187	23.24786
312.2611	0.000135	0.000102	0	0.000238	0.045243	0.003954	0	0.049197	0.002911	0.002203	0	0.005114	0	0	0	0.005114	0.003314	0.002508	0	0.005822	0	0	0	0.005822	0.017721	0.091148	0	0.108869	0.002719	0.000238	0	0.002957	0.05815	27.89416
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169.6262	0.350883	0.066343	0	0.417226	0.030121	0.004458	0	0.034579	0.005013	0.000948	0	0.005961	0	0	0	0.005961	0.358102	0.067708	0	0.42581	0	0	0	0.42581	1.061338	0.16034	0	1.221677	0	0	0	0	0.110432	19.6062
132.1584	0.000165	0	0.000234	0.000399	0.000584	0	0.000398	0.000981	0.000424	0	0.00078	0.001204	0.000739	0.000201	0.000777	0.00292	0.000618	0	0.000854	0.001472	0.000739	0.000201	0.000777	0.003189	0.100927	0	0.047588	0.148515	0.001304	0	2.81E-06	0.001307	0.008559	13.93594
19.4656	6.15E-05	0	0	6.15E-05	0.003067	0	0	0.003067	0.001323	0	0	0.001323	0	0	0	0.001323	0.001506	0	0	0.001506	0	0	0	0.001506	0.001786	0	0	0.001786	0.000184	0	0	0.000184	0.004175	1.738855
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152.4417	0.311579	0	0	0.311579	0.031076	0	0	0.031076	0.005587	0	0	0.005587	0	0	0	0.005587	0.319228	0	0	0.319228	0	0	0	0.319228	3.658531	0	0	3.658531	0	0	0	0	0.085	17.61994
7.703406	0.000367	0	9.66E-08	0.000367	0.000448	0	1.94E-05	0.000468	0.001662	0	5.01E-07	0.001663	7.62E-05	1.04E-05	0.000145	0.001895	0.002426	0	5.48E-07	0.002426	7.62E-05	1.04E-05	0.000145	0.002658	0.128445	0	0.003574	0.13202	7.58E-05	0	3.27E-07	7.62E-05	0.000201	0.812314
91139.99	0.034228	0.143561	0	0.177789	13.43508	0.924061	0	14.35914	0.736913	3.090833	0	3.827745	0	0	0	3.827745	0.838919	3.518678	0	4.357597	0	0	0	4.357597	2.782501	45.64726	0	48.42977	0.807502	0.05554	0	0.863041	14.73408	8141.499
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1719.798	1.054622	0.441084	0	1.495705	0.310656	0.039936	0	0.350592	0.019358	0.006466	0	0.025824	0	0	0	0.025824	1.081206	0.450345	0	1.531551	0	0	0	1.531551	8.25177	1.638571	0	9.890341	0	0	0	0	1.126417	198.7824
128844.2	0.577579	0	2.102745	2.680325	1.760197	0	1.652693	3.41289	1.679699	0	8.01588	9.69558	13.59204	2.571935	10.06678	35.92634	2.451013	0	8.77638	11.22739	13.59204	2.571935	10.06678	37.45815	269.4759	0	105.7003	375.1763	1.239049	0	0.034707	1.273756	22.89825	13586.46
62.57421	9.5E-05	0	0	9.5E-05	0.009859	0	0	0.009859	0.002046	0	0	0.002046	0	0	0	0.002046	0.002329	0	0	0.002329	0	0	0	0.002329	0.057386	0	0	0.057386	0.000593	0	0	0.000593	0.001037	5.589729
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3207.046	0.009891	0	0.107622	0.117513	0.011971	0	0.051334	0.063305	0.032376	0	0.456431	0.488808	0.569125	0.107475	0.226205	1.391613	0.047244	0	0.499735	0.546979	0.569125	0.107475	0.226205	1.449783	4.927808	0	3.505223	8.433031	0.030212	0	0.001493	0.031705	0.446666	338.179
10627.06	0.047118	0	0.176748	0.223866	0.134575	0	0.133075	0.267649	0.143263	0	0.697926	0.841189	1.691358	0.29443	1.219082	4.046059	0.209049	0	0.764141	0.97319	1.691358	0.29443	1.219082	4.178061	21.03855	0	8.584692	29.62324	0.102008	0	0.003051	0.105059	1.590389	1120.61
0.152546	3.15E-07	0	0	3.15E-07	2.4E-05	0	0	2.4E-05	6.78E-06	0	0	6.78E-06	0	0	0	6.78E-06	7.72E-06	0	0	7.72E-06	0	0	0	7.72E-06	7.17E-05	0	0	7.17E-05	1.45E-06	0	0	1.45E-06	1.37E-06	0.013627
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109.1908	0.000335	0	0.003649	0.003984	0.000403	0	0.001743	0.002145	0.001099	0	0.015471	0.01657	0.014417	0.003076	0.005203	0.039265	0.001604	0	0.016938	0.018542	0.014417	0.003076	0.005203	0.041237	0.166716	0	0.118742	0.285458	0.001022	0	5.79E-05	0.001079	0.015072	11.51403
89664.19	0.451656	0	1.618007	2.069663	1.110018	0	1.177445	2.287464	1.382197	0	6.421744	7.80394	9.265397	1.679194	6.846096	25.59463	2.016898	0	7.031001	9.047899	9.265397	1.679194	6.846096	26.83859	184.8992	0	80.80249	265.7017	0.86106	0	0.025362	0.886422	13.17712	9454.976
308.8241	0.000836	0	0	0.000836	0.048655	0	0	0.048655	0.017989	0	0	0.017989	0	0	0	0.017989	0.020479	0	0	0.020479	0	0	0	0.020479	0.189012	0	0	0.189012	0.002926	0	0	0.002926	0.003737	27.58713
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1062.972	0.003235	0	0.036103	0.039338	0.003889	0	0.017183	0.021072	0.010633	0	0.153504	0.164137	0.164797	0.032748	0.062324	0.424006	0.015515	0	0.168068	0.183583	0.164797	0.032748	0.062324	0.443452	1.616159	0	1.178725	2.794884	0.009905	0	0.000604	0.010509	0.146334	112.0891
8618.278	0.012309	0.032957	0.118718	0.163985	0.026459	0.000952	0.225891	0.253302	0.042071	0.112519	0.531448	0.686038	0.886507	0.133256	1.18933	2.895131	0.06139	0.164188	0.581868	0.807447	0.886507	0.133256	1.18933	3.016539	7.561835	1.455896	18.41322	27.43095	0.083444	0.000412	0.001345	0.0852	0.598745	908.7867
5001.652	0.030853	0.001406	0	0.032259	0.78292	0.005093	0	0.788012	0.664238	0.03028	0	0.694518	0	0	0	0.694518	0.756191	0.034472	0	0.790663	0	0	0	0.790663	1.628945	0.250978	0	1.879923	0.047087	0.000306	0	0.047393	1.995871	446.7956
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1181.016	0.001312	0.003769	0.013193	0.018274	0.003934	0.000109	0.025785	0.029828	0.004351	0.012713	0.057784	0.074847	0.121425	0.017565	0.161331	0.375168	0.006348	0.01855	0.063266	0.088165	0.121425	0.017565	0.161331	0.388486	0.947864	0.185663	2.383872	3.517398	0.011446	6.06E-05	0.000169	0.011676	0.074096	124.5366
2766.307	0.017922	0.000691	0	0.018612	0.431751	0.004081	0	0.435833	0.385841	0.014872	0	0.400713	0	0	0	0.400713	0.439254	0.01693	0	0.456185	0	0	0	0.456185	0.971611	0.123263	0	1.094875	0.025967	0.000245	0	0.026212	0.923922	247.1131
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921.1768	0.644267	0	0.225103	0.86937	0.161725	0	0.008105	0.16983	3.884985	0	1.601073	5.486058	3.291248	5.986641	6.448069	21.21202	4.841542	0	1.743039	6.584581	3.291248	5.986641	6.448069	22.31054	46.55784	0	12.76947	59.32731	0.008477	0	0.00063	0.009107	0.041494	97.13694
61652.12	0.282472	0	1.027644	1.310117	0.671626	0	0.718771	1.390398	0.90695	0	4.276279	5.183229	6.4225	1.138577	4.654201	17.39851	1.32342	0	4.681987	6.005407	6.4225	1.138577	4.654201	18.22069	110.5664	0	49.22085	159.7873	0.591414	0	0.01808	0.609494	7.431053	6501.139
662.2669	0.000531	0	0	0.000531	0.10434	0	0	0.10434	0.011439	0	0	0.011439	0	0	0	0.011439	0.013022	0	0	0.013022	0	0	0	0.013022	0.347966	0	0	0.347966	0.006275	0	0	0.006275	0.006108	59.16004
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663.0915	0.001981	0	0.022748	0.024729	0.002376	0	0.01079	0.013165	0.006533	0	0.097069	0.103603	0.111027	0.021556	0.04281	0.278995	0.009533	0	0.106279	0.115812	0.111027	0.021556	0.04281	0.291205	0.993697	0	0.745345	1.739041	0.00609	0	0.000465	0.006555	0.090034	69.92217
1004.109	0.001926	0	0.000169	0.002094	0.00893	0	0.000232	0.009162	0.00538	0	0.000602	0.005982	0.110055	0.017263	0.00061	0.13391	0.00785	0	0.000659	0.008509	0.110055	0.017263	0.00061	0.136438	0.083674	0	0.012864	0.096538	0.009925	0	1.52E-06	0.009927	0.024394	105.8821
328.046	0.000923	0	0	0.000923	0.051684	0	0	0.051684	0.019871	0	0	0.019871	0	0	0	0.019871	0.022622	0	0	0.022622	0	0	0	0.022622	0.061487	0	0	0.061487	0.003108	0	0	0.003108	0.064835	29.30422
1974.338	0.003537	0.007363	0.020616	0.031516	0.009472	0.000157	0.015616	0.025245	0.013214	0.027895	0.101344	0.142453	0.066202	0.00905	0.124753	0.342458	0.019282	0.040704	0.110959	0.170945	0.066202	0.00905	0.124753	0.37095	0.246968	0.405686	1.870777	2.523431	0.019187	0.000127	0.000204	0.019518	0.059087	208.1914
11352.3	0.003028	0.002155	0	0.005183	1.709959	0.0786	0	1.788559	0.065192	0.046397	0	0.111589	0	0	0	0.111589	0.074216	0.052819	0	0.127035	0	0	0	0.127035	0.455962	1.954474	0	2.410436	0.102775	0.004724	0	0.107499	2.399267	1014.096
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

166.7783	0.111335	0.063365	0	0.1747	0.029368	0.004631	0	0.033999	0.001591	0.000905	0	0.002496	0	0	0	0.002496	0.113625	0.064668	0	0.178294	0	0	0	0.178294	0.405105	0.188316	0	0.593422	0	0	0	0	0.176727	19.27703
327.3642	0.001212	0.001282	0.004304	0.006798	0.003247	2.65E-05	0.003286	0.00656	0.005576	0.00513	0.02329	0.033996	0.027899	0.004503	0.03042	0.096818	0.008137	0.007486	0.025499	0.041122	0.027899	0.004503	0.03042	0.103944	0.118633	0.039649	0.447693	0.605975	0.003174	2.38E-05	3.86E-05	0.003236	0.009555	34.52015
1076.691	0.000838	0.000523	0	0.001362	0.165184	0.004449	0	0.169633	0.018048	0.011268	0	0.029315	0	0	0	0.029315	0.020546	0.012827	0	0.033373	0	0	0	0.033373	0.080606	0.180282	0	0.260888	0.009928	0.000267	0	0.010196	0.188771	96.18038
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49.8923	0.03948	0.004307	0	0.043788	0.009899	0.000272	0	0.010171	0.000564	6.15E-05	0	0.000626	0	0	0	0.000626	0.040293	0.004396	0	0.044689	0	0	0	0.044689	0.156318	0.010887	0	0.167205	0	0	0	0	0.062621	5.766789
211.996	0.000593	0.012425	0.001357	0.014375	0.003434	0.000357	0.001431	0.005222	0.002516	0.052897	0.007418	0.062831	0.022244	0.003063	0.015452	0.10359	0.003671	0.077187	0.008122	0.08898	0.022244	0.003063	0.015452	0.129739	0.051597	0.408805	0.159056	0.619458	0.001968	0.000118	1E-05	0.002096	0.011464	22.35471
298.9038	0.000109	9.8E-05	0	0.000207	0.04333	0.003762	0	0.047092	0.002352	0.002109	0	0.004461	0	0	0	0.004461	0.002677	0.002401	0	0.005079	0	0	0	0.005079	0.015866	0.088181	0	0.104046	0.002604	0.000226	0	0.00283	0.056224	26.70096
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160.6564	0.327776	0.062336	0	0.390111	0.028485	0.004266	0	0.032751	0.004683	0.000891	0	0.005574	0	0	0	0.005574	0.334519	0.063618	0	0.398137	0	0	0	0.398137	0.978018	0.157341	0	1.135359	0	0	0	0	0.10553	18.56943
134.0311	0.000165	0	0.000233	0.000398	0.000588	0	0.0004	0.000988	0.000421	0	0.000769	0.00119	0.000753	0.000206	0.000786	0.002936	0.000615	0	0.000842	0.001456	0.000753	0.000206	0.000786	0.003203	0.10318	0	0.047618	0.150798	0.001322	0	2.82E-06	0.001325	0.00872	14.13341
2.67526	1.8E-05	0	0	1.8E-05	0.000421	0	0	0.000421	0.000388	0	0	0.000388	0	0	0	0.000388	0.000441	0	0	0.000441	0	0	0	0.000441	0.000777	0	0	0.000777	2.53E-05	0	0	2.53E-05	0.00089	0.23898
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.1815	5.43E-05	0	0	5.43E-05	0.002483	0	0	0.002483	0.001169	0	0	0.001169	0	0	0	0.001169	0.001331	0	0	0.001331	0	0	0	0.001331	0.00206	0	0	0.00206	0	0	0	0	0.01927	1.407996
7.467186	0.000354	0	1.13E-07	0.000354	0.000434	0	2.55E-05	0.000459	0.001603	0	5.91E-07	0.001603	7.4E-05	9.83E-06	0.000142	0.001829	0.002338	0	6.47E-07	0.002339	7.4E-05	9.83E-06	0.000142	0.002565	0.123975	0	0.003509	0.127483	7.35E-05	0	3.15E-07	7.38E-05	0.000196	0.787405
93240.57	0.034968	0.147429	0	0.182397	13.7428	0.947286	0	14.69009	0.75286	3.174099	0	3.926959	0	0	0	3.926959	0.857074	3.61347	0	4.470544	0	0	0	4.470544	2.834302	46.88041	0	49.71471	0.825997	0.056936	0	0.882932	15.10853	8329.143
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1708.143	1.03559	0.440601	0	1.476191	0.308349	0.039867	0	0.348216	0.018494	0.006437	0	0.024931	0	0	0	0.024931	1.061108	0.449827	0	1.510935	0	0	0	1.510935	8.113769	1.643138	0	9.756907	0	0	0	0	1.124888	197.4353
128865.4	0.574832	0	2.082488	2.657319	1.758055	0	1.652024	3.410079	1.667048	0	7.900324	9.567372	13.44974	2.521431	9.977014	35.51556	2.432553	0	8.64986	11.08241	13.44974	2.521431	9.977014	37.0306	269.2908	0	105.1854	374.4761	1.239245	0	0.034721	1.273966	22.94798	13588.7
61.65272	9E-05	0	0	9E-05	0.009713	0	0	0.009713	0.001938	0	0	0.001938	0	0	0	0.001938	0.002206	0	0	0.002206	0	0	0	0.002206	0.055615	0	0	0.055615	0.000584	0	0	0.000584	0.001026	5.507413
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3208.24	0.009889	0	0.108057	0.117946	0.011965	0	0.051505	0.06347	0.03238	0	0.458618	0.490998	0.577111	0.107722	0.226602	1.402434	0.047249	0	0.502129	0.549378	0.577111	0.107722	0.226602	1.460814	4.92902	0	3.522049	8.451069	0.030219	0	0.001497	0.031717	0.446887	338.3049
10555.96	0.045694	0	0.171118	0.216813	0.131896	0	0.131577	0.263472	0.137401	0	0.668968	0.806369	1.6344	0.279561	1.182269	3.902599	0.200495	0	0.732436	0.932931	1.6344	0.279561	1.182269	4.029161	20.73196	0	8.398424	29.13039	0.101331	0	0.003025	0.104356	1.590123	1113.113
0.153482	3.15E-07	0	0	3.15E-07	2.42E-05	0	0	2.42E-05	6.79E-06	0	0	6.79E-06	0	0	0	6.79E-06	7.73E-06	0	0	7.73E-06	0	0	0	7.73E-06	7.19E-05	0	0	7.19E-05	1.45E-06	0	0	1.45E-06	1.38E-06	0.01371
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111.3066	0.000341	0	0.003752	0.004093	0.000409	0	0.001789	0.002199	0.00112	0	0.015929	0.017049	0.016158	0.00329	0.005881	0.042377	0.001634	0	0.01744	0.019074	0.016158	0.00329	0.005881	0.044403	0.169848	0	0.122262	0.292111	0.001041	0	5.96E-05	0.0011	0.015357	11.73714
89614.67	0.44823	0	1.604201	2.052431	1.100862	0	1.17806	2.278922	1.365779	0	6.339873	7.705652	9.221073	1.650334	6.821386	25.39845	1.992941	0	6.941363	8.934304	9.221073	1.650334	6.821386	26.6271	184.5341	0	80.55749	265.0916	0.860561	0	0.025371	0.885932	13.20955	9449.755
309.1327	0.000838	0	0	0.000838	0.048704	0	0	0.048704	0.018035	0	0	0.018035	0	0	0	0.018035	0.020532	0	0	0.020532	0	0	0	0.020532	0.189607	0	0	0.189607	0.002929	0	0	0.002929	0.003748	27.6147
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1072.405	0.003259	0	0.036636	0.039895	0.003917	0	0.017418	0.021335	0.010722	0	0.155928	0.16665	0.174579	0.033865	0.065842	0.440936	0.015645	0	0.170722	0.186367	0.174579	0.033865	0.065842	0.460652	1.629893	0	1.19736	2.827253	0.009989	0	0.000613	0.010602	0.147594	113.0838
8376.383	0.011713	0.031777	0.112697	0.156187	0.02441	0.000921	0.218456	0.243787	0.039692	0.108047	0.500507	0.648247	0.862587	0.125826	1.158545	2.795205	0.057919	0.157663	0.547993	0.763574	0.862587	0.125826	1.158545	2.910532	7.385963	1.416278	17.99209	26.79434	0.081105	0.0004	0.001305	0.082809	0.58425	883.2791
4870.113	0.029342	0.001372	0	0.030714	0.76234	0.004948	0	0.767288	0.631706	0.029541	0	0.661247	0	0	0	0.661247	0.719155	0.033631	0	0.752786	0	0	0	0.752786	1.53261	0.244853	0	1.777463	0.045849	0.000298	0	0.046147	1.955795	435.0452
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1146.515	0.001251	0.003607	0.012548	0.017405	0.003727	0.000105	0.024736	0.028568	0.004119	0.012112	0.054638	0.070869	0.118099	0.016612	0.157375	0.362955	0.00601	0.017674	0.059822	0.083507	0.118099	0.016612	0.157375	0.375592	0.924462	0.180632	2.327272	3.432365	0.011112	5.87E-05	0.000164	0.011334	0.072213	120.8986
2702.306	0.01734	0.000678	0	0.018018	0.421756	0.003994	0	0.425749	0.37332	0.014594	0	0.387914	0	0	0	0.387914	0.425	0.016615	0	0.441614	0	0	0	0.441614	0.929689	0.120965	0	1.050654	0.025366	0.00024	0	0.025606	0.906759	241.3959
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
920.0138	0.640758	0	0.222163	0.862921	0.161285	0	0.007898	0.169183	3.853335	0	1.574496	5.427832	3.257153	5.993462	6.45331	21.13176	4.806799	0	1.714232	6.521031	3.257153	5.993462	6.45331	22.22496	46.24004	0	12.74909	58.98913	0.008472	0	0.000623	0.009095	0.041528	97.0143
61530.15	0.275953	0	1.004725	1.280678	0.65949	0	0.715835	1.375326	0.875027	0	4.135651	5.010678	6.334964	1.107872	4.597551	17.05107	1.276837	0	4.528018	5.804855	6.334964	1.107872	4.597551	17.84524	109.8611	0	48.73357	158.5946	0.590247	0	0.018041	0.608288	7.445163	6488.277
658.0498	0.000519	0	0	0.000519	0.103676	0	0	0.103676	0.011178	0	0	0.011178	0	0	0	0.011178	0.012726	0	0	0.012726	0	0	0	0.012726	0.344027	0	0	0.344027	0.006235	0	0	0.006235	0.006092	58.78333
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
669.7679	0.001998	0	0.023126	0.025124	0.002395	0	0.010956	0.013351	0.006595	0	0.098798	0.105393	0.119029	0.022409	0.045682	0.292514	0.009624	0	0.108172	0.117795	0.119029	0.022409	0.045682	0.304916	1.003192	0	0.758632	1.761823	0.006148	0	0.000473	0.006621	0.090902	70.62619
999.2774	0.001914	0	0.000167	0.002081	0.009459	0	0.000224	0.009683	0.005348	0	0.000595	0.005943	0.10638	0.01629	0.000592	0.129206	0.007803	0	0.000652	0.008455	0.10638	0.01629	0.000592	0.131718	0.083093	0	0.012763	0.095856	0.009877	0	1.5E-06	0.009879	0.024277	105.3726
325.7269	0.000894	0	0	0.000894	0.051318	0	0	0.051318	0.019241	0	0	0.019241	0	0	0	0.019241	0.021905	0	0	0.021905	0	0	0	0.021905	0.058706	0	0	0.058706	0.003086	0	0	0.003086	0.065081	29.09706
1909.439	0.003352	0.007131	0.01985	0.030333	0.008906	0.00015	0.015807	0.024863	0.012367	0.027001	0.097397	0.136765	0.063924	0.008521	0.120941	0.330151	0.018046	0.0394	0.106637	0.164083	0.063924	0.008521	0.120941	0.35747	0.230016	0.392717	1.802063	2.424796	0.018558	0.000123	0.000196	0.018877	0.057341	201.3479
11288.31	0.002975	0.002136	0	0.005111	1.700993	0.077485	0	1.778478	0.064051	0.045983	0	0.110034	0	0	0	0.110034	0.072917	0.052348	0	0.125265	0	0	0	0.125265	0.450554	1.9387	0	2.389253	0.102236	0.004657	0	0.106894	2.39713	1008.38
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165.2616	0.110627	0.062342	0	0.172969	0.029117	0.004573	0	0.03369	0.001581	0.000891	0	0.002471	0	0	0	0.002471	0.112903	0.063624	0	0.176528	0	0	0	0.176528	0.401649	0.18696	0	0.588609	0	0	0	0	0.175484	19.10172
315.3872	0.001043	0.001238	0.004045	0.006325	0.003237	2.54E-05	0.003224	0.006486	0.004691	0.004926	0.02174	0.031357	0.026597	0.00422	0.029025	0.091198	0.006845	0.007188	0.023802	0.037836	0.026597	0.00422	0.029025	0.097677	0.098902	0.03807	0.410077	0.547048	0.003059	2.28E-05	3.66E-05	0.003118	0.009248	33.25719
1078.667	0.000761	0.000526	0	0.001287	0.165488	0.004457	0	0.169944	0.016384	0.011324	0	0.027708	0	0	0	0.027708	0.018652	0.012892	0	0.031543	0	0	0	0.031543	0.076442	0.181299	0	0.257741	0.009946	0.000268	0	0.010214	0.189697	96.35691
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50.03577	0.039657	0.00434	0	0.043998	0.009926	0.000274	0	0.0102	0.000567	6.2E-05	0	0.000629	0	0	0	0.000629	0.040473	0.00443	0	0.044903	0	0	0	0.044903	0.156907	0.011026	0	0.167933	0	0	0	0	0.062857	5.783372
202.6619	0.000552	0.011989	0.001291	0.013832	0.003217	0.000341	0.00136	0.004918	0.00234	0.051054	0.00706	0.060454	0.0215	0.002895	0.015013	0.099862	0.003414	0.074498	0.00773	0.085643	0.0215	0.002895	0.015013	0.125051	0.049664	0.394562	0.15361	0.597836	0.00188	0.000113	9.66E-06	0.002004	0.011011	21.37045
285.4633	9.21E-05	9.36E-05	0	0.000186	0.041403	0.003572	0	0.044975	0.001982	0.002016	0	0.003998	0	0	0	0.003998	0.002257	0.002295	0	0.004552	0	0	0	0.004552	0.014432	0.084835	0	0.099267	0.002488	0.000215	0	0.002703	0.054117	25.50032
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
151.77	0.304913	0.058221	0	0.363134	0.026874	0.004065	0	0.030939	0.004357	0.000832	0	0.005188	0	0	0	0.005188	0.311186	0.059418	0	0.370605	0	0	0	0.370605	0.895765	0.153909	0	1.049674	0	0	0	0	0.100645	17.5423
136.315	0.000167	0	0.000237	0.000404	0.000601	0	0.000406	0.001007	0.000426	0	0.000782	0.001208	0.000838	0.00022	0.000855	0.00312	0.000621	0	0.000856	0.001478	0.000838	0.00022	0.000855	0.00339	0.105804	0	0.04809	0.153893	0.001345	0	2.86E-06	0.001348	0.008891	14.37424
2.676834	1.84E-05	0	0	1.84E-05	0.000422	0	0	0.000422	0.000395	0	0	0.000395	0	0	0	0.000395	0.00045	0	0	0.00045	0	0	0	0.00045	0.000844	0	0	0.000844	2.54E-05	0	0	2.54E-05	0.000891	0.239121
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.44155	5.62E-05	0	0	5.62E-05	0.002536	0	0	0.002536	0.001209	0	0	0.001209	0	0	0	0.001209	0.001377	0	0	0.001377	0	0	0	0.001377	0.002219	0	0	0.002219	0	0	0	0	0.019722	1.438054
7.267614	0.000344	0	9.77E-08	0.000345	0.000423	0	3.2E-05	0.000455	0.001558	0	5.07E-07	0.001558	7.12E-05	9.28E-06	0.000138	0.001776	0.002273	0	5.55E-07	0.002274	7.12E-05	9.28E-06	0.000138	0.002492	0.120211	0	0.003427	0.123638	7.15E-05	0	3.04E-07	7.18E-05	0.000191	0.766361
95468.45	0.035761	0.151476	0	0.187237	14.06925	0.971841	0	15.04109	0.769926	3.26124	0	4.031166	0	0	0	4.031166	0.876502	3.712673	0	4.589175	0	0	0	4.589175	2.890648	48.17065	0	51.0613	0.845618	0.058412	0	0.904029	15.50085	8528.159
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1699.104	1.017521	0.441142	0	1.458664	0.306515	0.039859	0	0.346373	0.017435	0.006415	0	0.02385	0	0	0	0.02385	1.041756	0.450345	0	1.492101	0	0	0	1.492101	7.993647	1.650058	0	9.643705	0	0	0	0	1.125058	196.3905
128916.5	0.572766	0	2.066822	2.639588	1.756694	0	1.652407	3.409101	1.657342	0	7.808344	9.465686	13.32369	2.481538	9.922733	35.19365	2.41839	0	8.549154	10.96754	13.32369	2.481538	9.922733	36.69551	269.2076	0	104.8166	374.0241	1.23972	0	0.03475	1.274471	22.9934	13594.08
60.95116	8.59E-05	0	0	8.59E-05	0.009603	0	0	0.009603	0.00185	0	0	0.00185	0	0	0	0.00185	0.002107	0	0	0.002107	0	0	0	0.002107	0.054214	0	0	0.054214	0.000578	0	0	0.000578	0.001018	5.444743
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3210.103	0.009889	0	0.108478	0.118367	0.011962	0	0.051672	0.063634	0.032391	0	0.460716	0.493107	0.581196	0.107815	0.226068	1.408186	0.047265	0	0.504426	0.551691	0.581196	0.107815	0.226068	1.46677	4.931276	0	3.538191	8.469467	0.030233	0	0.001502	0.031735	0.447184	338.5014
10498.55	0.044554	0	0.166532	0.211086	0.129775	0	0.130435	0.26021	0.132721	0	0.645409	0.77813	1.58194	0.267167	1.152654	3.779891	0.193666	0	0.706642	0.900308	1.58194	0.267167	1.152654	3.902069	20.48365	0	8.249917	28.73357	0.100784	0	0.003005	0.103789	1.590254	1107.059
0.154314	3.16E-07	0	0	3.16E-07	2.43E-05	0	0	2.43E-05	6.8E-06	0	0	6.8E-06	0	0	0	6.8E-06	7.74E-06	0	0	7.74E-06	0	0	0	7.74E-06	7.22E-05	0	0	7.22E-05	1.46E-06	0	0	1.46E-06	1.39E-06	0.013785
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113.1886	0.000346	0	0.003846	0.004192	0.000415	0	0.001831	0.002247	0.001138	0	0.016351	0.017489	0.017793	0.003489	0.006518	0.045289	0.001661	0	0.017902	0.019563	0.017793	0.003489	0.006518	0.047362	0.172627	0	0.125503	0.298129	0.001058	0	6.12E-05	0.001119	0.01561	11.93559
89591.62	0.445628	0	1.593533	2.039161	1.093758	0	1.179383	2.27314	1.353165	0	6.275321	7.628486	9.171729	1.626564	6.807205	25.23398	1.974536	0	6.870686	8.845222	9.171729	1.626564	6.807205	26.45072	184.2704	0	80.40122	264.6716	0.860312	0	0.025392	0.885704	13.23943	9447.325
309.4743	0.00084	0	0	0.00084	0.048758	0	0	0.048758	0.018077	0	0	0.018077	0	0	0	0.018077	0.02058	0	0	0.02058	0	0	0	0.02058	0.190167	0	0	0.190167	0.002932	0	0	0.002932	0.003758	27.64522
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1080.655	0.003281	0	0.037116	0.040397	0.00394	0	0.01763	0.02157	0.010799	0	0.158124	0.168923	0.182798	0.034826	0.068794	0.455342	0.015758	0	0.173126	0.188884	0.182798	0.034826	0.068794	0.475302	1.641853	0	1.214248	2.856101	0.010063	0	0.000621	0.010683	0.148694	113.9537
8154.532	0.011156	0.030672	0.106899	0.148727	0.02247	0.000892	0.211506	0.234868	0.037451	0.103833	0.470498	0.611782	0.834157	0.118535	1.124969	2.689443	0.054649	0.151513	0.515136	0.721297	0.834157	0.118535	1.124969	2.798958	7.223144	1.378434	17.59041	26.19199	0.078961	0.000388	0.001267	0.080616	0.570958	859.8852
4747.658	0.027894	0.001338	0	0.029232	0.74319	0.004806	0	0.747995	0.600539	0.028813	0	0.629352	0	0	0	0.629352	0.683673	0.032802	0	0.716475	0	0	0	0.716475	1.440763	0.238819	0	1.679583	0.044697	0.000289	0	0.044986	1.918527	424.1064
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

1115.621	0.001197	0.00346	0.011951	0.016608	0.003541	0.000101	0.02378	0.027422	0.003912	0.011567	0.051714	0.067193	0.114563	0.015734	0.153478	0.350969	0.005709	0.016878	0.05662	0.079207	0.114563	0.015734	0.153478	0.362983	0.903158	0.175986	2.275123	3.354267	0.010813	5.7E-05	0.000159	0.011029	0.070518	117.6408
2640.323	0.016719	0.000664	0	0.017383	0.412084	0.0039	0	0.415984	0.359948	0.014298	0	0.374246	0	0	0	0.374246	0.409777	0.016278	0	0.426054	0	0	0	0.426054	0.883397	0.118511	0	1.001908	0.024784	0.000235	0	0.025018	0.890789	235.859
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
918.3578	0.63704	0	0.218405	0.855445	0.160797	0	0.00765	0.168447	3.819949	0	1.540663	5.360612	3.207018	5.989194	6.445131	21.00195	4.769992	0	1.677544	6.447535	3.207018	5.989194	6.445131	22.08888	45.9005	0	12.6977	58.5982	0.008464	0	0.000615	0.009079	0.04155	96.83968
61405.41	0.268828	0	0.97802	1.246848	0.64599	0	0.711014	1.357004	0.840081	0	3.969021	4.809102	6.214403	1.075263	4.53762	16.63639	1.225845	0	4.345578	5.571423	6.214403	1.075263	4.53762	17.39871	109.037	0	48.21323	157.2502	0.589057	0	0.017998	0.607055	7.45556	6475.124
654.7311	0.00051	0	0	0.00051	0.103153	0	0	0.103153	0.010971	0	0	0.010971	0	0	0	0.010971	0.01249	0	0	0.01249	0	0	0	0.01249	0.340923	0	0	0.340923	0.006204	0	0	0.006204	0.00608	58.48687
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
675.5789	0.002013	0	0.023465	0.025478	0.002411	0	0.011105	0.013515	0.006648	0	0.100357	0.107006	0.125576	0.023128	0.048008	0.303718	0.009701	0	0.109879	0.11958	0.125576	0.023128	0.048008	0.316292	1.011417	0	0.770614	1.782031	0.006199	0	0.00048	0.006679	0.091655	71.23895
995.9453	0.001907	0	0.000166	0.002072	0.009803	0	0.00022	0.010023	0.005326	0	0.000592	0.005917	0.103466	0.015566	0.00058	0.125529	0.007772	0	0.000648	0.008419	0.103466	0.015566	0.00058	0.128031	0.08268	0	0.012703	0.095384	0.009844	0	1.5E-06	0.009846	0.024196	105.0212
323.7982	0.000869	0	0	0.000869	0.051015	0	0	0.051015	0.018718	0	0	0.018718	0	0	0	0.018718	0.021309	0	0	0.021309	0	0	0	0.021309	0.056367	0	0	0.056367	0.003068	0	0	0.003068	0.065307	28.92476
1853.051	0.003238	0.006917	0.019182	0.029337	0.008457	0.000144	0.016083	0.024683	0.011822	0.026185	0.093979	0.131986	0.061556	0.00805	0.117384	0.318976	0.017251	0.038209	0.102895	0.158355	0.061556	0.00805	0.117384	0.345345	0.217596	0.380862	1.738435	2.336893	0.018012	0.000118	0.000189	0.018319	0.055818	195.4019
11256.83	0.002934	0.002122	0	0.005055	1.696931	0.076587	0	1.773518	0.063162	0.045678	0	0.10884	0	0	0	0.10884	0.071905	0.052001	0	0.123906	0	0	0	0.123906	0.44672	1.927263	0	2.373983	0.101992	0.004603	0	0.106595	2.401154	1005.568
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163.9587	0.110064	0.061366	0	0.17143	0.028906	0.004519	0	0.033424	0.001573	0.000877	0	0.002449	0	0	0	0.002449	0.112329	0.062629	0	0.174957	0	0	0	0.174957	0.398719	0.185716	0	0.584435	0	0	0	0	0	0.174459	18.95112
304.1632	0.000838	0.001188	0.003785	0.005811	0.0032	2.43E-05	0.003075	0.006299	0.003633	0.004706	0.020062	0.028401	0.024674	0.003898	0.027408	0.084382	0.005301	0.006868	0.021965	0.034134	0.024674	0.003898	0.027408	0.090114	0.076821	0.036373	0.368251	0.481445	0.002951	2.16E-05	3.44E-05	0.003007	0.008962	32.07363
1080.862	0.000682	0.000529	0	0.001211	0.165821	0.004469	0	0.17029	0.014689	0.011388	0	0.026077	0	0	0	0.026077	0.016722	0.012964	0	0.029687	0	0	0	0.029687	0.072174	0.182423	0	0.254597	0.009967	0.000269	0	0.010235	0.190613	96.55297
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50.19878	0.039854	0.004372	0	0.044225	0.009957	0.000276	0	0.010233	0.000569	6.25E-05	0	0.000632	0	0	0	0.000632	0.040674	0.004462	0	0.045135	0	0	0	0.045135	0.157535	0.011167	0	0.168702	0	0	0	0	0	0.063114	5.802213
192.3864	0.000532	0.011469	0.001274	0.013275	0.003025	0.000322	0.001263	0.00461	0.002258	0.048888	0.006976	0.058122	0.020488	0.002703	0.014429	0.095741	0.003295	0.071337	0.007638	0.082269	0.020488	0.002703	0.014429	0.119889	0.047349	0.377821	0.146113	0.571283	0.001785	0.000108	9.2E-06	0.001902	0.010503	20.2869
272.1628	8.12E-05	8.93E-05	0	0.00017	0.039497	0.003382	0	0.042879	0.001748	0.001923	0	0.003671	0	0	0	0.003671	0.00199	0.002189	0	0.004179	0	0	0	0.004179	0.01333	0.081196	0	0.094526	0.002374	0.000203	0	0.002577	0.051941	24.31219
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
143.163	0.283109	0.05417	0	0.337279	0.025323	0.003862	0	0.029185	0.004045	0.000774	0	0.004819	0	0	0	0.004819	0.288934	0.055284	0	0.344218	0	0	0	0.344218	0.818087	0.150017	0	0.968104	0	0	0	0	0.095833	16.54746
138.6003	0.000174	0	0.000242	0.000416	0.000628	0	0.000419	0.001046	0.000445	0	0.0008	0.001244	0.000855	0.000224	0.000872	0.003195	0.000649	0	0.000875	0.001524	0.000855	0.000224	0.000872	0.003475	0.108026	0	0.049623	0.157649	0.001367	0	2.92E-06	0.00137	0.009062	14.61523
2.678425	1.82E-05	0	0	1.82E-05	0.000422	0	0	0.000422	0.000391	0	0	0.000391	0	0	0	0.000391	0.000446	0	0	0.000446	0	0	0	0.000446	0.000809	0	0	0.000809	2.54E-05	0	0	2.54E-05	0.000891	0.239263
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12.70155	5.68E-05	0	0	5.68E-05	0.002589	0	0	0.002589	0.001222	0	0	0.001222	0	0	0	0.001222	0.001391	0	0	0.001391	0	0	0	0.001391	0.002165	0	0	0.002165	0	0	0	0	0.020174	1.468106
7.10252	0.000337	0	9.64E-08	0.000337	0.000415	0	3.93E-05	0.000455	0.001524	0	5E-07	0.001524	6.92E-05	8.87E-06	0.000134	0.001736	0.002223	0	5.47E-07	0.002224	6.92E-05	8.87E-06	0.000134	0.002436	0.117292	0	0.003363	0.120655	6.99E-05	0	2.95E-07	7.02E-05	0.000187	0.748952
97822.28	0.036607	0.155693	0	0.1923	14.41431	0.997635	0	15.41194	0.788128	3.352035	0	4.140164	0	0	0	4.140164	0.897224	3.816037	0	4.713261	0	0	0	4.713261	2.951335	49.5146	0	52.46593	0.866357	0.059962	0	0.926319	15.91055	8738.426
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1691.538	1.000569	0.442392	0	1.44296	0.304941	0.03989	0	0.344831	0.016278	0.006397	0	0.022676	0	0	0	0.022676	1.023412	0.45158	0	1.474992	0	0	0	1.474992	7.884651	1.658333	0	9.542983	0	0	0	0	1.126386	195.516
128983.7	0.571177	0	2.054653	2.625831	1.755778	0	1.653511	3.409289	1.649727	0	7.734203	9.38393	13.25557	2.448519	9.883541	34.97156	2.407278	0	8.467978	10.87526	13.25557	2.448519	9.883541	36.46288	269.1863	0	104.5559	373.7423	1.240343	0	0.034792	1.275135	23.03425	13601.17
60.34065	8.17E-05	0	0	8.17E-05	0.009507	0	0	0.009507	0.00176	0	0	0.00176	0	0	0	0.00176	0.002003	0	0	0.002003	0	0	0	0.002003	0.052851	0	0	0.052851	0.000572	0	0	0.000572	0.001012	5.390207
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3212.386	0.00989	0	0.108887	0.118777	0.011961	0	0.051836	0.063797	0.032406	0	0.462738	0.495144	0.585568	0.108012	0.225991	1.414714	0.047287	0	0.50664	0.553927	0.585568	0.108012	0.225991	1.473497	4.934184	0	3.553755	8.487939	0.030251	0	0.001507	0.031758	0.447526	338.7421
10452.82	0.043618	0	0.162735	0.206352	0.128047	0	0.129557	0.257604	0.128872	0	0.625798	0.75467	1.544698	0.256659	1.128887	3.684914	0.18805	0	0.68517	0.87322	1.544698	0.256659	1.128887	3.803464	20.28069	0	8.129394	28.41009	0.100347	0	0.002989	0.103337	1.590832	1102.237
0.154843	3.15E-07	0	0	3.15E-07	2.44E-05	0	0	2.44E-05	6.78E-06	0	0	6.78E-06	0	0	0	6.78E-06	7.71E-06	0	0	7.71E-06	0	0	0	7.71E-06	7.2E-05	0	0	7.2E-05	1.47E-06	0	0	1.47E-06	1.39E-06	0.013832
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114.854	0.000351	0	0.003931	0.004282	0.00042	0	0.00187	0.00229	0.001154	0	0.016738	0.017892	0.019445	0.003685	0.007165	0.048187	0.001684	0	0.018326	0.02001	0.019445	0.003685	0.007165	0.050305	0.175078	0	0.128473	0.303551	0.001073	0	6.26E-05	0.001135	0.015833	12.11121
89575.11	0.443289	0	1.584323	2.027612	1.087304	0	1.180726	2.26803	1.341905	0	6.218781	7.560686	9.146925	1.604699	6.794413	25.10672	1.958105	0	6.808782	8.766887	9.146925	1.604699	6.794413	26.31292	184.0118	0	80.27539	264.2871	0.860125	0	0.025416	0.885541	13.26584	9445.583
309.8169	0.000841	0	0	0.000841	0.048812	0	0	0.048812	0.018116	0	0	0.018116	0	0	0	0.018116	0.020623	0	0	0.020623	0	0	0	0.020623	0.190676	0	0	0.190676	0.002936	0	0	0.002936	0.003767	27.67582
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1087.83	0.003299	0	0.03755	0.040849	0.00396	0	0.01782	0.021781	0.010865	0	0.160115	0.17098	0.190823	0.035745	0.071724	0.469271	0.015855	0	0.175305	0.19116	0.190823	0.035745	0.071724	0.489451	1.652206	0	1.229553	2.881759	0.010126	0	0.000628	0.010754	0.149646	114.7104
7960.874	0.010685	0.029702	0.102419	0.142806	0.021032	0.000867	0.205653	0.227551	0.035588	0.100185	0.448017	0.58379	0.810033	0.112186	1.093102	2.599112	0.05193	0.14619	0.490522	0.688642	0.810033	0.112186	1.093102	2.703963	7.080863	1.344942	17.22951	25.65531	0.077091	0.000377	0.001233	0.078701	0.55921	839.4643
4634.076	0.026768	0.001306	0	0.028074	0.725429	0.004672	0	0.730101	0.576301	0.028122	0	0.604423	0	0	0	0.604423	0.656081	0.032015	0	0.688096	0	0	0	0.688096	1.363323	0.23309	0	1.596413	0.043629	0.000281	0	0.04391	1.882738	413.9602
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1087.671	0.00115	0.003326	0.011435	0.015911	0.003392	9.76E-05	0.022914	0.026403	0.003738	0.01107	0.049224	0.064032	0.111235	0.014913	0.149367	0.339547	0.005454	0.016153	0.053895	0.075502	0.111235	0.014913	0.149367	0.351017	0.88333	0.171653	2.225319	3.280302	0.010542	5.54E-05	0.000155	0.010753	0.068965	114.6936
2585.67	0.016239	0.000652	0	0.016892	0.403554	0.00382	0	0.407373	0.349625	0.014041	0	0.363666	0	0	0	0.363666	0.398025	0.015985	0	0.41401	0	0	0	0.41401	0.844332	0.116378	0	0.96071	0.024271	0.00023	0	0.024501	0.876308	230.9769
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
916.2206	0.633082	0	0.213815	0.846897	0.160259	0	0.00736	0.167619	3.784474	0	1.499383	5.283857	3.14228	5.974485	6.424318	20.82494	4.730789	0	1.63277	6.363559	3.14228	5.974485	6.424318	21.90464	45.53691	0	12.61678	58.15369	0.008455	0	0.000603	0.009058	0.041562	96.61432
61296.32	0.262164	0	0.953562	1.215726	0.633366	0	0.706545	1.339911	0.807533	0	3.815737	4.62327	6.125262	1.04537	4.483698	16.2776	1.178351	0	4.177752	5.356103	6.125262	1.04537	4.483698	17.01043	108.1897	0	47.73577	155.9255	0.588013	0	0.017963	0.605977	7.464096	6463.621
652.159	0.000502	0	0	0.000502	0.102748	0	0	0.102748	0.010805	0	0	0.010805	0	0	0	0.010805	0.0123	0	0	0.0123	0	0	0	0.0123	0.338498	0	0	0.338498	0.00618	0	0	0.00618	0.006072	58.2571
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680.6033	0.002025	0	0.023769	0.025794	0.002424	0	0.011237	0.013661	0.006694	0	0.101757	0.108452	0.131734	0.023798	0.05022	0.314203	0.009768	0	0.111412	0.12118	0.131734	0.023798	0.05022	0.326931	1.01849	0	0.781376	1.799866	0.006242	0	0.000486	0.006728	0.092304	71.76877
992.7505	0.001902	0	0.000165	0.002067	0.009985	0	0.000216	0.010201	0.005313	0	0.000589	0.005901	0.101016	0.014869	0.000568	0.122355	0.007752	0	0.000645	0.008397	0.101016	0.014869	0.000568	0.12485	0.082336	0	0.012664	0.094999	0.009813	0	1.49E-06	0.009814	0.024118	104.6843
322.1066	0.000848	0	0	0.000848	0.050748	0	0	0.050748	0.018259	0	0	0.018259	0	0	0	0.018259	0.020786	0	0	0.020786	0	0	0	0.020786	0.054327	0.003052	0	0.054327	0.003052	0	0	0.003052	0.0655	28.77366
1804.806	0.003211	0.006725	0.018608	0.028544	0.00813	0.000139	0.016213	0.024482	0.01165	0.025456	0.091093	0.128199	0.059574	0.007634	0.113931	0.309337	0.016999	0.037146	0.099735	0.15388	0.059574	0.007634	0.113931	0.335019	0.207986	0.370291	1.691263	2.26954	0.017544	0.000115	0.000183	0.017842	0.05451	190.3145
11258	0.002905	0.002113	0	0.005018	1.697791	0.075911	0	1.773702	0.06255	0.045486	0	0.108036	0	0	0	0.108036	0.071208	0.051782	0	0.12299	0	0	0	0.12299	0.444357	1.920315	0	2.364672	0.102044	0.004563	0	0.106607	2.411155	1005.672
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162.782	0.109576	0.060441	0	0.170017	0.028718	0.004466	0	0.033184	0.001566	0.000864	0	0.002429	0	0	0	0.002429	0.11183	0.061684	0	0.173515	0	0	0	0.173515	0.396131	0.18447	0	0.580601	0	0	0	0	0	0.173576	18.81512
294.3136	0.00065	0.001145	0.003512	0.005307	0.003077	2.34E-05	0.002975	0.006074	0.002654	0.004503	0.01835	0.025507	0.023287	0.003592	0.025858	0.078244	0.003873	0.006571	0.020091	0.030534	0.023287	0.003592	0.025858	0.083271	0.055355	0.034802	0.327136	0.417294	0.002857	2.06E-05	3.24E-05	0.00291	0.008713	31.035
1083.044	0.000602	0.000532	0	0.001135	0.166148	0.004486	0	0.170634	0.01297	0.011461	0	0.024431	0	0	0	0.024431	0.014765	0.013048	0	0.027813	0	0	0	0.027813	0.067869	0.183665	0	0.251534	0.009986	0.00027	0	0.010256	0.191485	96.74792
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50.39943	0.040092	0.0044	0	0.044492	0.009996	0.000279	0	0.010274	0.000573	6.29E-05	0	0.000636	0	0	0	0.000636	0.040917	0.004491	0	0.045408	0	0	0	0.045408	0.1583	0.011308	0	0.169607	0	0	0	0	0	0.063428	5.825406
175.8866	0.000499	0.01061	0.001166	0.012275	0.00266	0.000293	0.001118	0.004071	0.002123	0.045251	0.006389	0.053762	0.018624	0.002368	0.013202	0.087957	0.003097	0.06603	0.006995	0.076122	0.018624	0.002368	0.013202	0.110317	0.043428	0.349712	0.137972	0.531112	0.001631	9.93E-05	8.51E-06	0.001739	0.009674	18.54702
258.9256	7.41E-05	8.51E-05	0	0.000159	0.037597	0.003197	0	0.040794	0.001595	0.001831	0	0.003426	0	0	0	0.003426	0.001816	0.002085	0	0.0039	0	0	0	0.0039	0.012442	0.077451	0	0.089893	0.00226	0.000192	0	0.002452	0.049721	23.12973
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134.9216	0.262863	0.050319	0	0.313183	0.023844	0.00366	0	0.027505	0.003756	0.000719	0	0.004475	0	0	0	0.004475	0.268271	0.051355	0	0.319626	0	0	0	0.319626	0.74725	0.145657	0	0.892907	0	0	0	0	0.091109	15.59488
140.8859	0.000183	0	0.000249	0.000432	0.000653	0	0.000433	0.001086	0.00047	0	0.000822	0.001292	0.000836	0.000224	0.000863	0.003215	0.000685	0	0.0009	0.001586	0.000836	0.000224	0.000863	0.003509	0.110551	0	0.051418	0.161968	0.00139	0	2.98E-06	0.001393	0.009233	14.85625
2.679978	1.83E-05	0	0	1.83E-05	0.000422	0	0	0.000422	0.000394	0	0	0.000394	0	0	0	0.000394	0.000449	0	0	0.000449	0	0	0	0.000449	0.00083	0	0	0.00083	2.54E-05	0	0	2.54E-05	0.000892	0.239401
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12.96142	5.79E-05	0	0	5.79E-05	0.002642	0	0	0.002642	0.001247	0	0	0.001247	0	0	0	0.001247	0.001419	0	0	0.001419	0	0	0	0.001419	0.002208	0	0	0.002208	0	0	0	0	0.020626	1.498143
6.967688	0.000332	0	3.02E-09	0.000332	0.000414	0	4.58E-05	0.000459	0.001502	0	1.62E-08	0.001503	6.68E-05	8.49E-06	0.00013	0.001708	0.002192	0	1.78E-08	0.002192	6.68E-05	8.49E-06	0.00013	0.002398	0.115938	0	0.003283	0.11922	6.86E-05	0	2.86E-07	6.89E-05	0.000184	0.734734
100295.7	0.037515	0.160073	0	0.197587	14.77704	1.024591	0	15.80163	0.807679	3.446321	0	4.254	0	0	0	4.254	0.919481	3.923374	0	4.842855	0	0	0	4.842855	3.0167	50.90961	0	53.92631	0.888159	0.061582	0	0.949741	16.33736	8959.377
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1687.097	0.987809	0.444486	0	1.432295	0.303939	0.039987	0	0.343926	0.015585	0.006406	0	0.021992	0	0	0	0.021992	1.009808	0.453694	0	1.463502	0	0	0	1.463502	7.788209	1.668657	0	9.456866	0	0	0	1.12929	195.0027
129063.9	0.569993	0	2.045388	2.615381	1.755273	0	1.655143	3.410416	1.643905	0	7.675458	9.319363	13.18502	2.41976	9.854049	34.77819	2.398782	0	8.40366	10.80244	13.18502	2.41976	9.854049	36.26127	269.2247	0	104.3835	373.6082	1.241087	0	0.034841	1.275928	23.07184	13609.63
59.81339	7.77E-05	0	0	7.77E-05	0.009424	0	0	0.009424	0.001672	0	0	0.001672	0	0	0	0.001672	0.001903	0	0	0.001903	0	0	0	0.001903	0.05158	0	0	0.05158	0.000567	0	0	0.000567	0.001006	5.343107

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3215.128	0.009893	0	0.109289	0.119182	0.011963	0	0.051998	0.063961	0.032426	0	0.464712	0.497138	0.589692	0.108294	0.226279	1.421404	0.047316	0	0.508802	0.556117	0.589692	0.108294	0.226279	1.480383	4.937803	0	3.568948	8.506751	0.030273	0	0.001512	0.031785	0.447923	339.0312
10423	0.043097	0	0.160327	0.203424	0.127164	0	0.129147	0.256311	0.12676	0	0.613558	0.740318	1.518993	0.249543	1.113675	3.622529	0.184967	0	0.671769	0.856736	1.518993	0.249543	1.113675	3.738948	20.17136	0	8.057969	28.22933	0.100061	0	0.002981	0.103042	1.592459	1099.092
0.155705	3.17E-07	0	0	3.17E-07	2.45E-05	0	0	2.45E-05	6.82E-06	0	0	6.82E-06	0	0	0	6.82E-06	7.77E-06	0	0	7.77E-06	0	0	0	7.77E-06	7.27E-05	0	0	7.27E-05	1.48E-06	0	0	1.48E-06	1.4E-06	0.013909
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116.3245	0.000355	0	0.00401	0.004364	0.000425	0	0.001905	0.00233	0.001168	0	0.017091	0.018259	0.0211	0.003875	0.007815	0.051048	0.001705	0	0.018712	0.020417	0.0211	0.003875	0.007815	0.053206	0.177236	0	0.131185	0.308421	0.001086	0	6.39E-05	0.00115	0.01603	12.26627
89566.15	0.441001	0	1.575956	2.016958	1.081009	0	1.18187	2.262879	1.330939	0	6.166484	7.497423	9.11276	1.584509	6.783568	24.97826	1.942102	0	6.751524	8.693627	9.11276	1.584509	6.783568	26.17446	183.761	0	80.15971	263.9208	0.86001	0	0.025442	0.885453	13.28981	9444.638
310.1568	0.000843	0	0	0.000843	0.048865	0	0	0.048865	0.01815	0	0	0.01815	0	0	0	0.01815	0.020663	0	0	0.020663	0	0	0	0.020663	0.191143	0	0	0.191143	0.002939	0	0	0.002939	0.003775	27.70618
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1094.066	0.003314	0	0.03794	0.041254	0.003977	0	0.017991	0.021968	0.010923	0	0.161912	0.172835	0.198503	0.03661	0.074557	0.482505	0.015939	0	0.177274	0.193212	0.198503	0.03661	0.074557	0.502882	1.661161	0	1.24338	2.904541	0.010181	0	0.000635	0.010816	0.150472	115.3679
7774.569	0.010195	0.028718	0.097642	0.136555	0.019482	0.000841	0.199773	0.220096	0.03362	0.096411	0.423632	0.553663	0.777761	0.104931	1.051892	2.488247	0.049059	0.140683	0.463823	0.653565	0.777761	0.104931	1.051892	2.588149	6.949901	1.310556	16.86822	25.12868	0.075293	0.000367	0.0012	0.07686	0.548077	819.8186
4528.73	0.025756	0.001275	0	0.027031	0.70896	0.004543	0	0.713503	0.554518	0.027452	0	0.58197	0	0	0	0.58197	0.631282	0.031252	0	0.662534	0	0	0	0.662534	1.291549	0.227534	0	1.519083	0.042639	0.000273	0	0.042912	1.849173	404.5497
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1062.543	0.001109	0.003204	0.010959	0.015272	0.003261	9.44E-05	0.022132	0.025487	0.003584	0.010616	0.046922	0.061122	0.107605	0.014137	0.145021	0.327884	0.005229	0.015491	0.051373	0.072094	0.107605	0.014137	0.145021	0.338856	0.865173	0.167622	2.178415	3.21121	0.010299	5.4E-05	0.000151	0.010504	0.067557	112.0439
2533.694	0.015769	0.00064	0	0.016409	0.395446	0.003738	0	0.399185	0.339498	0.01378	0	0.353278	0	0	0	0.353278	0.386496	0.015687	0	0.402183	0	0	0	0.402183	0.805008	0.114214	0	0.919221	0.023783	0.000225	0	0.024008	0.862684	226.3339
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913.7796	0.629077	0	0.208648	0.837725	0.159706	0	0.00704	0.166746	3.748547	0	1.452831	5.201378	3.066314	5.951877	6.394063	20.61363	4.691036	0	1.582274	6.27331	3.066314	5.951877	6.394063	21.68556	45.16734	0	12.51437	57.68171	0.008443	0	0.00059	0.009034	0.041567	96.35692
61194.17	0.256469	0	0.931861	1.18833	0.622594	0	0.70291	1.325504	0.780235	0	3.681282	4.461517	6.025611	1.016103	4.431222	15.93445	1.138517	0	4.030541	5.169058	6.025611	1.016103	4.431222	16.64199	107.0096	0	47.27965	154.2893	0.587036	0	0.017931	0.604967	7.470732	6452.849
650.2453	0.000496	0	0	0.000496	0.102446	0	0	0.102446	0.010671	0	0	0.010671	0	0	0	0.010671	0.012148	0	0	0.012148	0	0	0	0.012148	0.336622	0	0	0.336622	0.006161	0	0	0.006161	0.006067	58.08616
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
684.9699	0.002036	0	0.02404	0.026076	0.002436	0	0.011355	0.013791	0.006734	0	0.103016	0.10975	0.13746	0.02442	0.052306	0.323936	0.009826	0	0.11279	0.122616	0.13746	0.02442	0.052306	0.336802	1.024606	0	0.791054	1.81566	0.00628	0	0.000492	0.006772	0.092865	72.22922
990.1629	0.001723	0	0.00017	0.001893	0.010055	0	0.000212	0.010268	0.004809	0	0.000592	0.0054	0.09881	0.014276	0.000559	0.119045	0.007017	0	0.000648	0.007665	0.09881	0.014276	0.000559	0.121309	0.082733	0	0.011976	0.094709	0.009787	0	1.48E-06	0.009789	0.024054	104.4114
320.5971	0.000834	0	0	0.000834	0.05051	0	0	0.05051	0.017952	0	0	0.017952	0	0	0	0.017952	0.020438	0	0	0.020438	0	0	0	0.020438	0.052782	0	0	0.052782	0.003038	0	0	0.003038	0.065665	28.63881
1763.482	0.00309	0.006553	0.018192	0.027834	0.00788	0.000134	0.016499	0.024513	0.011259	0.024793	0.088942	0.124994	0.057303	0.007245	0.110202	0.299744	0.016429	0.036178	0.097381	0.149988	0.057303	0.007245	0.110202	0.324737	0.202657	0.360656	1.603453	2.166766	0.017145	0.000111	0.000177	0.017434	0.053388	185.957
11290.63	0.002888	0.002109	0	0.004997	1.703377	0.075466	0	1.778843	0.06218	0.045411	0	0.10759	0	0	0	0.10759	0.070787	0.051697	0	0.122483	0	0	0	0.122483	0.443396	1.91818	0	2.361576	0.10238	0.004536	0	0.106916	2.427008	1008.587
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
161.8305	0.109222	0.059613	0	0.168835	0.028571	0.004419	0	0.03299	0.001561	0.000852	0	0.002412	0	0	0	0.002412	0.111469	0.06084	0	0.172308	0	0	0	0.172308	0.394117	0.183348	0	0.577465	0	0	0	0	0.172928	18.70514
285.2717	0.000413	0.001101	0.003276	0.00479	0.002859	2.26E-05	0.002883	0.005764	0.001491	0.004298	0.01679	0.022579	0.021619	0.003273	0.024199	0.071671	0.002176	0.006272	0.018383	0.02683	0.021619	0.003273	0.024199	0.075923	0.033113	0.033219	0.277645	0.343977	0.002771	1.95E-05	3.01E-05	0.00282	0.008486	30.08155
1085.289	0.000547	0.000536	0	0.001083	0.166483	0.004505	0	0.170988	0.011777	0.01154	0	0.023317	0	0	0	0.023317	0.013407	0.013138	0	0.026545	0	0	0	0.026545	0.064551	0.18495	0	0.249501	0.010006	0.000271	0	0.010277	0.192292	96.9484
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50.57844	0.040344	0.004418	0	0.044762	0.01003	0.00028	0	0.010311	0.000576	6.31E-05	0	0.00064	0	0	0	0.00064	0.041174	0.004509	0	0.045683	0	0	0	0.045683	0.159037	0.011445	0	0.170483	0	0	0	0	0.063738	5.846096
152.2894	0.000425	0.009373	0.001016	0.010813	0.002099	0.000253	0.000901	0.003254	0.001807	0.040002	0.005573	0.047381	0.015653	0.001902	0.011261	0.076197	0.002636	0.05837	0.006102	0.067108	0.015653	0.001902	0.011261	0.095924	0.037296	0.309144	0.11781	0.46425	0.001412	8.66E-05	7.38E-06	0.001506	0.008484	16.05873
246.0134	6.9E-05	8.09E-05	0	0.00015	0.035741	0.003018	0	0.03876	0.001485	0.001742	0	0.003227	0	0	0	0.003227	0.001691	0.001983	0	0.003674	0	0	0	0.003674	0.011692	0.073727	0	0.085419	0.002148	0.000181	0	0.00233	0.047535	21.97628
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127.3142	0.244949	0.046812	0	0.291762	0.022487	0.003467	0	0.025954	0.0035	0.000669	0	0.004169	0	0	0	0.004169	0.249988	0.047776	0	0.297764	0	0	0	0.297764	0.686057	0.14095	0	0.827007	0	0	0	0	0.086641	14.71558
143.1699	0.000188	0	0.000254	0.000442	0.000669	0	0.000443	0.001111	0.000482	0	0.00084	0.001322	0.000868	0.000232	0.000892	0.003315	0.000703	0	0.00092	0.001623	0.000868	0.000232	0.000892	0.003616	0.112799	0	0.052572	0.165371	0.001412	0	3.03E-06	0.001415	0.009404	15.09709
2.681559	1.87E-05	0	0	1.87E-05	0.000422	0	0	0.000422	0.000402	0	0	0.000402	0	0	0	0.000402	0.000457	0	0	0.000457	0	0	0	0.000457	0.000899	0	0	0.000899	2.54E-05	0	0	2.54E-05	0.000892	0.239543
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13.22121	5.89E-05	0	0	5.89E-05	0.002695	0	0	0.002695	0.001269	0	0	0.001269	0	0	0	0.001269	0.001445	0	0	0.001445	0	0	0	0.001445	0.002258	0	0	0.002258	0	0	0	0	0.021078	1.52817
6.855846	0.000327	0	3.11E-07	0.000328	0.000412	0	5.26E-05	0.000465	0.00148	0	1.77E-06	0.001482	6.44E-05	8.12E-06	0.000125	0.00168	0.002159	0	1.94E-06	0.002161	6.44E-05	8.12E-06	0.000125	0.002359	0.113559	0	0.003212	0.116771	6.75E-05	0	2.79E-07	6.78E-05	0.000181	0.72294
102889.1	0.038466	0.164616	0	0.203082	15.1575	1.052725	0	16.21022	0.828161	3.54414	0	4.3723	0	0	0	4.3723	0.942798	4.034733	0	4.977531	0	0	0	4.977531	3.085877	52.35661	0	55.44249	0.911026	0.063273	0	0.974298	16.78114	9191.045
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1684.188	0.97424	0.447415	0	1.421655	0.303201	0.040132	0	0.343333	0.014589	0.006417	0	0.021006	0	0	0	0.021006	0.995046	0.456648	0	1.451694	0	0	0	1.451694	7.701985	1.680925	0	9.38291	0	0	0	0	1.133452	194.6665
129149.6	0.5698	0	2.041924	2.611725	1.756554	0	1.658777	3.41533	1.642642	0	7.651951	9.294594	13.15407	2.401434	9.840836	34.69094	2.39694	0	8.377924	10.77486	13.15407	2.401434	9.840836	36.17121	269.4206	0	104.3696	373.7902	1.241877	0	0.034898	1.276775	23.10821	13618.66
59.4737	7.55E-05	0	0	7.55E-05	0.00937	0	0	0.00937	0.001626	0	0	0.001626	0	0	0	0.001626	0.001851	0	0	0.001851	0	0	0	0.001851	0.050858	0	0	0.050858	0.000564	0	0	0.000564	0.001002	5.312762
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3218.116	0.009897	0	0.109686	0.119583	0.011966	0	0.05216	0.064125	0.032448	0	0.466657	0.499105	0.594081	0.108652	0.226885	1.428722	0.047348	0	0.510931	0.558278	0.594081	0.108652	0.226885	1.487896	4.941793	0	3.583912	8.525705	0.030297	0	0.001517	0.031814	0.448346	339.3463
10400.44	0.042894	0	0.158834	0.201728	0.126936	0	0.129064	0.256	0.125969	0	0.606296	0.732266	1.502649	0.244356	1.102463	3.581734	0.183814	0	0.663818	0.847632	1.502649	0.244356	1.102463	3.697101	20.12155	0	8.013972	28.13552	0.099843	0	0.002976	0.102819	1.594749	1096.714
0.156454	3.19E-07	0	0	3.19E-07	2.46E-05	0	0	2.46E-05	6.86E-06	0	0	6.86E-06	0	0	0	6.86E-06	7.81E-06	0	0	7.81E-06	0	0	0	7.81E-06	7.32E-05	0	0	7.32E-05	1.48E-06	0	0	1.48E-06	1.41E-06	0.013976
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117.6152	0.000358	0	0.00408	0.004439	0.000429	0	0.001936	0.002365	0.00118	0	0.017412	0.018593	0.022762	0.00406	0.008471	0.053886	0.001723	0	0.019064	0.020787	0.022762	0.00406	0.008471	0.05608	0.179123	0	0.133653	0.312776	0.001098	0	6.51E-05	0.001163	0.016202	12.40238
89558.56	0.441045	0	1.573122	2.014167	1.08128	0	1.186026	2.267306	1.330543	0	6.148522	7.479065	9.085597	1.568101	6.773133	24.9059	1.941525	0	6.731857	8.673383	9.085597	1.568101	6.773133	26.10021	183.8416	0	80.17191	264.0135	0.859906	0	0.025472	0.885378	13.31511	9443.838
310.485	0.000844	0	0	0.000844	0.048917	0	0	0.048917	0.018181	0	0	0.018181	0	0	0	0.018181	0.020698	0	0	0.020698	0	0	0	0.020698	0.191571	0	0	0.191571	0.002942	0	0	0.002942	0.003783	27.7355
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1099.448	0.003327	0	0.038291	0.041618	0.003991	0	0.018143	0.022134	0.010972	0	0.163536	0.174508	0.205868	0.037425	0.077296	0.495097	0.01601	0	0.179051	0.195061	0.205868	0.037425	0.077296	0.51565	1.668847	0	1.255869	2.924716	0.010228	0	0.000641	0.010869	0.151182	115.9354
7614.124	0.009862	0.02785	0.094439	0.13215	0.01845	0.00082	0.193201	0.212472	0.032349	0.093182	0.408236	0.533767	0.748771	0.099462	1.015124	2.397124	0.047204	0.135971	0.446967	0.630142	0.748771	0.099462	1.015124	2.493498	6.835801	1.280601	16.57309	24.68949	0.073746	0.000357	0.00117	0.075273	0.538386	802.8999
4433.319	0.024647	0.001245	0	0.025893	0.694049	0.004422	0	0.698471	0.530644	0.026812	0	0.557457	0	0	0	0.557457	0.604103	0.030524	0	0.634627	0	0	0	0.634627	1.227769	0.222235	0	1.450004	0.041742	0.000266	0	0.042008	1.817898	396.0266
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1039.494	0.001075	0.003089	0.010538	0.014702	0.003151	9.15E-05	0.021356	0.024599	0.003456	0.010192	0.044918	0.058566	0.103853	0.013402	0.140305	0.316127	0.005043	0.014872	0.049179	0.069094	0.103853	0.013402	0.140305	0.326655	0.848304	0.163778	2.13408	3.146162	0.010077	5.26E-05	0.000147	0.010276	0.066257	109.6133
2484.238	0.015109	0.000628	0	0.015737	0.387734	0.003659	0	0.391393	0.325278	0.013523	0	0.3388	0	0	0	0.3388	0.370307	0.015395	0	0.385702	0	0	0	0.385702	0.767965	0.112082	0	0.880047	0.023319	0.00022	0	0.023539	0.850208	221.916
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
911.9217	0.625913	0	0.204991	0.830904	0.159288	0	0.006757	0.166045	3.719802	0	1.419581	5.139384	3.010505	5.942599	6.380343	20.47283	4.659641	0	1.54624	6.205881	3.010505	5.942599	6.380343	21.53933	44.90751	0	12.46974	57.37726	0.008435	0	0.00058	0.009015	0.041579	96.161
61103.36	0.255546	0	0.927293	1.182839	0.620742	0	0.704599	1.325341	0.776434	0	3.656696	4.433131	5.942678	0.994282	4.386871	15.75696	1.132971	0	4.003622	5.136593	5.942678	0.994282	4.386871	16.46042	106.8388	0	47.15549	153.9942	0.58616	0	0.017908	0.604069	7.482306	6443.273
648.816	0.000491	0	0	0.000491	0.102221	0	0	0.102221	0.01056	0	0	0.01056	0	0	0	0.01056	0.012022	0	0	0.012022	0	0	0	0.012022	0.335139	0	0	0.335139	0.006148	0	0	0.006148	0.006065	57.95847
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
688.7624	0.002045	0	0.024285	0.02633	0.002446	0	0.011461	0.013906	0.006767	0	0.104153	0.11092	0.142837	0.024997	0.054279	0.333033	0.009875	0	0.114034	0.123909	0.142837	0.024997	0.054279	0.346022	1.029885	0	0.799792	1.829677	0.006312	0	0.000497	0.006809	0.093351	72.62913
987.6985	0.001513	0	0.000174	0.001686	0.009937	0	0.000209	0.010146	0.004206	0	0.000586	0.004792	0.096919	0.013761	0.00055	0.116022	0.006137	0	0.000642	0.006779	0.096919	0.013761	0.00055	0.118009	0.082098	0	0.011077	0.093175	0.009763	0	1.46E-06	0.009764	0.023994	104.1516
319.1203	0.00082	0	0	0.00082	0.050278	0	0	0.050278	0.017664	0	0	0.017664	0	0	0	0.017664	0.020109	0	0	0.020109	0	0	0	0.020109	0.05131	0	0	0.05131	0.003024	0	0	0.003024	0.065799	28.50689
1728.24	0.002921	0.006402	0.017772	0.027095	0.007665	0.00013	0.016881	0.024675	0.010706	0.024188	0.086758	0.121652	0.055062	0.006868	0.106164	0.289745	0.015622	0.035295	0.094989	0.145906	0.055062	0.006868	0.106164	0.313999	0.193759	0.351875	1.495462	2.041097	0.016806	0.000108	0.000171	0.017085	0.052432	182.2407
11352.95	0.002882	0.002111	0	0.004993	1.713413	0.075249	0	1.788662	0.062052	0.045451	0	0.107503	0	0	0	0.107503	0.070642	0.051742	0	0.122384	0	0	0	0.122384	0.443885	1.920753	0	2.364638	0.102983	0.004523	0	0.107506	2.448333	1014.155
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
161.1393	0.109022	0.058903	0	0.167925	0.028471	0.004378	0	0.032849	0.001558	0.000842	0	0.002399	0	0	0	0.002399	0.111265	0.060115	0	0.171379	0	0	0	0.171379	0.392763	0.182394	0	0.575157	0	0	0	0	0.172547	18.62525
277.082	0.000342	0.001058	0.003054	0.004454	0.002759	2.17E-05	0.002701	0.005482	0.00124	0.004095	0.01551	0.020845	0.020099	0.002997	0.022564	0.066505	0.001809	0.005975	0.016981	0.024766	0.020099	0.002997	0.022564	0.070426	0.031203	0.031646	0.253206	0.316054	0.002692	1.84E-05	2.83E-05	0.002739	0.00828	29.21795
1087.632	0.000511	0.00054	0	0.001051	0.166833	0.004524	0	0.171357	0.010998	0.01162	0	0.022619	0	0	0	0.022619	0.012521	0.013229	0	0.02575	0	0	0	0.02575	0.062267	0.186207	0	0.248474	0.010027	0.000272	0	0.010299	0.192999	97.15772
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50.76073	0.040628	0.004429	0	0.045056	0.010066	0.000282	0	0.010348	0.00058	6.33E-05	0	0.000644	0	0	0	0.000644	0.041464	0.00452	0	0.045983	0	0	0	0.045983	0.159811	0.011586	0	0.171397	0	0	0	0	0.064076	5.867166
129.2621	0.000355	0.008154	0.000913	0.009422	0.001606	0.000212	0.000692	0.00251	0.001515	0.034854	0.005018	0.041387	0.012803	0.001478	0.009309	0.064976	0.00221	0.050859	0.005494	0.058563	0.012803	0.001478	0.009309	0.082153	0.031404	0.269362	0.098415	0.399181	0.001197	7.44E-05	6.29E-06	0.001278	0.00731	13.63053

233.8891	6.5E-05	7.7E-05	0	0.000142	0.033997	0.002853	0	0.036849	0.001398	0.001658	0	0.003056	0	0	0	0.003056	0.001592	0.001887	0	0.003479	0	0	0	0.003479	0.011046	0.070195	0	0.081242	0.002043	0.000171	0	0.002215	0.045467	20.89322
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120.4014	0.229561	0.043711	0	0.273272	0.021262	0.003283	0	0.024545	0.00328	0.000625	0	0.003905	0	0	0	0.003905	0.234284	0.04461	0	0.278894	0	0	0	0.278894	0.635217	0.135885	0	0.771102	0	0	0	0	0.08248	13.91657
145.4525	0.000191	0	0.000257	0.000449	0.000688	0	0.00045	0.001139	0.00049	0	0.000851	0.001341	0.000835	0.00023	0.000876	0.003281	0.000715	0	0.000931	0.001647	0.000835	0.00023	0.000876	0.003587	0.114169	0	0.053582	0.16775	0.001435	0	3.08E-06	0.001438	0.009575	15.33778
2.683154	1.88E-05	0	0	1.88E-05	0.000423	0	0	0.000423	0.000405	0	0	0.000405	0	0	0	0.000405	0.000461	0	0	0.000461	0	0	0	0.000461	0.000922	0	0	0.000922	2.54E-05	0	0	2.54E-05	0.000893	0.239685
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13.48089	6E-05	0	0	6E-05	0.002748	0	0	0.002748	0.001291	0	0	0.001291	0	0	0	0.001291	0.00147	0	0	0.00147	0	0	0	0.00147	0.002276	0	0	0.002276	0	0	0	0	0.02153	1.558185
6.759567	0.00031	0	7.9E-07	0.000311	0.0004	0	5.98E-05	0.000459	0.001403	0	4.54E-06	0.001408	6.16E-05	7.76E-06	0.00012	0.001598	0.002048	0	4.97E-06	0.002053	6.16E-05	7.76E-06	0.00012	0.002243	0.108234	0	0.003161	0.111395	6.66E-05	0	2.73E-07	6.68E-05	0.000179	0.712788
105594.8	0.039456	0.169317	0	0.208773	15.55455	1.08196	0	16.63651	0.849479	3.645345	0	4.494824	0	0	0	4.494824	0.967068	4.149947	0	5.117015	0	0	0	5.117015	3.158673	53.85373	0	57.01241	0.93489	0.06503	0	0.99992	17.24195	9432.744
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1683.409	0.963045	0.451058	0	1.414103	0.302866	0.040308	0	0.343174	0.013906	0.006451	0	0.020358	0	0	0	0.020358	0.983025	0.460345	0	1.44337	0	0	0	1.44337	7.621041	1.694567	0	9.315609	0	0	0	0	1.138774	194.5764
129227.4	0.569683	0	2.039691	2.609374	1.757672	0	1.662396	3.420069	1.641799	0	7.634821	9.27662	13.1066	2.384091	9.828385	34.59569	2.395709	0	8.359168	10.75488	13.1066	2.384091	9.828385	36.07395	269.6078	0	104.3934	374.0012	1.242589	0	0.034956	1.277545	23.13979	13626.87
59.16117	7.32E-05	0	0	7.32E-05	0.009321	0	0	0.009321	0.001575	0	0	0.001575	0	0	0	0.001575	0.001793	0	0	0.001793	0	0	0	0.001793	0.05012	0	0	0.05012	0.000561	0	0	0.000561	0.000999	5.284844
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3221.08	0.009901	0	0.110076	0.119976	0.011968	0	0.052319	0.064287	0.03247	0	0.468566	0.501035	0.598124	0.109062	0.227717	1.435939	0.047379	0	0.513021	0.5604	0.598124	0.109062	0.227717	1.495304	4.945731	0	3.598603	8.544334	0.030321	0	0.001523	0.031844	0.448758	339.6589
10384.13	0.042735	0	0.157717	0.200452	0.126776	0	0.129068	0.255844	0.125354	0	0.600816	0.72617	1.488659	0.240379	1.094434	3.549643	0.182917	0	0.657818	0.840735	1.488659	0.240379	1.094434	3.664207	20.08945	0	7.985153	28.0746	0.099684	0	0.002973	0.102658	1.596884	1094.993
0.157095	3.2E-07	0	0	3.2E-07	2.48E-05	0	0	2.48E-05	6.89E-06	0	0	6.89E-06	0	0	0	6.89E-06	7.85E-06	0	0	7.85E-06	0	0	0	7.85E-06	7.37E-05	0	0	7.37E-05	1.49E-06	0	0	1.49E-06	1.42E-06	0.014033
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118.7383	0.000361	0	0.004144	0.004505	0.000432	0	0.001964	0.002396	0.001191	0	0.017704	0.018895	0.02444	0.004242	0.009135	0.056711	0.001738	0	0.019383	0.021121	0.02444	0.004242	0.009135	0.058938	0.180759	0	0.135891	0.31665	0.001108	0	6.62E-05	0.001174	0.016351	12.52081
89555.18	0.441098	0	1.571221	2.012319	1.08156	0	1.189958	2.271518	1.330311	0	6.135411	7.465722	9.052264	1.553701	6.766369	24.83806	1.941187	0	6.717502	8.658689	9.052264	1.553701	6.766369	26.03102	183.9489	0	80.2212	264.1701	0.859839	0	0.025505	0.885344	13.33751	9443.481
310.7175	0.000845	0	0	0.000845	0.048954	0	0	0.048954	0.018197	0	0	0.018197	0	0	0	0.018197	0.020717	0	0	0.020717	0	0	0	0.020717	0.191816	0	0	0.191816	0.002944	0	0	0.002944	0.003789	27.75627
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1104.067	0.003338	0	0.038608	0.041946	0.004003	0	0.01828	0.022283	0.011013	0	0.165011	0.176025	0.213009	0.038205	0.079988	0.507227	0.016071	0	0.180667	0.196737	0.213009	0.038205	0.079988	0.52794	1.675396	0	1.267218	2.942614	0.010268	0	0.000647	0.010915	0.151789	116.4225
7484.081	0.00961	0.027175	0.091938	0.128724	0.017697	0.000803	0.188117	0.206617	0.031402	0.090697	0.396368	0.518466	0.723379	0.095201	0.984119	2.321165	0.045822	0.132345	0.433973	0.612139	0.723379	0.095201	0.984119	2.414837	6.737604	1.25673	16.32722	24.32155	0.072492	0.00035	0.001146	0.073988	0.530318	789.187
4349.314	0.02375	0.001219	0	0.024969	0.68092	0.004316	0	0.685236	0.511319	0.026249	0	0.537568	0	0	0	0.537568	0.582103	0.029883	0	0.611986	0	0	0	0.611986	1.175608	0.217564	0	1.393172	0.040952	0.00026	0	0.041212	1.789618	388.5225
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1018.712	0.001044	0.002985	0.010155	0.014184	0.003053	8.89E-05	0.02065	0.023792	0.003342	0.009807	0.043089	0.056238	0.099795	0.012706	0.135354	0.304094	0.004877	0.01431	0.047177	0.066364	0.099795	0.012706	0.135354	0.31422	0.832875	0.160202	2.09262	3.085697	0.009876	5.13E-05	0.000144	0.010071	0.065076	107.4219
2432.715	0.014197	0.000614	0	0.014811	0.379715	0.00356	0	0.383275	0.30566	0.013212	0	0.318872	0	0	0	0.318872	0.347974	0.015041	0	0.363015	0	0	0	0.363015	0.717694	0.109507	0	0.827201	0.022837	0.000214	0	0.023051	0.839061	217.3135
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
909.1585	0.622159	0	0.199987	0.822146	0.158758	0	0.006396	0.165154	3.686115	0	1.374446	5.060561	2.927705	5.914473	6.343728	20.24647	4.622605	0	1.497304	6.119909	2.927705	5.914473	6.343728	21.30582	44.59652	0	12.37765	56.97416	0.008423	0	0.000565	0.008988	0.041573	95.86963
61047.31	0.255014	0	0.923984	1.178999	0.619657	0	0.706507	1.326165	0.774147	0	3.638178	4.412325	5.878301	0.978113	4.358184	15.62692	1.129633	0	3.983347	5.11298	5.878301	0.978113	4.358184	16.32758	106.7343	0	47.07517	153.8095	0.585612	0	0.017903	0.603515	7.493243	6437.363
646.54	0.000477	0	0	0.000477	0.101863	0	0	0.101863	0.010262	0	0	0.010262	0	0	0	0.010262	0.011682	0	0	0.011682	0	0	0	0.011682	0.331398	0	0	0.331398	0.006126	0	0	0.006126	0.006057	57.75516
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
692.0331	0.002053	0	0.024505	0.026557	0.002454	0	0.011555	0.014009	0.006796	0	0.105182	0.111978	0.147922	0.025544	0.056185	0.34163	0.009917	0	0.115161	0.125078	0.147922	0.025544	0.056185	0.35473	1.0344	0	0.807705	1.842105	0.00634	0	0.000502	0.006841	0.093767	72.97403
986.0778	0.001325	0	0.000164	0.001489	0.009254	0	0.000194	0.009448	0.003671	0	0.00055	0.004221	0.095578	0.013393	0.000544	0.113736	0.005357	0	0.000602	0.005959	0.095578	0.013393	0.000544	0.115474	0.074286	0	0.010199	0.084485	0.009747	0	1.44E-06	0.009748	0.023953	103.9807
317.8446	0.000809	0	0	0.000809	0.050077	0	0	0.050077	0.017414	0	0	0.017414	0	0	0	0.017414	0.019824	0	0	0.019824	0	0	0	0.019824	0.050026	0	0	0.050026	0.003012	0	0	0.003012	0.065908	28.39293
1698.104	0.002793	0.006294	0.017109	0.026195	0.007551	0.000127	0.017014	0.024691	0.010369	0.023626	0.083741	0.117736	0.052456	0.006488	0.101706	0.278386	0.01513	0.034474	0.091686	0.141291	0.052456	0.006488	0.101706	0.301941	0.176547	0.34371	1.404143	1.9244	0.016517	0.000105	0.000166	0.016787	0.051615	179.063
11441.46	0.002883	0.002118	0	0.005001	1.727371	0.075236	0	1.802607	0.06207	0.045597	0	0.107667	0	0	0	0.107667	0.070662	0.051909	0	0.12257	0	0	0	0.12257	0.445472	1.927756	0	2.373229	0.103822	0.004522	0	0.108344	2.474589	1022.061
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160.7841	0.109026	0.058335	0	0.16736	0.028431	0.004346	0	0.032777	0.001558	0.000833	0	0.002391	0	0	0	0.002391	0.111269	0.059535	0	0.170804	0	0	0	0.170804	0.392225	0.181731	0	0.573956	0	0	0	0	0.17251	18.58419
270.4197	0.000285	0.001025	0.00288	0.00419	0.002641	2.45E-05	0.002453	0.005119	0.001038	0.003933	0.014647	0.019617	0.018698	0.002774	0.021229	0.062317	0.001515	0.005739	0.016036	0.02329	0.018698	0.002774	0.021229	0.06599	0.028233	0.030393	0.233108	0.291734	0.002629	1.76E-05	2.69E-05	0.002673	0.008112	28.51541
1089.672	0.00048	0.000543	0	0.001024	0.167136	0.004542	0	0.171678	0.010342	0.011699	0	0.022042	0	0	0	0.022042	0.011774	0.013319	0	0.025093	0	0	0	0.025093	0.060246	0.187419	0	0.247666	0.010046	0.000273	0	0.010319	0.193657	97.33999
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50.9277	0.040945	0.004426	0	0.045371	0.010099	0.000283	0	0.010382	0.000585	6.32E-05	0	0.000648	0	0	0	0.000648	0.041788	0.004517	0	0.046304	0	0	0	0.046304	0.160584	0.011733	0	0.172317	0	0	0	0	0.064426	5.886466
113.6272	0.000306	0.007309	0.000793	0.008408	0.001217	0.000189	0.000534	0.00194	0.001305	0.031252	0.004359	0.036916	0.010784	0.001192	0.007937	0.05683	0.001904	0.045603	0.004773	0.05228	0.010784	0.001192	0.007937	0.072194	0.02696	0.241526	0.085592	0.354078	0.001052	6.59E-05	5.55E-06	0.001123	0.006505	11.98185
222.6772	6.15E-05	7.34E-05	0	0.000135	0.032382	0.002701	0	0.035083	0.001324	0.00158	0	0.002904	0	0	0	0.002904	0.001508	0.001798	0	0.003306	0	0	0	0.003306	0.010475	0.066886	0	0.077361	0.001946	0.000162	0	0.002109	0.043534	19.89167
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
114.2255	0.216622	0.041037	0	0.257659	0.020174	0.003112	0	0.023286	0.003095	0.000586	0	0.003681	0	0	0	0.003681	0.221079	0.041881	0	0.26296	0	0	0	0.26296	0.594155	0.13061	0	0.724765	0	0	0	0	0.078677	13.20272
147.7345	0.000193	0	0.00026	0.000453	0.000697	0	0.000454	0.001151	0.000494	0	0.000859	0.001352	0.00086	0.000232	0.000896	0.00334	0.00072	0	0.00094	0.001661	0.00086	0.000232	0.000896	0.003648	0.11581	0	0.054046	0.169856	0.001457	0	3.13E-06	0.001461	0.009746	15.57842
2.684784	1.91E-05	0	0	1.91E-05	0.000423	0	0	0.000423	0.000411	0	0	0.000411	0	0	0	0.000411	0.000467	0	0	0.000467	0	0	0	0.000467	0.000974	0	0	0.000974	2.54E-05	0	0	2.54E-05	0.000893	0.239831
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13.74052	5.96E-05	0	0	5.96E-05	0.002801	0	0	0.002801	0.001283	0	0	0.001283	0	0	0	0.001283	0.00146	0	0	0.00146	0	0	0	0.00146	0.002157	0	0	0.002157	0	0	0	0	0.021981	1.588195

Model Output: OFFROAD2021 (v1.0.3) Emissions Inventory
Region Type: Statewide
Region: California
Calendar Year: 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050
Scenario: All Adopted Rules - Exhaust
Vehicle Classification: OFFROAD2021 Equipment Types
Units: tons/day for Emissions, gallons/year for Fuel, hours/year for Activity, Horsepower-hours/year for Horsepower-hours

Region	Calendar Y	Vehicle Cat	Model Yea	Horsepowe	Fuel	HC_tpd	ROG_tpd	TOG_tpd	CO_tpd	NOx_tpd	CO2_tpd	PM10_tpd	PM2.5_tpd	SOx_tpd	NH3_tpd	Fuel Consu	Total_Activ	Total_Popu	Horsepower_Hours_hhpy
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.07761	0.093909	0.111759	0.460286	1.132357	74.47712	0.047989	0.04415	0.006188	0.000608	2416328	420068.8	1265.819	92847821
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.320869	0.388251	0.462051	2.607886	4.116558	176.3284	0.213555	0.196471	0.014613	0.001439	5720781	1659298	3812.204	3.83E+08
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.697907	0.844467	1.004986	5.523112	9.004673	436.1535	0.464122	0.426992	0.036172	0.00356	14150521	2996601	7022.222	6.38E+08
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.945008	1.14346	1.360812	5.053674	12.00584	784.1666	0.563342	0.518275	0.065117	0.0064	25441422	8122057	13656.1	1.28E+09
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.505521	0.61168	0.72795	3.070142	6.46099	294.8717	0.344064	0.316539	0.024446	0.002407	9566787	2400280	4415.618	4.5E+08
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.004238	0.005097	0.006092	0.01203	0.017071	2.57E-05	0.001362	0.001029	3.13E-06	3.12E-07	1239.605	0	87.90519	0
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.004211	0.005065	0.006053	0.013861	0.024434	2.9E-05	0.001857	0.001403	3.36E-06	3.34E-07	1329.017	0	556.03	0
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.004297	0.005122	0.006187	0.012912	0.012519	0.838582	0.001366	0.001224	9.84E-05	7.22E-06	28702.15	19866.95	50.65144	655609.4
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.000478	0.000575	0.000688	0.00132	0.001803	2.82E-06	0.000145	0.00011	3.49E-07	3.47E-08	138.0259	0	23.20976	0
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.003116	0.003748	0.00448	0.008784	0.012792	2.04E-05	0.000995	0.000752	2.3E-06	2.28E-07	908.4899	0	36.88	0
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.007638	0.009187	0.01098	0.026625	0.046948	5.95E-05	0.003499	0.002643	6.29E-06	6.25E-07	2486.401	0	340.4002	0
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.000893	0.001074	0.001283	0.002463	0.003362	5.26E-06	0.000269	0.000204	6.51E-07	6.47E-08	257.5132	0	14.27	0
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.001519	0.001827	0.002183	0.004213	0.005848	9.18E-06	0.000467	0.000353	1.11E-06	1.1E-07	439.225	0	36.45254	0
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.002585	0.003109	0.003715	0.009236	0.017083	2.01E-05	0.001278	0.000966	2.16E-06	2.14E-07	852.9101	0	321.99	0
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.019996	0.02405	0.028744	0.063468	0.103311	0.00014	0.007911	0.005977	1.57E-05	1.56E-06	6191.21	0	994.5975	0
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.000549	0.00066	0.000789	0.001525	0.002136	3.35E-06	0.000171	0.000129	4.02E-07	3.99E-08	158.8658	0	8.604266	0
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.036087	0.043385	0.05188	0.138176	0.244961	0.370984	0.01772	0.013471	7.34E-05	6.08E-06	24190.92	7018.95	2828.193	259701.2
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.183914	0.221208	0.264379	0.510652	0.710019	0.001118	0.05625	0.0425	0.000135	1.34E-05	53215.89	0	4037.732	0
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.016199	0.019484	0.023287	0.044736	0.061265	9.58E-05	0.004927	0.003723	1.18E-05	1.17E-06	4674.877	0	266.4917	0
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.019672	0.023661	0.028279	0.058793	0.08975	0.000135	0.006878	0.005197	1.49E-05	1.48E-06	5905.169	0	457.4707	0
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.292306	0.35369	0.420921	1.712616	2.877981	165.6389	0.165177	0.151963	0.01373	0.001352	5373972	1902924	3106.786	2.35E+08
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	1.432076	1.732812	2.06219	13.79477	19.75005	995.559	0.926745	0.852606	0.082609	0.008126	32299815	4050019	3251.802	1.63E+09
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.350503	0.424109	0.504725	2.47705	4.236792	222.1023	0.21814	0.200689	0.018421	0.001813	7205865	1935543	4703.193	3.33E+08
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.071769	0.086841	0.103348	0.357019	0.883989	52.30395	0.045891	0.04222	0.004341	0.000427	1696944	608609.3	1670.143	78821433
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.045091	0.05456	0.064931	0.249338	0.528567	30.4406	0.028253	0.025993	0.002526	0.000248	987611.8	406238.2	946.2917	53455047
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.247929	0.299994	0.357018	1.121715	2.238057	135.6266	0.138639	0.127548	0.01124	0.001107	4400256	2758120	8698.51	2.21E+08
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.207626	0.251227	0.298981	1.000289	2.178813	147.2603	0.150206	0.138189	0.01222	0.001202	4777699	2282668	8771.018	2.29E+08
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.167348	0.202491	0.240981	1.761565	2.087675	86.83739	0.11142	0.102506	0.007194	0.000709	2817343	550478.8	775.4676	1.37E+08
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	1.905909	2.30615	2.744509	14.18684	24.48054	1197.714	1.288236	1.185177	0.099333	0.009776	38858512	10284676	11367.79	2.08E+09
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	1.231253	1.489816	1.773004	13.39917	16.90123	779.508	0.807079	0.742512	0.064651	0.006362	25290280	2757446	6384.397	1.01E+09
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.235732	0.285236	0.339455	1.055714	2.034382	142.7984	0.156918	0.144365	0.011841	0.001166	4632937	3651241	11373.94	2.39E+08
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.018227	0.022055	0.026247	0.1132	0.266081	16.40925	0.011115	0.010226	0.001363	0.000134	532379.9	129506.4	522.3039	34098270
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	1.88648	2.282641	2.716532	8.92637	19.45971	1094.038	1.310448	1.205612	0.090695	0.008929	35494855	18925157	34303.69	1.85E+09
Statewide	2000	Constructic	Aggregate	Aggregate	Diesel	0.089641	0.108466	0.129084	0.388673	0.694074	45.08143	0.045551	0.041907	0.003734	0.000368	1462617	689103.5	2060.95	54172752
Statewide	2000	Industrial -	Aggregate	Aggregate	Diesel	0.120666	0.146006	0.173759	0.520974	0.911739	69.38271	0.070685	0.06503	0.00573	0.000566	2251046	2167297	7729.512	1.36E+08
Statewide	2000	Industrial -	Aggregate	Aggregate	Diesel	0.611371	0.739759	0.880374	2.674289	5.931071	291.9599	0.414098	0.38097	0.024084	0.002383	9472318	10131860	14497.45	9.07E+08
Statewide	2000	Industrial -	Aggregate	Aggregate	Diesel	0.01293	0.015552	0.018587	0.052911	0.079747	0.000114	0.004902	0.003704	1.17E-05	1.16E-06	4608.858	0	1180.026	0
Statewide	2000	Industrial -	Aggregate	Aggregate	Diesel	0.011125	0.01338	0.015992	0.056109	0.086373	0.000132	0.005063	0.003825	1.14E-05	1.13E-06	4505.569	0	341.3333	0
Statewide	2000	Industrial -	Aggregate	Aggregate	Diesel	0.004553	0.005476	0.006545	0.022819	0.035622	5.25E-05	0.002045	0.001545	4.64E-06	4.62E-07	1836.56	0	217.1159	0
Statewide	2000	Industrial -	Aggregate	Aggregate	Diesel	0.286163	0.346257	0.412075	1.429123	2.34241	140.99	0.150522	0.13848	0.011633	0.001151	4574265	2858355	3691.377	2.52E+08
Statewide	2000	Industrial -	Aggregate	Aggregate	Diesel	0.130925	0.158419	0.188532	0.905747	1.592616	82.66279	0.087284	0.080302	0.00683	0.000675	2681903	781272.3	1110.364	1.31E+08
Statewide	2000	Light Comn	Aggregate	Aggregate	Diesel	0.118133	0.140665	0.170097	0.353677	0.306061	25.18884	0.036147	0.033855	0.002873	0.000218	868257	759054	1084.913	28084998
Statewide	2000	Light Comn	Aggregate	Aggregate	Diesel	0.358887	0.428721	0.516481	1.183875	1.453285	118.338	0.114138	0.11959	0.012032	0.001003	3990254	1527897	13330.43	50420611
Statewide	2000	Light Comn	Aggregate	Aggregate	Diesel	0.001623	0.00194	0.002335	0.005592	0.00787	0.612361	0.000547	0.00059	6.15E-05	5.06E-06	20132.28	15264.3	397.0479	580043.4
Statewide	2000	Light Comn	Aggregate	Aggregate	Diesel	0.22001	0.262808	0.316624	0.680045	0.823518	65.35391	0.069684	0.073119	0.006719	0.000556	2209980	797525	6941.191	29508425

Statewide	2000	Light Comn	Aggregate	Aggregate	Diesel	0.546094	0.650786	0.786201	1.650155	1.592356	130.8378	0.169088	0.163111	0.014473	0.001127	4478788	2992956	7906.851	1.38E+08
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.081408	0.098503	0.117227	0.480016	1.192419	79.33369	0.050501	0.046461	0.006589	0.000648	2573894	447004.7	1318.171	98800667
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.327309	0.396043	0.471324	2.654426	4.239311	187.6726	0.217237	0.199858	0.015551	0.001532	6088832	1765751	3969.87	4.08E+08
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.705177	0.853264	1.015455	5.394251	9.169578	463.558	0.468571	0.431086	0.038439	0.003783	15039628	3188659	7312.649	6.78E+08
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.979907	1.185688	1.411066	5.001277	12.45128	834.5046	0.58149	0.534971	0.069276	0.006811	27074582	8643762	14220.89	1.36E+09
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.516416	0.624863	0.743639	3.116596	6.654926	313.7682	0.350716	0.322658	0.026007	0.002561	10179864	2554041	4598.241	4.79E+08
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.003839	0.004618	0.005519	0.011175	0.01644	2.56E-05	0.00126	0.000952	2.88E-06	2.86E-07	1137.21	0	87.85563	0
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.003955	0.004757	0.005686	0.013479	0.023639	2.96E-05	0.001763	0.001332	3.22E-06	3.2E-07	1271.829	0	566.74	0
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.004251	0.005067	0.00612	0.012859	0.012578	0.855004	0.001364	0.001224	0.0001	7.34E-06	29195.09	20253.85	51.94073	668377.1
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.000453	0.000545	0.000651	0.001269	0.001814	2.88E-06	0.000141	0.000106	3.33E-07	3.31E-08	131.6227	0	23.74577	0
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.002596	0.003122	0.003732	0.007669	0.012538	2.08E-05	0.00088	0.000665	1.96E-06	1.95E-07	774.8123	0	37.64	0
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.006323	0.007606	0.00909	0.024361	0.042085	6.08E-05	0.002923	0.002209	5.5E-06	5.47E-07	2176.911	0	347.8	0
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.000844	0.001015	0.001213	0.002363	0.003363	5.34E-06	0.000261	0.000197	6.2E-07	6.16E-08	245.184	0	14.49	0
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.001386	0.001667	0.001992	0.003935	0.005829	9.37E-06	0.000441	0.000333	1.03E-06	1.02E-07	405.4829	0	37.20946	0
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.002245	0.0027	0.003227	0.008688	0.015653	2.04E-05	0.001119	0.000845	1.96E-06	1.95E-07	774.752	0	328.25	0
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.017169	0.020651	0.024681	0.058144	0.095592	0.000142	0.006873	0.005193	1.39E-05	1.38E-06	5502.598	0	1010.772	0
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.000442	0.000531	0.000635	0.001268	0.001935	3.14E-06	0.000144	0.000109	3.29E-07	3.27E-08	129.9105	0	8.043752	0
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.026257	0.031562	0.037749	0.121206	0.202068	0.378249	0.013036	0.009932	6.84E-05	5.56E-06	22120.87	7186.85	2883.702	265913.5
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.165557	0.199129	0.237991	0.472099	0.705661	0.001141	0.052497	0.039665	0.000123	1.22E-05	48541.1	0	4121.579	0
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.015142	0.018212	0.021766	0.04256	0.06131	9.76E-05	0.00474	0.003582	1.11E-05	1.11E-06	4407.821	0	271.5612	0
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.015242	0.018333	0.021911	0.049108	0.080873	0.000133	0.005562	0.004202	1.2E-05	1.2E-06	4757.34	0	451.9606	0
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.302578	0.36612	0.435713	1.713626	2.982936	176.2665	0.170957	0.15728	0.014607	0.001439	5718773	2024915	3235.278	2.5E+08
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	1.40777	1.703401	2.027188	12.11942	19.86525	1060.054	0.903139	0.830888	0.087956	0.008652	34392277	4309560	3386.292	1.74E+09
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.359929	0.435514	0.518297	2.506869	4.368852	236.268	0.224305	0.206361	0.019591	0.001928	7665456	2059566	4897.709	3.55E+08
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.075217	0.091012	0.108312	0.372631	0.920554	55.6742	0.048357	0.044488	0.004619	0.000454	1806288	647581.9	1739.218	83870799
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.047054	0.056936	0.067758	0.255495	0.550324	32.38968	0.029607	0.027239	0.002686	0.000264	1050848	432264.9	985.4288	56903055
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.260425	0.315115	0.375013	1.174934	2.333221	144.3148	0.146458	0.134741	0.011956	0.001178	4682134	2934870	9058.266	2.36E+08
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.221925	0.26853	0.319573	1.066367	2.29901	156.7162	0.162008	0.149047	0.012999	0.001279	5084484	2427850	9133.773	2.44E+08
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.171912	0.208013	0.247553	1.800011	2.15807	92.47571	0.11448	0.105321	0.00766	0.000755	3000273	585764.7	807.5397	1.46E+08
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	1.923992	2.32803	2.770548	13.74864	25.02562	1275.613	1.299928	1.195934	0.105779	0.010411	41385847	10943571	11837.94	2.22E+09
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	1.261038	1.525856	1.815894	13.52549	17.45566	829.2312	0.825588	0.759541	0.068761	0.006768	26903493	2934068	6648.445	1.08E+09
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.250567	0.303186	0.360817	1.121596	2.116733	151.9852	0.168907	0.155394	0.012598	0.00124	4930991	3885424	11844.34	2.54E+08
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.018734	0.022668	0.026977	0.112825	0.276126	17.46387	0.011451	0.010535	0.00145	0.000143	566596.1	137819.4	543.9055	36330995
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	1.979708	2.395447	2.850779	9.300333	20.23431	1164.332	1.389507	1.278347	0.096491	0.009503	37775465	20138759	35722.43	1.97E+09
Statewide	2001	Constructic	Aggregate	Aggregate	Diesel	0.094484	0.114326	0.136058	0.406403	0.724549	47.95546	0.047974	0.044136	0.003971	0.000391	1555862	733209.7	2146.187	57642455
Statewide	2001	Industrial -	Aggregate	Aggregate	Diesel	0.124103	0.150165	0.178709	0.539871	0.919584	73.83593	0.074985	0.068986	0.006111	0.000603	2395525	2306401	8049.935	1.45E+08
Statewide	2001	Industrial -	Aggregate	Aggregate	Diesel	0.635059	0.768421	0.914485	2.784044	6.139362	310.6989	0.434636	0.399865	0.025683	0.002536	10080284	10782157	15098.43	9.65E+08
Statewide	2001	Industrial -	Aggregate	Aggregate	Diesel	0.012111	0.014566	0.017409	0.049902	0.077117	0.000114	0.004704	0.003554	1.1E-05	1.09E-06	4334.523	0	1190.312	0
Statewide	2001	Industrial -	Aggregate	Aggregate	Diesel	0.010074	0.012116	0.014481	0.048075	0.080636	0.000134	0.004675	0.003532	9.97E-06	9.91E-07	3941.204	0	346.0786	0
Statewide	2001	Industrial -	Aggregate	Aggregate	Diesel	0.004038	0.004857	0.005805	0.019745	0.032227	5.26E-05	0.001888	0.001427	4.06E-06	4.03E-07	1603.963	0	217.1481	0
Statewide	2001	Industrial -	Aggregate	Aggregate	Diesel	0.300547	0.363662	0.432788	1.473962	2.441921	150.0392	0.157943	0.145307	0.012404	0.001225	4867857	3041814	3844.401	2.68E+08
Statewide	2001	Industrial -	Aggregate	Aggregate	Diesel	0.133603	0.16166	0.192389	0.877074	1.62745	87.96837	0.089534	0.082372	0.007284	0.000718	2854037	831417.1	1156.394	1.39E+08
Statewide	2001	Light Comn	Aggregate	Aggregate	Diesel	0.11774	0.140194	0.169531	0.353394	0.305833	25.49399	0.036213	0.033902	0.002908	0.000221	878196.4	768284.9	1098.113	28426539
Statewide	2001	Light Comn	Aggregate	Aggregate	Diesel	0.353739	0.422535	0.50908	1.174956	1.447377	119.7722	0.113517	0.118683	0.012174	0.001015	4035757	1546363	13492.03	51029967
Statewide	2001	Light Comn	Aggregate	Aggregate	Diesel	0.001597	0.001909	0.002298	0.005553	0.007811	0.61972	0.000543	0.000584	6.22E-05	5.12E-06	20343.24	15454.1	401.8276	587255.8
Statewide	2001	Light Comn	Aggregate	Aggregate	Diesel	0.217273	0.259518	0.312688	0.675961	0.819508	66.14564	0.06932	0.072585	0.006798	0.000562	2235139	807292.4	7025.144	29869819
Statewide	2001	Light Comn	Aggregate	Aggregate	Diesel	0.542946	0.64701	0.781674	1.646303	1.589447	132.4213	0.169096	0.162955	0.014646	0.001139	4530006	3029255	8002.386	1.39E+08
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.078505	0.094991	0.113047	0.457426	1.163221	78.8853	0.048907	0.044994	0.006537	0.000644	2559347	443561.5	1311.569	98089574
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.305121	0.369196	0.439374	2.454861	4.014365	186.2592	0.201789	0.185646	0.015403	0.00152	6042975	1752094	3949.987	4.05E+08
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.649566	0.785974	0.935375	4.68975	8.572985	460.153	0.431412	0.396899	0.038082	0.003756	14929157	3164132	7276.024	6.73E+08
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.937902	1.134861	1.350578	4.610146	11.98551	827.9548	0.554774	0.510392	0.068583	0.006758	26862081	8577163	14149.66	1.35E+09
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.480267	0.581123	0.691585	2.886477	6.273522	311.4	0.324427	0.298473	0.02576	0.002542	10103031	2534477	4575.211	4.75E+08
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.003444	0.004143	0.004951	0.010324	0.015827	2.56E-05	0.001157	0.000874	2.62E-06	2.6E-07	1035.534	0	87.77215	0
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.0037	0.00445	0.005319	0.0131	0.022823	3.02E-05	0.00166	0.001254	3.07E-06	3.05E-07	1214.855	0	577.7199	0
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.004205	0.00501	0.006054	0.012805	0.012622	0.871422	0.001361	0.001224	0.000102	7.48E-06	29741.48	20691.85	53.06525	682831.1

Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.000427	0.000514	0.000614	0.001219	0.001826	2.95E-06	0.000137	0.000103	3.17E-08	3.15E-08	125.3146	0	24.27832	0
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.002099	0.002524	0.003017	0.0066	0.012271	2.11E-05	0.000769	0.000581	1.64E-06	1.63E-07	646.9155	0	38.29	0
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.00515	0.006195	0.007404	0.022376	0.037876	6.21E-05	0.002415	0.001825	4.81E-06	4.78E-07	1902.62	0	355.5849	0
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.000798	0.00096	0.001147	0.00227	0.003371	5.43E-06	0.000253	0.000191	5.91E-07	5.87E-08	233.6678	0	14.74	0
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.001248	0.001501	0.001795	0.003645	0.005787	9.53E-06	0.000412	0.000312	9.37E-07	9.31E-08	370.3878	0	37.83001	0
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.001922	0.002312	0.002763	0.008172	0.014298	2.08E-05	0.000966	0.00073	1.77E-06	1.76E-07	700.8188	0	334.53	0
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.014494	0.017434	0.020836	0.053079	0.088545	0.000144	0.005907	0.004463	1.23E-05	1.22E-06	4849.46	0	1026.076	0
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.000345	0.000415	0.000496	0.001038	0.001764	2.96E-06	0.000119	9.02E-05	2.63E-07	2.61E-08	103.9047	0	7.599763	0
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.024269	0.02917	0.034891	0.118862	0.194703	0.385513	0.012101	0.009226	6.82E-05	5.53E-06	21983.27	7332.85	2939.055	271315.5
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.147685	0.177633	0.2123	0.4348	0.702534	0.001166	0.048821	0.036887	0.000111	1.11E-05	44001.84	0	4212.45	0
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.013991	0.016828	0.020112	0.040177	0.061273	9.95E-05	0.004532	0.003424	1.04E-05	1.03E-06	4116.497	0	276.6273	0
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.011494	0.013825	0.016523	0.040843	0.076147	0.000132	0.00461	0.003483	9.57E-06	9.51E-07	3782.629	0	451.2779	0
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.29104	0.352159	0.419098	1.597256	2.883388	174.834	0.165041	0.151838	0.014457	0.001427	5672296	2009322	3219.074	2.48E+08
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	1.333926	1.614051	1.920854	10.99212	19.13789	1051.63	0.852021	0.78386	0.087072	0.008583	34118976	4276342	3369.332	1.72E+09
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.338072	0.409067	0.486824	2.285462	4.141539	234.3779	0.210919	0.194045	0.019395	0.001913	7604133	2043716	4873.179	3.52E+08
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.071993	0.087111	0.103669	0.34978	0.879438	55.21801	0.046554	0.04283	0.004571	0.000451	1791488	642621.6	1730.507	83245941
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.045364	0.05489	0.065324	0.242083	0.530448	32.14137	0.028676	0.026382	0.00266	0.000262	1042791	428903.1	980.4933	56470377
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.253124	0.306281	0.364499	1.140344	2.24262	143.2322	0.143422	0.131948	0.01184	0.001169	4647012	2912296	9012.898	2.34E+08
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.220443	0.266736	0.317438	1.057851	2.249157	155.5243	0.162631	0.149621	0.012871	0.001269	5045814	2409287	9088.027	2.42E+08
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.157641	0.190746	0.227003	1.572872	2.006331	91.83601	0.104774	0.096392	0.007593	0.00075	2979518	581257	803.4952	1.45E+08
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	1.795363	2.172389	2.585323	12.18671	23.72714	1267.027	1.213615	1.116526	0.104856	0.010341	41107304	10859644	11778.65	2.2E+09
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	1.193436	1.444057	1.718547	12.58749	16.71922	822.734	0.779717	0.717339	0.06808	0.006715	26692698	2911616	6615.146	1.07E+09
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.247817	0.299858	0.356856	1.109598	2.054194	150.8082	0.169339	0.155792	0.012471	0.001231	4892807	3854224	11785.02	2.52E+08
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.017607	0.021305	0.025355	0.104527	0.263487	17.28862	0.010771	0.00991	0.001433	0.000141	560910.1	136750.4	541.1814	35985210
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	1.934887	2.341213	2.786237	9.021089	19.57744	1154.953	1.37238	1.262589	0.0955	0.009427	37471191	19983500	35543.52	1.95E+09
Statewide	2002	Constructic	Aggregate	Aggregate	Diesel	0.092389	0.11179	0.13304	0.39441	0.703853	47.56747	0.047038	0.043275	0.00393	0.000388	1543274	727575.7	2135.438	57163765
Statewide	2002	Industrial -	Aggregate	Aggregate	Diesel	0.120516	0.145825	0.173544	0.526603	0.877802	73.26586	0.074583	0.068617	0.006062	0.000598	2377030	2288594	8009.356	1.44E+08
Statewide	2002	Industrial -	Aggregate	Aggregate	Diesel	0.61178	0.740254	0.880963	2.691179	5.882248	308.3001	0.42374	0.389841	0.025479	0.002516	10002456	10698910	15022.32	9.58E+08
Statewide	2002	Industrial -	Aggregate	Aggregate	Diesel	0.011406	0.013719	0.016397	0.047	0.074516	0.000115	0.004527	0.00342	1.03E-05	1.03E-06	4082.692	0	1197.726	0
Statewide	2002	Industrial -	Aggregate	Aggregate	Diesel	0.009393	0.011298	0.013503	0.0417	0.077634	0.000135	0.00435	0.003287	8.89E-06	8.84E-07	3516.009	0	347.5473	0
Statewide	2002	Industrial -	Aggregate	Aggregate	Diesel	0.00363	0.004366	0.005218	0.016786	0.029858	5.15E-05	0.001713	0.001294	3.52E-06	3.5E-07	1392.883	0	212.1993	0
Statewide	2002	Industrial -	Aggregate	Aggregate	Diesel	0.290555	0.351571	0.418399	1.364918	2.353161	148.8808	0.152688	0.140473	0.012305	0.001215	4830274	3018329	3825.022	2.66E+08
Statewide	2002	Industrial -	Aggregate	Aggregate	Diesel	0.127107	0.153799	0.183034	0.793964	1.553093	87.28918	0.085289	0.078465	0.007226	0.000712	2832001	824997.9	1150.564	1.38E+08
Statewide	2002	Light Comn	Aggregate	Aggregate	Diesel	0.117371	0.139753	0.169001	0.353181	0.305709	25.79831	0.036288	0.033959	0.002943	0.000223	888090.3	777336.9	1111.103	28761463
Statewide	2002	Light Comn	Aggregate	Aggregate	Diesel	0.348743	0.416531	0.501897	1.166276	1.441747	121.1961	0.112929	0.117814	0.012315	0.001026	4081084	1564813	13652.34	51638842
Statewide	2002	Light Comn	Aggregate	Aggregate	Diesel	0.001572	0.00188	0.002263	0.005516	0.007754	0.627022	0.000539	0.000578	6.29E-05	5.16E-06	20538.57	15684.05	406.5872	595993.9
Statewide	2002	Light Comn	Aggregate	Aggregate	Diesel	0.214589	0.256294	0.30883	0.671989	0.815646	66.93014	0.068969	0.072065	0.006877	0.000568	2260184	816837.2	7108.578	30222975
Statewide	2002	Light Comn	Aggregate	Aggregate	Diesel	0.539902	0.643358	0.777297	1.642725	1.586922	133.9956	0.169141	0.162835	0.014819	0.001152	4580910	3065255	8097.542	1.41E+08
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.078668	0.095189	0.113283	0.460926	1.175754	81.17297	0.049349	0.045401	0.006727	0.000663	2633568	456381	1336.1	1.01E+08
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.289691	0.350526	0.417154	2.245832	3.893445	191.659	0.190613	0.175364	0.015856	0.001564	6218165	1802772	4023.865	4.17E+08
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.62362	0.75458	0.898012	4.317809	8.373909	472.938	0.414955	0.381759	0.03915	0.00386	15343953	3255672	7412.109	6.92E+08
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.920787	1.114152	1.325933	4.426439	11.90784	852.3447	0.546886	0.503135	0.070613	0.006957	27653385	8825240	14414.31	1.39E+09
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.455203	0.550796	0.655492	2.746502	6.074767	320.3173	0.305851	0.281383	0.026507	0.002614	10392342	2607759	4660.782	4.9E+08
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.003047	0.003665	0.004381	0.00945	0.015348	2.55E-05	0.001063	0.000803	2.36E-06	2.34E-07	932.3654	0	87.54844	0
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.003446	0.004145	0.004954	0.012725	0.021999	3.07E-05	0.001555	0.001175	2.93E-06	2.91E-07	1158.177	0	588.6599	0
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.004159	0.004955	0.005988	0.012751	0.012681	0.887841	0.001358	0.001224	0.000104	7.62E-06	30296.47	21067.8	54.18821	695237.4
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.000399	0.00048	0.000574	0.001162	0.001832	3.01E-06	0.000132	9.95E-05	2.99E-07	2.97E-08	118.214	0	24.77097	0
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.001663	0.002	0.002391	0.005671	0.012078	2.15E-05	0.000672	0.000508	1.35E-06	1.35E-07	535.2179	0	39.01	0
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.004818	0.005795	0.006926	0.021996	0.037372	6.36E-05	0.002301	0.001738	4.64E-06	4.61E-07	1834.217	0	363.9634	0
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.000755	0.000908	0.001085	0.002183	0.003385	5.53E-06	0.000246	0.000186	5.64E-07	5.6E-08	222.886	0	15.01	0
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.00112	0.001347	0.00161	0.003376	0.005756	9.69E-06	0.000386	0.000292	8.54E-07	8.49E-08	337.7241	0	38.46748	0
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.00164	0.001972	0.002357	0.007732	0.013125	2.12E-05	0.000832	0.000629	1.61E-06	1.6E-07	636.7887	0	340.83	0
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.012853	0.015459	0.018476	0.049917	0.086263	0.000146	0.00544	0.00411	1.12E-05	1.12E-06	4445.995	0	1040.808	0
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.000282	0.00034	0.000406	0.000898	0.001703	2.95E-06	0.000105	7.92E-05	2.21E-07	2.2E-08	87.51196	0	7.568538	0
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.024133	0.029007	0.034696	0.119976	0.195735	0.392776	0.012051	0.00919	6.91E-05	5.6E-06	22284.42	7471.55	2994.385	276447.4

Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.131256	0.157872	0.188682	0.400619	0.700216	0.00119	0.045452	0.034342	0.000101	1E-05	39834.47	0	4300.167	0
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.012813	0.015411	0.018419	0.037737	0.06117	0.000101	0.004295	0.003245	9.66E-06	9.6E-07	3818.289	0	281.7759	0
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.009633	0.011586	0.013847	0.036862	0.074773	0.000133	0.00418	0.003158	8.36E-06	8.31E-07	3304.917	0	456.0421	0
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.288348	0.348902	0.415222	1.512081	2.859186	179.7961	0.163762	0.150661	0.01487	0.001467	5833286	2067450	3279.281	2.56E+08
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	1.308588	1.583392	1.884367	10.38427	19.09532	1081.544	0.833309	0.766644	0.089563	0.008827	35089500	4400035	3432.349	1.77E+09
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.331349	0.400933	0.477143	2.186301	4.091058	241.0843	0.207413	0.19082	0.019954	0.001968	7821715	2102858	4964.323	3.62E+08
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.070542	0.085356	0.101581	0.340695	0.864511	56.80431	0.046112	0.042423	0.004704	0.000464	1842953	661233.2	1762.873	85646059
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.044202	0.053485	0.063651	0.221662	0.51817	33.06534	0.02805	0.025806	0.002737	0.00027	1072769	441334.2	998.8317	58081528
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.252477	0.305497	0.363566	1.140352	2.226934	147.4055	0.144756	0.133176	0.012187	0.001203	4782409	2996559	9181.468	2.41E+08
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.226836	0.274471	0.326644	1.088646	2.287087	160.0151	0.16904	0.155517	0.013242	0.001306	5191514	2479585	9258.002	2.49E+08
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.156641	0.189536	0.225564	1.535096	2.009319	94.48926	0.104217	0.09588	0.007813	0.000771	3065600	598057.3	818.5231	1.49E+08
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	1.741051	2.106672	2.507114	11.48133	23.38859	1304.006	1.180393	1.085961	0.107942	0.010643	42307055	11173683	11998.95	2.27E+09
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	1.142924	1.382938	1.645811	11.78741	16.34865	846.3597	0.745592	0.685945	0.070056	0.006908	27459207	2995799	6738.871	1.1E+09
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.25527	0.308876	0.367589	1.141705	2.081376	155.1065	0.176318	0.162213	0.012826	0.001266	5032260	3966981	12005.44	2.6E+08
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.017134	0.020732	0.024673	0.096421	0.259473	17.77817	0.010464	0.009627	0.001473	0.000145	576793.1	140683.8	551.3032	37043789
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	1.926526	2.331096	2.774197	8.978446	19.31019	1187.919	1.386489	1.27557	0.098241	0.009696	38540735	20560797	36208.3	2.01E+09
Statewide	2003	Constructic	Aggregate	Aggregate	Diesel	0.092592	0.112037	0.133333	0.391866	0.702186	48.93699	0.047339	0.043552	0.004044	0.000399	1587707	748590.8	2175.378	58841379
Statewide	2003	Industrial -	Aggregate	Aggregate	Diesel	0.124676	0.150858	0.179534	0.543612	0.891939	75.389	0.077712	0.071495	0.006235	0.000615	2445913	2354914	8159.576	1.48E+08
Statewide	2003	Industrial -	Aggregate	Aggregate	Diesel	0.610336	0.738507	0.878884	2.694773	5.817301	317.2342	0.428259	0.393998	0.026214	0.002589	10292313	11008949	15304.07	9.85E+08
Statewide	2003	Industrial -	Aggregate	Aggregate	Diesel	0.0107	0.01287	0.015381	0.044323	0.072209	0.000116	0.00436	0.003294	9.72E-06	9.66E-07	3842.015	0	1205.776	0
Statewide	2003	Industrial -	Aggregate	Aggregate	Diesel	0.008966	0.010784	0.012889	0.037353	0.07584	0.000135	0.004124	0.003116	8.17E-06	8.12E-07	3231.485	0	347.3891	0
Statewide	2003	Industrial -	Aggregate	Aggregate	Diesel	0.003393	0.004081	0.004877	0.015117	0.028454	5E-05	0.001601	0.001209	3.22E-06	3.2E-07	1272.85	0	205.9209	0
Statewide	2003	Industrial -	Aggregate	Aggregate	Diesel	0.288414	0.348981	0.415316	1.332496	2.340481	153.1952	0.152258	0.140077	0.012661	0.00125	4970248	3105796	3896.762	2.74E+08
Statewide	2003	Industrial -	Aggregate	Aggregate	Diesel	0.124867	0.151089	0.179808	0.729371	1.530491	89.81869	0.084146	0.077415	0.007435	0.000733	2914069	848905.1	1172.144	1.42E+08
Statewide	2003	Light Comn	Aggregate	Aggregate	Diesel	0.117073	0.139395	0.168571	0.353173	0.305915	26.12682	0.036391	0.034042	0.00298	0.000226	898821.6	787148.1	1125.412	29124478
Statewide	2003	Light Comn	Aggregate	Aggregate	Diesel	0.344068	0.410912	0.495176	1.15849	1.437493	122.7299	0.112445	0.117056	0.012468	0.001039	4130067	1584611	13825.13	52292163
Statewide	2003	Light Comn	Aggregate	Aggregate	Diesel	0.001549	0.001852	0.002229	0.005482	0.007704	0.634881	0.000535	0.000573	6.37E-05	5.22E-06	20764.68	15881.15	411.6769	603483.7
Statewide	2003	Light Comn	Aggregate	Aggregate	Diesel	0.212077	0.253274	0.305218	0.668553	0.812607	67.77985	0.068675	0.071606	0.006962	0.000575	2287374	827181.3	7199.041	30605706
Statewide	2003	Light Comn	Aggregate	Aggregate	Diesel	0.537195	0.640108	0.773404	1.640192	1.586002	135.6923	0.169317	0.16284	0.015006	0.001166	4635966	3104099	8199.867	1.43E+08
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.078282	0.094721	0.112726	0.463159	1.201978	86.77657	0.049536	0.045573	0.007196	0.000708	2815370	487102.8	1393.552	1.08E+08
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.285371	0.345299	0.410934	2.149111	3.912776	204.5589	0.187579	0.172573	0.016935	0.00167	6636688	1924075	4196.891	4.45E+08
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.603485	0.730217	0.869019	4.083818	8.338391	504.9819	0.405113	0.372704	0.041834	0.004122	16383583	3474667	7730.83	7.4E+08
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.892632	1.080084	1.28539	4.328773	12.00965	909.7897	0.538547	0.495463	0.075423	0.007426	29517126	9419132	15034.12	1.49E+09
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.429254	0.519397	0.618126	2.607221	5.936889	342.1086	0.288286	0.265223	0.028336	0.002792	11099335	2783170	4861.196	5.24E+08
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.002678	0.003221	0.00385	0.008638	0.014971	2.54E-05	0.000977	0.000738	2.12E-06	2.1E-07	836.4071	0	87.53415	0
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.003201	0.003851	0.004602	0.012366	0.021212	3.13E-05	0.001454	0.001098	2.79E-06	2.77E-07	1103.814	0	599.54	0
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.004023	0.004793	0.005793	0.012576	0.012678	0.904259	0.001337	0.001208	0.000106	7.75E-06	30799.95	21480.25	55.24195	708848.3
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.000367	0.000442	0.000528	0.001096	0.001828	3.05E-06	0.000125	9.47E-05	2.79E-07	2.77E-08	110.1937	0	25.15433	0
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.001544	0.001857	0.002219	0.005441	0.012159	2.19E-05	0.000649	0.000491	1.28E-06	1.27E-07	505.8954	0	39.7	0
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.004644	0.005586	0.006676	0.021875	0.037428	6.48E-05	0.002254	0.001703	4.56E-06	4.53E-07	1802.322	0	371.1408	0
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.000712	0.000856	0.001023	0.002098	0.003408	5.65E-06	0.000239	0.00018	5.36E-07	5.33E-08	212.1528	0	15.33	0
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.000997	0.0012	0.001434	0.003118	0.005727	9.85E-06	0.000361	0.000273	7.75E-07	7.7E-08	306.465	0	39.09471	0
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.001569	0.001888	0.002256	0.007689	0.012913	2.16E-05	0.000799	0.000604	1.58E-06	1.57E-07	624.1903	0	347.27	0
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.011543	0.013884	0.016593	0.047434	0.085281	0.000148	0.005112	0.003862	1.04E-05	1.04E-06	4126.076	0	1056.959	0
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.00023	0.000277	0.000331	0.000785	0.001673	2.98E-06	9.31E-05	7.03E-05	1.87E-07	1.86E-08	74.09918	0	7.656891	0
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.02452	0.029472	0.035251	0.122087	0.199275	0.40004	0.012262	0.009348	7.04E-05	5.71E-06	22713.71	7599.3	3049.728	281174.1
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.123052	0.148004	0.176888	0.384556	0.704622	0.001213	0.04399	0.033237	9.56E-05	9.5E-06	37805.02	0	4383.42	0
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.011628	0.013986	0.016716	0.03529	0.061103	0.000103	0.004054	0.003063	8.9E-06	8.84E-07	3518.683	0	287.2253	0
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.009213	0.011081	0.013243	0.036167	0.075376	0.000135	0.004111	0.003106	8.11E-06	8.06E-07	3207.515	0	463.2472	0
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.287118	0.347412	0.413449	1.469715	2.892446	191.8509	0.164656	0.151484	0.015878	0.001566	6224391	2206520	3420.29	2.73E+08
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	1.266302	1.532226	1.823475	9.391539	19.10389	1154.571	0.801161	0.737068	0.095679	0.009423	37458784	4696023	3579.94	1.89E+09
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.331942	0.401649	0.477996	2.16538	4.160476	257.437	0.209627	0.192856	0.02132	0.002101	8352259	2244314	5177.789	3.86E+08
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.073041	0.08838	0.10518	0.357014	0.898584	60.60854	0.048249	0.044389	0.005021	0.000495	1966377	705666.9	1838.677	91365866
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.045343	0.054865	0.065294	0.231057	0.538346	35.28929	0.029174	0.02684	0.002923	0.000288	1144922	471028.6	1041.781	62002848
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.251756	0.304624	0.362528	1.180157	2.251348	157.377	0.147359	0.13557	0.01302	0.001284	5105923	3198043	9576.272	2.57E+08

Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.233283	0.282273	0.335928	1.157995	2.370475	170.8205	0.176865	0.162716	0.014144	0.001394	5542085	2646307	9656.096	2.66E+08
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.159314	0.19277	0.229413	1.543502	2.067836	101.0038	0.106055	0.097571	0.008357	0.000824	3276956	638315.6	853.7196	1.59E+08
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	1.665189	2.014879	2.397873	10.55569	23.12523	1392.738	1.136822	1.045876	0.115379	0.011367	45185855	11925276	12514.91	2.42E+09
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	1.101963	1.333375	1.586827	11.03134	16.22656	903.1443	0.720267	0.662646	0.074814	0.007371	29301522	3197242	7028.642	1.17E+09
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.25731	0.311346	0.370527	1.198108	2.134101	165.5706	0.182834	0.168208	0.0137	0.001351	5371755	4233707	12521.67	2.77E+08
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.016596	0.020081	0.023898	0.089872	0.259706	18.98398	0.010237	0.009418	0.001574	0.000155	615914.2	150163.7	575.0092	39530429
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	1.930605	2.336033	2.780072	9.255767	19.56168	1267.978	1.413263	1.300202	0.104932	0.010349	41138149	21944372	37765.25	2.14E+09
Statewide	2004	Constructic	Aggregate	Aggregate	Diesel	0.093235	0.112814	0.134258	0.404467	0.730822	52.24646	0.049012	0.045091	0.00432	0.000426	1695079	798970	2268.919	62820450
Statewide	2004	Industrial -	Aggregate	Aggregate	Diesel	0.128586	0.15559	0.185164	0.576409	0.937964	80.46759	0.081163	0.07467	0.006657	0.000657	2610682	2513553	8511.205	1.58E+08
Statewide	2004	Industrial -	Aggregate	Aggregate	Diesel	0.598982	0.724768	0.862534	2.74559	5.792534	338.6047	0.429507	0.395146	0.027996	0.002764	10985657	11750569	15963.59	1.05E+09
Statewide	2004	Industrial -	Aggregate	Aggregate	Diesel	0.010239	0.012315	0.014718	0.042928	0.070979	0.000117	0.004269	0.003225	9.36E-06	9.31E-07	3702.831	0	1214.419	0
Statewide	2004	Industrial -	Aggregate	Aggregate	Diesel	0.008823	0.010612	0.012683	0.036083	0.075105	0.000135	0.004049	0.003059	7.95E-06	7.91E-07	3145.678	0	345.7461	0
Statewide	2004	Industrial -	Aggregate	Aggregate	Diesel	0.003133	0.003769	0.004504	0.01359	0.026562	4.71E-05	0.001473	0.001113	2.92E-06	2.91E-07	1156.631	0	193.4276	0
Statewide	2004	Industrial -	Aggregate	Aggregate	Diesel	0.285434	0.345375	0.411025	1.299898	2.363831	163.5152	0.152486	0.140287	0.01352	0.001335	5305070	3315019	4064.689	2.92E+08
Statewide	2004	Industrial -	Aggregate	Aggregate	Diesel	0.121509	0.147026	0.174973	0.692632	1.529706	95.86935	0.082868	0.076238	0.007939	0.000782	3110375	906091.8	1222.656	1.52E+08
Statewide	2004	Light Comn	Aggregate	Aggregate	Diesel	0.114661	0.136523	0.165099	0.350562	0.304964	26.45272	0.036063	0.033728	0.003017	0.000229	908960.2	796941	1139.372	29486817
Statewide	2004	Light Comn	Aggregate	Aggregate	Diesel	0.333859	0.398707	0.480486	1.143953	1.430198	124.2562	0.110814	0.115253	0.012619	0.00105	4177384	1604365	13997	52944038
Statewide	2004	Light Comn	Aggregate	Aggregate	Diesel	0.0015	0.001793	0.002159	0.005419	0.007643	0.642879	0.000526	0.000563	6.45E-05	5.28E-06	20992.68	16092.85	417.0464	611528.3
Statewide	2004	Light Comn	Aggregate	Aggregate	Diesel	0.206283	0.246349	0.29688	0.661089	0.807739	68.62077	0.067704	0.070527	0.007047	0.000582	2313478	837467	7288.044	30986277
Statewide	2004	Light Comn	Aggregate	Aggregate	Diesel	0.52494	0.625495	0.755762	1.625939	1.579864	137.3818	0.167534	0.161048	0.015192	0.001179	4688326	3142738	8302.093	1.45E+08
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.072573	0.087813	0.104505	0.450236	1.18603	92.03292	0.047301	0.043517	0.007651	0.000751	2985907	518530.8	1450.702	1.15E+08
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.282301	0.341585	0.406514	2.095472	3.946479	217.6484	0.187279	0.172297	0.018065	0.001776	7061364	2048351	4369.007	4.73E+08
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.558348	0.675601	0.804021	3.756193	8.104489	537.7565	0.381095	0.350607	0.044671	0.004389	17446918	3699041	8047.875	7.87E+08
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.807388	0.97694	1.162639	4.251091	11.75256	969.0938	0.510015	0.469214	0.080556	0.00791	31441182	10027025	15650.68	1.58E+09
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.382572	0.462913	0.550904	2.391025	5.64533	366.1683	0.259941	0.239145	0.030417	0.002989	11879928	2962841	5060.555	5.61E+08
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.002299	0.002765	0.003304	0.007888	0.014188	2.55E-05	0.000892	0.000674	1.88E-06	1.87E-07	742.1523	0	87.86634	0
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.002933	0.003528	0.004216	0.012064	0.019854	3.19E-05	0.001338	0.001011	2.65E-06	2.64E-07	1048.821	0	610.3499	0
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.003858	0.004595	0.005554	0.012378	0.012578	0.920678	0.001312	0.001187	0.000108	7.89E-06	31346.57	21867.15	56.25376	721616
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.000334	0.000402	0.000481	0.001035	0.001788	3.12E-06	0.000119	9.01E-05	2.58E-07	2.57E-08	102.1927	0	25.67993	0
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.001446	0.001739	0.002079	0.005352	0.011659	2.23E-05	0.000641	0.000484	1.23E-06	1.22E-07	486.9182	0	40.46	0
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.004335	0.005214	0.006231	0.021993	0.034682	6.61E-05	0.002134	0.001612	4.46E-06	4.43E-07	1762.738	0	378.4585	0
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.000659	0.000792	0.000947	0.002003	0.003354	5.78E-06	0.00023	0.000174	5.04E-07	5.01E-08	199.4752	0	15.68	0
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.00088	0.001059	0.001265	0.002901	0.005561	1.01E-05	0.00034	0.000257	7.03E-07	6.99E-08	278.106	0	39.91887	0
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.001463	0.00176	0.002104	0.007711	0.011962	2.2E-05	0.000747	0.000564	1.54E-06	1.53E-07	609.6508	0	353.44	0
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.01027	0.012353	0.014763	0.045925	0.079897	0.000151	0.004765	0.0036	9.76E-06	9.71E-07	3861.265	0	1074.294	0
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.000214	0.000257	0.000307	0.000768	0.001633	3.08E-06	9.16E-05	6.92E-05	1.79E-07	1.78E-08	70.80949	0	7.909764	0
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.022736	0.027328	0.032688	0.12419	0.175901	0.407304	0.011365	0.00867	7.09E-05	5.73E-06	22802.61	7730.7	3105.149	286035.9
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.115223	0.138588	0.165636	0.372137	0.685018	0.001232	0.042894	0.032409	9.11E-05	9.05E-06	36016.63	0	4452.374	0
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.0104	0.012509	0.01495	0.03298	0.059426	0.000105	0.003825	0.00289	8.14E-06	8.09E-07	3219.651	0	292.8234	0
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.008809	0.010595	0.012663	0.036399	0.07115	0.000138	0.004042	0.003054	7.99E-06	7.94E-07	3159.761	0	471.6937	0
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.271056	0.327977	0.39032	1.456769	2.905502	204.3658	0.160511	0.147671	0.016961	0.001668	6630423	2348932	3560.558	2.9E+08
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	1.188299	1.437842	1.71115	7.987702	18.69301	1230.003	0.745094	0.685487	0.1022	0.010039	39906084	4999263	3726.755	2.01E+09
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.30852	0.373309	0.444269	2.017904	4.058877	274.2747	0.199018	0.183096	0.022777	0.002239	8898541	2389209	5390.132	4.11E+08
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.070888	0.085775	0.102079	0.36037	0.899654	64.54176	0.04766	0.043847	0.00536	0.000527	2093986	751261.5	1914.081	97218044
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.042159	0.051012	0.060709	0.232361	0.529467	37.58126	0.027941	0.025705	0.003121	0.000307	1219283	501418.9	1084.505	65963870
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.238818	0.28897	0.343898	1.207616	2.256329	167.6171	0.145658	0.134005	0.013906	0.001368	5438152	3404483	9968.998	2.74E+08
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.215428	0.260667	0.310216	1.207407	2.325485	181.9144	0.170347	0.15672	0.015104	0.001485	5902011	2817295	10052.1	2.83E+08
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.152711	0.18478	0.219904	1.449044	2.035611	107.4889	0.102384	0.094193	0.008918	0.000877	3487357	679496.2	888.731	1.7E+08
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	1.513056	1.830798	2.178801	9.355524	22.13183	1481.751	1.042982	0.959543	0.123095	0.012094	48073774	12695164	13028.15	2.57E+09
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.991754	1.200022	1.428125	9.613649	15.47312	961.9015	0.654534	0.602171	0.079907	0.007851	31207835	3403869	7316.89	1.25E+09
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.229521	0.277721	0.330511	1.224838	2.115998	176.3086	0.170441	0.156805	0.014633	0.001439	5720137	4507056	13035.19	2.95E+08
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.016372	0.01981	0.023575	0.089785	0.265678	20.22007	0.010243	0.009423	0.001681	0.000165	656018	159845.4	598.5906	42070274
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	1.755416	2.124053	2.527798	9.212588	18.93642	1351.873	1.328782	1.222479	0.112204	0.011034	43860038	23361366	39314.02	2.29E+09
Statewide	2005	Constructic	Aggregate	Aggregate	Diesel	0.086196	0.104297	0.124122	0.400881	0.752487	55.64889	0.048733	0.044834	0.004615	0.000454	1805467	850571.7	2361.968	66966596
Statewide	2005	Industrial -	Aggregate	Aggregate	Diesel	0.125321	0.151638	0.180462	0.602758	0.972859	85.6506	0.081364	0.074855	0.007075	0.000699	2778839	2675454	8859.032	1.68E+08

Statewide	2005	Industrial - Aggregate	Aggregate	Diesel	0.574972	0.695716	0.827959	2.82394	5.759322	360.4146	0.420274	0.386652	0.029759	0.002942	11693256	12507437	16615.97	1.12E+09
Statewide	2005	Industrial - Aggregate	Aggregate	Diesel	0.009694	0.01166	0.013935	0.041871	0.06789	0.000117	0.004145	0.003132	9.02E-06	8.97E-07	3568.601	0	1223.392	0
Statewide	2005	Industrial - Aggregate	Aggregate	Diesel	0.008121	0.009768	0.011675	0.034965	0.067833	0.000132	0.003844	0.002904	7.55E-06	7.5E-07	2984.981	0	340.2485	0
Statewide	2005	Industrial - Aggregate	Aggregate	Diesel	0.002712	0.003262	0.003899	0.012421	0.022764	4.38E-05	0.001308	0.000988	2.62E-06	2.6E-07	1034.793	0	179.2221	0
Statewide	2005	Industrial - Aggregate	Aggregate	Diesel	0.255125	0.308701	0.36738	1.243966	2.28314	174.0474	0.142111	0.130742	0.014377	0.001421	5646775	3528543	4230.801	3.11E+08
Statewide	2005	Industrial - Aggregate	Aggregate	Diesel	0.112537	0.13617	0.162054	0.652172	1.481888	102.0444	0.078338	0.072071	0.008439	0.000833	3310718	964454.2	1272.623	1.61E+08
Statewide	2005	Light Comn	Aggregate	Aggregate	Diesel	0.111482	0.132737	0.160522	0.347113	0.303293	26.75844	0.035601	0.033291	0.003052	0.000231	918145.7	806142.7	1152.432	29827278
Statewide	2005	Light Comn	Aggregate	Aggregate	Diesel	0.321002	0.383342	0.461983	1.127086	1.412156	125.6868	0.108688	0.112937	0.012761	0.001061	4220948	1622786	14158.32	53551950
Statewide	2005	Light Comn	Aggregate	Aggregate	Diesel	0.001437	0.001718	0.002068	0.005344	0.007516	0.650304	0.000514	0.000549	6.52E-05	5.33E-06	21187.5	16304.55	421.8458	619572.9
Statewide	2005	Light Comn	Aggregate	Aggregate	Diesel	0.199026	0.237679	0.286437	0.652238	0.79711	69.41063	0.066428	0.069128	0.007126	0.000588	2337522	847070.1	7371.927	31341594
Statewide	2005	Light Comn	Aggregate	Aggregate	Diesel	0.508982	0.606473	0.732789	1.607534	1.567551	138.9618	0.165074	0.158609	0.015365	0.001191	4736115	3178869	8397.698	1.46E+08
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.066873	0.080917	0.096298	0.441715	1.123043	95.0691	0.044863	0.041274	0.007939	0.000776	3084412	534802.3	1479.64	1.18E+08
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.268994	0.325482	0.387351	1.934083	3.808837	224.4746	0.179986	0.165587	0.018715	0.001832	7282832	2112606	4456.157	4.88E+08
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.5014	0.606694	0.722016	3.383933	7.558584	555.2019	0.348903	0.320991	0.046332	0.004531	18012914	3815035	8208.408	8.12E+08
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.714388	0.864409	1.028719	4.153903	11.07604	999.3074	0.475351	0.437323	0.083445	0.008156	32421429	10341579	15962.87	1.63E+09
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.360767	0.436529	0.519505	2.257969	5.464744	378.3568	0.246686	0.226951	0.031569	0.003088	12275371	3055809	5161.5	5.79E+08
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.002001	0.002407	0.002876	0.007329	0.013544	2.57E-05	0.000827	0.000625	1.95E-07	1.68E-07	669.7091	0	88.5959	0
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.002692	0.003238	0.003869	0.011814	0.018618	3.24E-05	0.001234	0.000932	2.92E-07	2.51E-07	1000.433	0	621.41	0
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.003729	0.004441	0.005369	0.012283	0.012525	0.937094	0.001297	0.001173	0.000109	8.01E-06	31821.47	22290.55	57.34288	735588.2
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.000301	0.000362	0.000432	0.000971	0.00174	3.17E-06	0.000113	8.53E-05	2.74E-08	2.36E-08	93.9528	0	26.09536	0
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.001387	0.001668	0.001993	0.005341	0.011195	2.27E-05	0.000641	0.000485	1.39E-07	1.2E-07	477.5934	0	41.16	0
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.004131	0.004969	0.005939	0.022299	0.032301	6.74E-05	0.00205	0.001549	5.1E-07	4.39E-07	1748.28	0	385.6603	0
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.000599	0.000721	0.000862	0.00189	0.003273	5.87E-06	0.000219	0.000165	5.4E-08	4.65E-08	184.996	0	15.92	0
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.000815	0.00098	0.001172	0.002795	0.005415	1.02E-05	0.00033	0.000249	7.68E-08	6.61E-08	263.0988	0	40.52399	0
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.00139	0.001672	0.001998	0.007791	0.011179	2.24E-05	0.00071	0.000537	1.76E-07	1.52E-07	602.8765	0	359.83	0
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.009743	0.011719	0.014006	0.046009	0.075637	0.000153	0.004612	0.003485	1.11E-06	9.52E-07	3787.779	0	1091.729	0
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.000209	0.000251	0.0003	0.000787	0.001638	3.27E-06	9.42E-05	7.12E-05	2.07E-08	1.78E-08	70.99167	0	8.400286	0
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.02123	0.025517	0.030522	0.126285	0.156051	0.414566	0.010612	0.0081	5.1E-05	5.77E-06	22962.18	7876.7	3160.499	291437.9
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.109021	0.131128	0.156719	0.36309	0.666444	0.00125	0.042141	0.03184	1.01E-06	8.71E-06	34640.02	0	4514.903	0
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.009247	0.011122	0.013292	0.030837	0.057881	0.000107	0.003612	0.002729	8.58E-07	7.39E-07	2940.167	0	298.6468	0
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.008482	0.010202	0.012193	0.036799	0.067129	0.00014	0.003998	0.00302	9.14E-07	7.87E-07	3131.936	0	480.7248	0
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.250885	0.303571	0.361275	1.374667	2.807001	210.9003	0.15222	0.140042	0.017584	0.001721	6842427	2422655	3631.581	3E+08
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	1.073041	1.29838	1.545179	7.020579	17.46337	1270.333	0.669623	0.616053	0.106031	0.010368	41214540	5156089	3801.094	2.08E+09
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.280128	0.338955	0.403384	1.869981	3.831637	283.1642	0.185271	0.170449	0.023624	0.002311	9186952	2464088	5497.651	4.25E+08
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.063855	0.077264	0.091951	0.344446	0.846387	66.5688	0.044306	0.040761	0.005554	0.000543	2159751	774815.5	1952.262	1E+08
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.039683	0.048016	0.057143	0.233374	0.519835	38.76166	0.027058	0.024893	0.003233	0.000316	1257579	517106	1106.138	68016996
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.225786	0.273201	0.325132	1.213361	2.229621	172.8647	0.142691	0.131276	0.014407	0.001411	5608404	3511383	10167.85	2.82E+08
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.176138	0.213127	0.253638	1.210559	2.231885	187.6695	0.145779	0.134117	0.015659	0.001532	6088731	2905865	10252.61	2.92E+08
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.148034	0.179122	0.213169	1.37436	1.983704	110.9029	0.099696	0.09172	0.009242	0.000905	3598123	700812.5	906.4588	1.75E+08
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	1.353537	1.63778	1.949093	8.290966	20.56928	1527.294	0.941676	0.866342	0.127462	0.012466	49551374	13093361	13288.03	2.65E+09
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.850941	1.029638	1.225355	8.118924	13.82369	992.0046	0.573463	0.527586	0.082796	0.008097	32184497	3510634	7462.842	1.29E+09
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.201292	0.243563	0.289861	1.232709	2.067186	181.9146	0.154872	0.142483	0.015171	0.001485	5902020	4648834	13295.21	3.04E+08
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.01483	0.017944	0.021355	0.084542	0.249401	20.87203	0.009569	0.008803	0.001743	0.00017	677169.9	164881	610.5309	43419291
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	1.57708	1.908266	2.270995	9.146631	18.09532	1395.139	1.232541	1.133938	0.11634	0.011387	45263752	24094192	40098.23	2.36E+09
Statewide	2006	Constructic	Aggregate	Aggregate	Diesel	0.079466	0.096153	0.114431	0.39536	0.747412	57.39276	0.047124	0.043354	0.004782	0.000468	1862045	877298.1	2409.083	69097561
Statewide	2006	Industrial -	Aggregate	Aggregate	Diesel	0.107548	0.130133	0.154869	0.598034	0.959821	88.34901	0.074705	0.068728	0.007319	0.000721	2866386	2759744	9036.92	1.74E+08
Statewide	2006	Industrial -	Aggregate	Aggregate	Diesel	0.525652	0.636039	0.756939	2.83556	5.497709	371.7695	0.393707	0.36221	0.030778	0.003034	12061651	12901482	16949.62	1.15E+09
Statewide	2006	Industrial -	Aggregate	Aggregate	Diesel	0.009225	0.011095	0.013261	0.041101	0.06531	0.000118	0.004031	0.003046	1.01E-06	8.7E-07	3460.051	0	1225.667	0
Statewide	2006	Industrial -	Aggregate	Aggregate	Diesel	0.007441	0.008949	0.010696	0.033858	0.060716	0.000128	0.003639	0.002749	8.25E-07	7.11E-07	2827.927	0	331.7794	0
Statewide	2006	Industrial -	Aggregate	Aggregate	Diesel	0.002313	0.002782	0.003325	0.011309	0.019131	4.01E-05	0.001149	0.000868	2.68E-07	2.31E-07	918.9592	0	164.3356	0
Statewide	2006	Industrial -	Aggregate	Aggregate	Diesel	0.245999	0.297659	0.354238	1.259673	2.24519	179.5307	0.141561	0.130236	0.014865	0.001465	5824676	3639709	4315.755	3.21E+08
Statewide	2006	Industrial -	Aggregate	Aggregate	Diesel	0.090096	0.109016	0.129738	0.60277	1.293854	105.2593	0.065609	0.06036	0.00873	0.000859	3415022	994839.2	1298.177	1.67E+08
Statewide	2006	Light Comn	Aggregate	Aggregate	Diesel	0.108006	0.128597	0.155517	0.343128	0.300825	26.95384	0.03505	0.03277	0.002912	0.000232	923741.5	812037.4	1160.922	30045384
Statewide	2006	Light Comn	Aggregate	Aggregate	Diesel	0.30735	0.367032	0.442338	1.107415	1.390754	126.6073	0.106239	0.11031	0.00856	0.001068	4247555	1634685	14261.89	53944617
Statewide	2006	Light Comn	Aggregate	Aggregate	Diesel	0.001371	0.001638	0.001972	0.005254	0.007373	0.65514	0.000501	0.000534	4.16E-05	5.36E-06	21330.17	16446.9	424.9657	624982.2

Statewide	2006	Light Comn	Aggregate	Aggregate	Diesel	0.191243	0.228383	0.275236	0.641758	0.784639	69.91929	0.064959	0.067544	0.00497	0.000592	2352195	853366.4	7426.003	31574555
Statewide	2006	Light Comn	Aggregate	Aggregate	Diesel	0.491373	0.585485	0.707438	1.585367	1.551121	139.9809	0.162099	0.155689	0.013537	0.001199	4765138	3202207	8459.216	1.47E+08
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.052232	0.0632	0.075214	0.402705	0.918868	90.63482	0.037357	0.034368	0.000836	0.00074	2940547	511255.1	1437.626	1.13E+08
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.23443	0.28366	0.337579	1.675598	3.365033	214.5273	0.158995	0.146276	0.001976	0.001751	6960102	2019620	4329.628	4.67E+08
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.449389	0.543761	0.647121	3.095273	6.860881	530.7765	0.316584	0.291258	0.004894	0.004332	17220458	3647087	7975.337	7.76E+08
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.619388	0.74946	0.891919	3.865897	9.993853	954.79	0.429872	0.395482	0.008809	0.007793	30977111	9886601	15509.62	1.56E+09
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.329586	0.3988	0.474605	2.066376	5.012959	361.7445	0.225852	0.207784	0.003335	0.002953	11736403	2921196	5014.943	5.54E+08
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.00183	0.002201	0.00263	0.007082	0.013134	2.61E-05	0.000774	0.000585	1.84E-07	1.59E-07	631.8641	0	90.3022	0
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.002566	0.003086	0.003689	0.011775	0.017911	3.3E-05	0.001152	0.00087	2.86E-07	2.46E-07	979.9264	0	632.25	0
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.003593	0.004279	0.005173	0.012177	0.012457	0.953512	0.001238	0.001118	1.24E-05	8.13E-06	32325.53	22673.8	58.27629	748235.4
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.000269	0.000323	0.000386	0.000909	0.001693	3.21E-06	0.000104	7.85E-05	2.51E-08	2.16E-08	86.08938	0	26.46957	0
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.001368	0.001645	0.001966	0.005418	0.010823	2.32E-05	0.000634	0.000479	1.4E-07	1.2E-07	478.7765	0	41.93	0
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.00397	0.004776	0.005708	0.022654	0.030285	6.87E-05	0.00193	0.001458	5.08E-07	4.38E-07	1742.652	0	393.2116	0
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.000546	0.000657	0.000785	0.001795	0.003216	6E-06	0.000204	0.000154	5.03E-08	4.33E-08	172.307	0	16.27	0
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.000761	0.000915	0.001094	0.002711	0.005277	1.04E-05	0.000313	0.000236	7.32E-08	6.3E-08	250.8393	0	41.12292	0
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.001342	0.001614	0.001929	0.007911	0.010545	2.28E-05	0.000668	0.000505	1.76E-07	1.51E-07	601.9305	0	366.06	0
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.009352	0.011249	0.013444	0.046364	0.071962	0.000156	0.004382	0.003311	1.09E-06	9.42E-07	3748.205	0	1110.945	0
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.000214	0.000258	0.000308	0.000836	0.001686	3.54E-06	9.76E-05	7.38E-05	2.17E-08	1.87E-08	74.38402	0	9.075897	0
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.021108	0.02537	0.030346	0.128406	0.153348	0.421829	0.010278	0.007844	8.14E-06	5.86E-06	23310.2	8026.35	3215.766	296975
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.104118	0.125231	0.149672	0.356635	0.649235	0.001265	0.040487	0.03059	9.8E-06	8.44E-06	33587.52	0	4571.668	0
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.008273	0.009951	0.011893	0.029095	0.056614	0.00011	0.003347	0.002529	7.9E-07	6.81E-07	2707.716	0	304.7861	0
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.008332	0.010022	0.011978	0.037451	0.064485	0.000143	0.003935	0.002973	9.17E-07	7.9E-07	3143.165	0	491.9399	0
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.220273	0.266531	0.317194	1.24632	2.51267	201.6852	0.135904	0.125032	0.001858	0.001646	6543453	2316090	3528.465	2.86E+08
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.860511	1.041218	1.239136	5.794521	14.68391	1215.007	0.549795	0.505812	0.011208	0.009917	39419571	4929057	3693.164	1.99E+09
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.235695	0.285191	0.339401	1.612289	3.337626	270.702	0.160711	0.147854	0.002496	0.002209	8782627	2355618	5341.549	4.06E+08
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.05699	0.068958	0.082066	0.322399	0.762848	63.63845	0.040617	0.037367	0.000587	0.000519	2064679	740747.1	1896.829	95814741
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.034965	0.042308	0.050349	0.215826	0.475006	37.05469	0.02457	0.022604	0.000342	0.000302	1202199	494388.1	1074.73	65007883
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.201695	0.244051	0.290441	1.14609	2.04268	165.2121	0.130871	0.120401	0.001521	0.001348	5360125	3356771	9879.145	2.7E+08
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.152497	0.184521	0.219596	1.147208	2.0654	179.3126	0.129606	0.119237	0.001653	0.001464	5817600	2777899	9961.494	2.79E+08
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.136324	0.164952	0.196306	1.250494	1.825371	106.0746	0.091616	0.084287	0.000977	0.000866	3441474	669965.5	880.7206	1.68E+08
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	1.185084	1.433952	1.706521	7.319073	18.25695	1459.801	0.829055	0.762731	0.013461	0.011915	47361629	12517172	12910.72	2.53E+09
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.746338	0.903069	1.074726	7.101119	12.34697	949.0557	0.50754	0.466937	0.008752	0.007746	30791068	3356111	7250.941	1.23E+09
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.166702	0.20171	0.240051	1.157742	1.89341	173.9469	0.133259	0.122598	0.001603	0.00142	5643517	4443916	12917.7	2.91E+08
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.011363	0.013749	0.016363	0.069972	0.206471	19.95599	0.007747	0.007128	0.000184	0.000163	647450.1	157621.6	593.1953	41491637
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	1.382633	1.672986	1.990991	8.552768	16.35031	1334.718	1.110751	1.021891	0.012299	0.010894	43303443	23033558	38959.67	2.26E+09
Statewide	2007	Constructic	Aggregate	Aggregate	Diesel	0.069214	0.083749	0.099669	0.359393	0.662188	54.91413	0.042347	0.038959	0.000506	0.000448	1781628	838623.3	2340.679	66079401
Statewide	2007	Industrial -	Aggregate	Aggregate	Diesel	0.079728	0.096471	0.114808	0.546903	0.866753	84.45712	0.060922	0.056049	0.000778	0.000689	2740118	2638174	8780.021	1.66E+08
Statewide	2007	Industrial -	Aggregate	Aggregate	Diesel	0.490746	0.593802	0.706674	2.714351	5.121595	355.3925	0.371476	0.341758	0.003271	0.002901	11530319	12333155	16467.78	1.1E+09
Statewide	2007	Industrial -	Aggregate	Aggregate	Diesel	0.008686	0.010448	0.012487	0.040174	0.062637	0.000117	0.003792	0.002865	9.73E-07	8.38E-07	3333.282	0	1220.786	0
Statewide	2007	Industrial -	Aggregate	Aggregate	Diesel	0.006992	0.00841	0.010052	0.032781	0.055789	0.000125	0.00341	0.002576	7.9E-07	6.8E-07	2706.69	0	322.4049	0
Statewide	2007	Industrial -	Aggregate	Aggregate	Diesel	0.002122	0.002552	0.00305	0.010823	0.01721	3.84E-05	0.001055	0.000797	2.53E-07	2.18E-07	865.9482	0	158.3582	0
Statewide	2007	Industrial -	Aggregate	Aggregate	Diesel	0.202167	0.244622	0.291121	1.144116	2.001459	171.6222	0.124494	0.114534	0.001581	0.001401	5568092	3479375	4193.068	3.07E+08
Statewide	2007	Industrial -	Aggregate	Aggregate	Diesel	0.082562	0.099901	0.11889	0.572961	1.175685	100.6225	0.061452	0.056536	0.000928	0.000821	3264586	951015.2	1261.273	1.59E+08
Statewide	2007	Light Comn	Aggregate	Aggregate	Diesel	0.105316	0.125394	0.151644	0.341171	0.299259	27.14998	0.033504	0.031321	0.000344	0.000234	929497.2	817924.9	1169.312	30263219
Statewide	2007	Light Comn	Aggregate	Aggregate	Diesel	0.2959	0.353352	0.42586	1.092372	1.373378	127.5272	0.100837	0.104656	0.001456	0.001075	4274807	1646614	14365.3	54338247
Statewide	2007	Light Comn	Aggregate	Aggregate	Diesel	0.001313	0.00157	0.00189	0.005182	0.007255	0.659976	0.000474	0.000505	7.45E-06	5.39E-06	21448.09	16556.4	428.2253	629143.2
Statewide	2007	Light Comn	Aggregate	Aggregate	Diesel	0.184725	0.220597	0.265855	0.634015	0.774536	70.42755	0.061686	0.064107	0.000812	0.000595	2367178	859607.9	7479.898	31805490
Statewide	2007	Light Comn	Aggregate	Aggregate	Diesel	0.477149	0.568531	0.686961	1.571441	1.539107	140.9979	0.154512	0.14836	0.001736	0.001206	4795038	3225556	8520.543	1.48E+08
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.039698	0.048035	0.057165	0.346623	0.729052	80.27789	0.02972	0.027343	0.000741	0.000655	2604528	451199.4	1326.172	99929270
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.196463	0.237721	0.282907	1.430074	2.843317	189.3584	0.134397	0.123645	0.001745	0.001546	6143526	1782183	3993.968	4.12E+08
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.370997	0.448906	0.534235	2.552363	5.709719	468.6385	0.264442	0.243287	0.004322	0.003825	15204460	3218455	7357.038	6.85E+08
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.510696	0.617943	0.735403	3.369521	8.449613	842.3304	0.363389	0.334318	0.007772	0.006875	27328481	8724638	14307.21	1.37E+09
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.266129	0.322016	0.383226	1.533285	4.093747	317.985	0.182971	0.168333	0.002932	0.002595	10316672	2577988	4626.153	4.88E+08
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.001717	0.002066	0.002469	0.006973	0.012894	2.67E-05	0.000699	0.000528	1.78E-07	1.53E-07	609.7362	0	92.53725	0
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.002457	0.002955	0.003532	0.011766	0.017295	3.36E-05	0.00105	0.000794	2.81E-07	2.42E-07	963.366	0	643.13	0

Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.003438	0.004096	0.004951	0.012054	0.012399	0.96993	0.001192	0.001077	1.26E-05	8.26E-06	32819.35	23071.65	59.46154	761364.5
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.00024	0.000288	0.000344	0.000856	0.001652	3.27E-06	9.31E-05	7.03E-05	2.31E-08	1.99E-08	79.06987	0	26.89088	0
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.001361	0.001637	0.001956	0.005511	0.010506	2.36E-05	0.000563	0.000425	1.41E-07	1.21E-07	482.5018	0	42.65	0
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.00396	0.004762	0.005692	0.02303	0.030048	7.01E-05	0.001636	0.001236	5.14E-07	4.42E-07	1760.248	0	400.8108	0
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.000499	0.000601	0.000718	0.001715	0.003177	6.15E-06	0.000187	0.000141	4.71E-08	4.05E-08	161.3194	0	16.69	0
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.000718	0.000864	0.001033	0.002655	0.005163	1.05E-05	0.000286	0.000216	7.05E-08	6.07E-08	241.7011	0	41.78844	0
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.00131	0.001575	0.001883	0.008048	0.010035	2.32E-05	0.000571	0.000432	1.76E-07	1.52E-07	604.158	0	372.4	0
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.009218	0.011088	0.013251	0.046921	0.070717	0.000158	0.003837	0.002899	1.1E-06	9.44E-07	3756.811	0	1131.666	0
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.000223	0.000269	0.000321	0.000894	0.001745	3.82E-06	9.22E-05	6.96E-05	2.3E-08	1.98E-08	78.66372	0	9.787619	0
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.021307	0.02561	0.030632	0.130528	0.154684	0.429092	0.007995	0.006117	8.27E-06	5.96E-06	23695.03	8165.05	3271.095	302106.9
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.099847	0.120094	0.143531	0.351364	0.633687	0.001281	0.037213	0.028117	9.54E-06	8.22E-06	32688.48	0	4627.643	0
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.007879	0.009477	0.011326	0.028605	0.0558	0.000112	0.003111	0.00235	7.66E-07	6.6E-07	2624.603	0	310.238	0
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.008362	0.010058	0.01202	0.038259	0.063897	0.000147	0.003417	0.002582	9.3E-07	8.01E-07	3188.784	0	503.9785	0
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.181499	0.219614	0.261358	1.074931	2.081133	178.056	0.114344	0.105196	0.001641	0.001453	5776831	2043928	3254.916	2.53E+08
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.755564	0.914232	1.088012	5.029257	12.6091	1072.782	0.477977	0.439739	0.009896	0.008756	34805233	4349656	3406.847	1.76E+09
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.193981	0.234717	0.279333	1.372326	2.812925	238.9632	0.135114	0.124305	0.002204	0.00195	7752898	2078780	4927.438	3.59E+08
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.046922	0.056775	0.067567	0.280618	0.635198	56.15467	0.034164	0.031431	0.000518	0.000458	1821876	653654	1749.775	84544421
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.028631	0.034644	0.041229	0.179442	0.393582	32.70602	0.020636	0.018985	0.000302	0.000267	1061111	436283.8	991.4104	57370990
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.171543	0.207567	0.247022	1.00668	1.762851	145.8002	0.113248	0.104188	0.001343	0.00119	4730328	2962262	9113.25	2.38E+08
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.127247	0.153969	0.183235	1.011495	1.764535	158.2056	0.110318	0.101492	0.001459	0.001291	5132805	2451119	9189.216	2.46E+08
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.114483	0.138525	0.164856	1.048256	1.531809	93.51427	0.077201	0.071025	0.000861	0.000763	3033968	591208.6	812.4415	1.48E+08
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.997878	1.207432	1.436944	6.262917	15.37471	1288.512	0.698715	0.642818	0.011883	0.010517	41804366	11046093	11909.8	2.23E+09
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.644102	0.779363	0.927506	6.071001	10.6386	837.577	0.437663	0.40265	0.007724	0.006836	27174262	2961423	6688.801	1.09E+09
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.132633	0.160487	0.190992	1.014026	1.577835	153.5537	0.10896	0.100244	0.001416	0.001253	4981880	3921870	11916.24	2.57E+08
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.009471	0.01146	0.013639	0.060898	0.172827	17.60219	0.006595	0.006067	0.000162	0.000144	571083.5	139084	547.207	36600976
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	1.137833	1.376778	1.63848	7.495519	13.64148	1179.185	0.933551	0.858867	0.010868	0.009624	38257364	20326774	35939.27	2E+09
Statewide	2008	Constructic	Aggregate	Aggregate	Diesel	0.059641	0.072165	0.085883	0.318221	0.560289	48.42758	0.036927	0.033973	0.000446	0.000395	1571180	740073.1	2159.215	58305280
Statewide	2008	Industrial -	Aggregate	Aggregate	Diesel	0.058225	0.070452	0.083844	0.470905	0.725388	74.52715	0.048029	0.044187	0.000687	0.000608	2417951	2327992	8098.858	1.46E+08
Statewide	2008	Industrial -	Aggregate	Aggregate	Diesel	0.432643	0.523499	0.623007	2.41348	4.48088	313.6075	0.329139	0.302808	0.002886	0.00256	10174651	10883094	15190.19	9.74E+08
Statewide	2008	Industrial -	Aggregate	Aggregate	Diesel	0.008255	0.009929	0.011866	0.03891	0.059889	0.000117	0.003557	0.002688	9.35E-07	8.06E-07	3205.144	0	1213.867	0
Statewide	2008	Industrial -	Aggregate	Aggregate	Diesel	0.006671	0.008024	0.00959	0.03184	0.052387	0.000121	0.003305	0.002497	7.62E-07	6.56E-07	2611.222	0	313.7187	0
Statewide	2008	Industrial -	Aggregate	Aggregate	Diesel	0.002038	0.002451	0.002929	0.010611	0.016358	3.76E-05	0.001029	0.000777	2.46E-07	2.12E-07	842.7311	0	156.0338	0
Statewide	2008	Industrial -	Aggregate	Aggregate	Diesel	0.176636	0.213729	0.254355	1.015236	1.746419	151.4438	0.109262	0.100521	0.001395	0.001236	4913428	3070291	3867.765	2.71E+08
Statewide	2008	Industrial -	Aggregate	Aggregate	Diesel	0.073002	0.088333	0.105123	0.5083	1.027433	88.79188	0.054585	0.050218	0.000819	0.000725	2880755	839200.4	1163.422	1.4E+08
Statewide	2008	Light Comn	Aggregate	Aggregate	Diesel	0.102517	0.12206	0.147614	0.339482	0.29788	27.34455	0.032823	0.030675	0.000346	0.000235	935291.9	823867.1	1177.742	30483081
Statewide	2008	Light Comn	Aggregate	Aggregate	Diesel	0.284515	0.339755	0.409476	1.078187	1.357255	128.4446	0.098151	0.10192	0.001466	0.001082	4301981	1658549	14468.72	54732119
Statewide	2008	Light Comn	Aggregate	Aggregate	Diesel	0.001256	0.001501	0.001808	0.005111	0.00714	0.664422	0.000459	0.00049	7.5E-06	5.43E-06	21601.29	16680.5	430.9752	633859
Statewide	2008	Light Comn	Aggregate	Aggregate	Diesel	0.178186	0.212789	0.256445	0.62675	0.765156	70.93475	0.059781	0.062058	0.000818	0.000599	2382271	865739.8	7533.704	32032374
Statewide	2008	Light Comn	Aggregate	Aggregate	Diesel	0.46259	0.55118	0.666001	1.558816	1.528226	142.0167	0.150755	0.14466	0.001748	0.001214	4824994	3248785	8582.26	1.49E+08
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.024524	0.029674	0.035314	0.20338	0.494085	63.15604	0.019215	0.017678	0.000583	0.000515	2049028	356500.6	1135.092	78835592
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.15238	0.18438	0.219428	1.109363	2.204431	149.0856	0.103862	0.095553	0.001374	0.001217	4836918	1404251	3414.828	3.25E+08
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.290217	0.351162	0.417912	1.977858	4.431134	369.0004	0.206201	0.189705	0.003403	0.003012	11971813	2536321	6290.064	5.4E+08
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.405378	0.490508	0.583745	2.680667	6.625299	663.104	0.285695	0.262839	0.006119	0.005412	21513680	6867991	12225.54	1.08E+09
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.199981	0.241977	0.287972	1.089224	3.065637	250.7162	0.134175	0.123441	0.002312	0.002046	8134213	2029295	3952.3	3.85E+08
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.001658	0.001994	0.002383	0.006991	0.012784	2.75E-05	0.00064	0.000484	1.76E-07	1.51E-07	601.9194	0	95.23884	0
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.00236	0.002838	0.003392	0.011776	0.016745	3.41E-05	0.000954	0.000721	2.77E-07	2.39E-07	949.5279	0	653.92	0
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.003279	0.003905	0.00472	0.011924	0.012339	0.986348	0.001144	0.001035	1.28E-05	8.39E-06	33356.74	23447.6	60.50109	773770.8
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.000231	0.000278	0.000332	0.000848	0.00164	3.34E-06	8.73E-05	6.6E-05	2.26E-08	1.95E-08	77.43064	0	27.47884	0
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.001371	0.001649	0.001971	0.005593	0.010502	2.39E-05	0.000494	0.000373	1.42E-07	1.23E-07	488.2071	0	43.28	0
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.003984	0.004792	0.005727	0.023429	0.030154	7.14E-05	0.001376	0.00104	5.21E-07	4.48E-07	1784.179	0	408.4404	0
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.000452	0.000543	0.000649	0.001628	0.003112	6.24E-06	0.000168	0.000127	4.37E-08	3.77E-08	149.847	0	16.94	0
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.000683	0.000821	0.000982	0.002614	0.005065	1.07E-05	0.00026	0.000197	6.84E-08	5.89E-08	234.361	0	42.48555	0
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.001314	0.001581	0.001889	0.008184	0.009985	2.36E-05	0.000496	0.000375	1.78E-07	1.54E-07	611.7557	0	378.69	0
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.00919	0.011053	0.013211	0.047625	0.070175	0.000161	0.003354	0.002534	1.11E-06	9.52E-07	3788.617	0	1153.088	0
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.000236	0.000284	0.00034	0.000961	0.001818	4.11E-06	8.77E-05	6.63E-05	2.45E-08	2.11E-08	84.03005	0	10.538	0

Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.021601	0.025964	0.031055	0.132649	0.157244	0.436356	0.006078	0.004668	8.42E-06	6.06E-06	24094.5	8343.9	3326.466	308724.3
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.096249	0.115766	0.138359	0.346485	0.627374	0.001297	0.034014	0.025699	9.31E-06	8.02E-06	31908.95	0	4686.56	0
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.007592	0.009131	0.010913	0.028343	0.055103	0.000113	0.002898	0.00219	7.5E-07	6.46E-07	2568.833	0	315.5959	0
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.008551	0.010285	0.012292	0.03928	0.065098	0.000151	0.00293	0.002214	9.54E-07	8.22E-07	3268.831	0	516.7691	0
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.139568	0.168878	0.200978	0.84113	1.592081	140.5064	0.088551	0.081466	0.001295	0.001147	4558575	1610413	2783.106	2E+08
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.613548	0.742393	0.883509	3.985849	9.941472	844.5751	0.380014	0.349613	0.00779	0.006893	27401308	3427757	2912.885	1.39E+09
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.150965	0.182668	0.21739	1.079234	2.17083	188.193	0.104272	0.09593	0.001735	0.001536	6105713	1637474	4211.974	2.83E+08
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.036589	0.044273	0.052688	0.221238	0.490956	44.22621	0.026666	0.024533	0.000408	0.000361	1434871	514518.1	1494.9	66567221
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.021937	0.026543	0.031589	0.139163	0.298892	25.74698	0.015943	0.014668	0.000237	0.00021	835332.5	343447.1	847	45152484
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.134353	0.162567	0.193468	0.797921	1.372588	114.7747	0.088726	0.081628	0.001057	0.000937	3723739	2333889	7792.837	1.88E+08
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.100468	0.121566	0.144674	0.800467	1.387072	124.5447	0.087373	0.080384	0.001148	0.001017	4040717	1929626	7850.7	1.94E+08
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.090515	0.109523	0.130341	0.819947	1.201231	73.61993	0.06079	0.055927	0.000678	0.000601	2388518	465416.4	694.1	1.16E+08
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.78869	0.954315	1.135714	4.955581	11.90411	1013.804	0.538093	0.495046	0.009349	0.008275	32891758	8692792	10175	1.76E+09
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.514524	0.622574	0.740915	4.797356	8.395653	659.3629	0.344503	0.316943	0.006081	0.005382	21392304	2332311	5716.8	8.56E+08
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.100384	0.121464	0.144552	0.800133	1.215333	120.8796	0.083331	0.076664	0.001115	0.000987	3921805	3084588	10180.5	2.02E+08
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.00678	0.008204	0.009763	0.045723	0.12622	13.85917	0.00483	0.004443	0.000128	0.000113	449645.4	109495.2	467.5	28781436
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.879115	1.063729	1.265925	5.933162	10.56099	928.8289	0.71994	0.662345	0.008561	0.007581	30134829	16002653	30706.64	1.57E+09
Statewide	2009	Constructic	Aggregate	Aggregate	Diesel	0.047603	0.057599	0.068548	0.253692	0.442628	38.12397	0.029422	0.027069	0.000351	0.000311	1236890	582586.7	1844.7	45900437
Statewide	2009	Industrial -	Aggregate	Aggregate	Diesel	0.046889	0.056736	0.06752	0.375112	0.573552	58.62765	0.038431	0.035356	0.000541	0.000479	1902110	1831507	6919.165	1.15E+08
Statewide	2009	Industrial -	Aggregate	Aggregate	Diesel	0.347631	0.420633	0.500588	1.92352	3.553951	246.8488	0.264148	0.243016	0.002272	0.002015	8008739	8568295	12979.91	7.67E+08
Statewide	2009	Industrial -	Aggregate	Aggregate	Diesel	0.007923	0.009529	0.011389	0.03763	0.057875	0.000116	0.003238	0.002446	9.02E-07	7.77E-07	3090.852	0	1209.068	0
Statewide	2009	Industrial -	Aggregate	Aggregate	Diesel	0.006445	0.007752	0.009265	0.030932	0.050426	0.000117	0.002654	0.002006	7.39E-07	6.36E-07	2531.446	0	305.3799	0
Statewide	2009	Industrial -	Aggregate	Aggregate	Diesel	0.001997	0.002402	0.002871	0.010476	0.015924	3.71E-05	0.000845	0.000639	2.42E-07	2.09E-07	829.7941	0	154.2213	0
Statewide	2009	Industrial -	Aggregate	Aggregate	Diesel	0.143898	0.174116	0.207213	0.816019	1.386518	119.2209	0.087577	0.08057	0.001098	0.000973	3867991	2417021	3304.38	2.13E+08
Statewide	2009	Industrial -	Aggregate	Aggregate	Diesel	0.058967	0.07135	0.084913	0.403931	0.814646	69.89951	0.043706	0.040209	0.000644	0.000571	2267813	660642.6	993.9558	1.11E+08
Statewide	2009	Light Comn	Aggregate	Aggregate	Diesel	0.099387	0.118333	0.143107	0.337221	0.296483	27.53934	0.032066	0.029959	0.000349	0.000237	940902.5	829776.4	1186.192	30701727
Statewide	2009	Light Comn	Aggregate	Aggregate	Diesel	0.273006	0.326011	0.392911	1.063606	1.341285	129.3649	0.094833	0.098374	0.001476	0.001089	4329166	1670466	14572.44	55125388
Statewide	2009	Light Comn	Aggregate	Aggregate	Diesel	0.001199	0.001434	0.001726	0.00504	0.007029	0.669035	0.000441	0.00047	7.55E-06	5.47E-06	21770.84	16800.95	434.015	638436.1
Statewide	2009	Light Comn	Aggregate	Aggregate	Diesel	0.171453	0.204749	0.246754	0.619209	0.755843	71.44485	0.057824	0.059959	0.000823	0.000603	2397291	871871.9	7588.06	32259258
Statewide	2009	Light Comn	Aggregate	Aggregate	Diesel	0.447127	0.532752	0.643738	1.544889	1.517453	143.0375	0.146783	0.140761	0.001761	0.001221	4854787	3272126	8644.057	1.51E+08
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.022181	0.026839	0.031941	0.18312	0.435531	56.78613	0.017123	0.015754	0.000524	0.000463	1842364	320759.2	1057.659	70959658
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.137654	0.166562	0.198222	1.000095	1.978028	134.1827	0.093619	0.08613	0.001236	0.001095	4353409	1263909	3181.875	2.92E+08
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.264862	0.320482	0.381401	1.787443	3.991319	332.1298	0.187479	0.17248	0.003063	0.002711	10775586	2282959	5860.97	4.86E+08
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.364418	0.440945	0.524762	2.427279	5.845404	596.8664	0.254608	0.23424	0.005507	0.004872	19364674	6183115	11391.54	9.74E+08
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.183687	0.222262	0.26451	0.988159	2.771333	225.6616	0.122224	0.112446	0.002081	0.001842	7321343	1826492	3682.682	3.46E+08
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.001658	0.001994	0.002383	0.007141	0.012809	2.83E-05	0.000598	0.000452	1.78E-07	1.53E-07	609.5977	0	98.20853	0
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.002273	0.002734	0.003268	0.011805	0.016272	3.47E-05	0.000864	0.000653	2.74E-07	2.36E-07	938.2447	0	664.97	0
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.003113	0.003709	0.004482	0.011785	0.012285	1.002767	0.001095	0.000991	1.3E-05	8.52E-06	33849.87	23867.35	61.40193	787622.6
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.000224	0.000269	0.000322	0.000844	0.001625	3.39E-06	8.19E-05	6.19E-05	2.22E-08	1.91E-08	76.18236	0	27.94014	0
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.00139	0.001672	0.001999	0.005693	0.010599	2.43E-05	0.000431	0.000326	1.45E-07	1.25E-07	496.1766	0	44.06	0
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.004033	0.004851	0.005797	0.023829	0.030492	7.27E-05	0.001155	0.000873	5.29E-07	4.55E-07	1811.853	0	415.7811	0
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.000436	0.000524	0.000626	0.001612	0.00308	6.35E-06	0.000158	0.000119	4.28E-08	3.69E-08	146.6815	0	17.22	0
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.000658	0.000791	0.000946	0.002595	0.004989	1.09E-05	0.000238	0.00018	6.7E-08	5.77E-08	229.7171	0	43.18246	0
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.001326	0.001594	0.001905	0.00832	0.010018	2.4E-05	0.000429	0.000324	1.81E-07	1.56E-07	620.3675	0	385	0
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.009253	0.011129	0.013301	0.048435	0.070326	0.000164	0.002935	0.002218	1.12E-06	9.65E-07	3839.282	0	1174.702	0
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.000251	0.000302	0.000361	0.001026	0.001921	4.38E-06	8.3E-05	6.27E-05	2.61E-08	2.25E-08	89.49871	0	11.24536	0
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.021884	0.026305	0.031462	0.134746	0.159792	0.443619	0.005681	0.004366	8.56E-06	6.14E-06	24435.27	8497.2	3381.746	314396.4
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.092858	0.111688	0.133485	0.341842	0.623462	0.001314	0.030921	0.023362	9.1E-06	7.83E-06	31172.08	0	4747.536	0
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.007355	0.008847	0.010573	0.028195	0.054462	0.000115	0.002694	0.002036	7.37E-07	6.35E-07	2526.434	0	321.0088	0
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.00877	0.010548	0.012607	0.040297	0.066665	0.000155	0.002513	0.001899	9.78E-07	8.43E-07	3353.138	0	528.6369	0
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.125096	0.151366	0.180138	0.750847	1.417838	126.4427	0.079269	0.072928	0.001165	0.001032	4102294	1449422	2593.248	1.8E+08
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.56703	0.686106	0.816523	3.60446	8.936857	760.0456	0.344976	0.317378	0.00701	0.006203	24658844	3084981	2714.174	1.25E+09
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.136912	0.165663	0.197153	0.975209	1.945631	169.3254	0.094254	0.086713	0.001561	0.001382	5493578	1473919	3924.642	2.54E+08
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.033138	0.040097	0.047718	0.200205	0.44065	39.80312	0.024149	0.022218	0.000367	0.000325	1291368	463109.4	1392.921	59912984
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.019778	0.023932	0.028481	0.125582	0.267425	23.1697	0.014382	0.013231	0.000214	0.000189	751715.4	309118.8	789.2194	40623033

Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.120883	0.146269	0.174072	0.721676	1.226448	103.2862	0.079964	0.073567	0.000951	0.000843	3351007	2100705	7261.227	1.69E+08
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.085684	0.103678	0.123385	0.717751	1.20396	112.0722	0.076022	0.069941	0.001034	0.000915	3636059	1736253	7315.142	1.74E+08
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.081382	0.098473	0.11719	0.728468	1.07098	66.21148	0.054366	0.050017	0.00061	0.00054	2148158	418894.8	646.75	1.05E+08
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.725346	0.877669	1.044499	4.509997	10.72713	912.2833	0.488949	0.449833	0.008413	0.007446	29598027	7823432	9480.883	1.58E+09
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.469419	0.567997	0.675964	4.339906	7.564621	593.3834	0.312199	0.287223	0.005472	0.004843	19251670	2099067	5326.812	7.71E+08
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.084506	0.102253	0.121689	0.716823	1.054135	108.7645	0.071876	0.066126	0.001003	0.000888	3528745	2778037	9486.008	1.82E+08
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.006114	0.007398	0.008804	0.041023	0.112694	12.46819	0.004332	0.003986	0.000115	0.000102	404516.5	98537.9	435.6081	25892833
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.788974	0.954658	1.136122	5.382192	9.411756	835.7972	0.648362	0.596493	0.007704	0.006822	27116520	14399691	28611.89	1.42E+09
Statewide	2010	Constructic	Aggregate	Aggregate	Diesel	0.04297	0.051994	0.061877	0.230313	0.394176	34.30482	0.026486	0.024368	0.000316	0.00028	1112982	524356.2	1718.858	41301637
Statewide	2010	Industrial -	Aggregate	Aggregate	Diesel	0.035278	0.042687	0.050801	0.329625	0.486137	52.76548	0.030958	0.028481	0.000487	0.000431	1711918	1647752	6447.155	1.04E+08
Statewide	2010	Industrial -	Aggregate	Aggregate	Diesel	0.309698	0.374734	0.445964	1.733947	3.155078	222.164	0.237022	0.21806	0.002045	0.001813	7207865	7711465	12094.45	6.9E+08
Statewide	2010	Industrial -	Aggregate	Aggregate	Diesel	0.007664	0.009219	0.011018	0.036577	0.056453	0.000117	0.002947	0.002227	8.75E-07	7.54E-07	2999.067	0	1211.994	0
Statewide	2010	Industrial -	Aggregate	Aggregate	Diesel	0.006264	0.007534	0.009005	0.030168	0.04894	0.000114	0.00208	0.001571	7.19E-07	6.2E-07	2465.722	0	298.4174	0
Statewide	2010	Industrial -	Aggregate	Aggregate	Diesel	0.00194	0.002333	0.002788	0.010183	0.015428	3.61E-05	0.000671	0.000507	2.35E-07	2.03E-07	806.3751	0	149.8739	0
Statewide	2010	Industrial -	Aggregate	Aggregate	Diesel	0.1305	0.157905	0.18792	0.742481	1.241431	107.2988	0.0792	0.072864	0.000988	0.000876	3481192	2175319	3078.962	1.92E+08
Statewide	2010	Industrial -	Aggregate	Aggregate	Diesel	0.053271	0.064457	0.07671	0.361823	0.727065	62.90956	0.03933	0.036184	0.00058	0.000513	2041031	594578.3	926.1503	99495939
Statewide	2010	Light Comn	Aggregate	Aggregate	Diesel	0.09526	0.113419	0.137165	0.332879	0.294543	27.73392	0.031069	0.029021	0.000351	0.000238	946324	835667.5	1194.501	30919698
Statewide	2010	Light Comn	Aggregate	Aggregate	Diesel	0.260011	0.310498	0.374208	1.045663	1.323188	130.2845	0.091089	0.094408	0.001486	0.001095	4355865	1682259	14675.94	55514562
Statewide	2010	Light Comn	Aggregate	Aggregate	Diesel	0.001137	0.001359	0.001637	0.004957	0.006905	0.67366	0.000422	0.000449	7.6E-06	5.51E-06	21918.62	16910.45	436.9148	642597.1
Statewide	2010	Light Comn	Aggregate	Aggregate	Diesel	0.163628	0.195408	0.235492	0.609562	0.745195	71.95153	0.055567	0.057556	0.000829	0.000607	2411920	878091.5	7641.706	32489384
Statewide	2010	Light Comn	Aggregate	Aggregate	Diesel	0.428135	0.510123	0.616395	1.523957	1.504212	144.053	0.141924	0.136021	0.001773	0.001228	4883292	3295432	8705.114	1.52E+08
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.022763	0.027543	0.032779	0.191324	0.440953	59.65542	0.017198	0.015822	0.000551	0.000487	1935454	337618.8	1094.73	74606952
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.142707	0.172676	0.205498	1.033268	2.044465	141.2395	0.096861	0.089112	0.001302	0.001153	4582361	1330266	3293.401	3.08E+08
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.278225	0.336652	0.400644	1.871257	4.160032	349.614	0.196351	0.180643	0.003224	0.002854	11342841	2402871	6066.399	5.11E+08
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.365468	0.442216	0.526273	2.527087	5.79588	628.2495	0.251849	0.231702	0.005798	0.005128	20382862	6507960	11790.81	1.03E+09
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.195232	0.23623	0.281133	1.044908	2.909603	237.52	0.12885	0.118542	0.00219	0.001939	7706074	1922499	3811.762	3.64E+08
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.00168	0.00202	0.002415	0.007332	0.012942	2.92E-05	0.000567	0.000428	1.82E-07	1.56E-07	622.562	0	101.3024	0
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.002202	0.002649	0.003166	0.011854	0.015896	3.53E-05	0.000787	0.000595	2.71E-07	2.34E-07	930.2878	0	675.94	0
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.002947	0.00351	0.004243	0.011642	0.012303	1.019184	0.001047	0.000948	1.32E-06	8.64E-06	34336.42	24257.9	62.20866	800510.7
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.000218	0.000262	0.000314	0.000841	0.00161	3.45E-06	7.72E-05	5.83E-05	2.19E-08	1.89E-08	75.16793	0	28.38416	0
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.001411	0.001697	0.002028	0.00579	0.010731	2.47E-05	0.000382	0.000289	1.47E-07	1.27E-07	504.1855	0	44.81	0
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.004101	0.004932	0.005895	0.024252	0.03099	7.4E-05	0.001119	0.000845	5.38E-07	4.63E-07	1843.42	0	423.2707	0
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.000425	0.000511	0.000611	0.00161	0.003072	6.48E-06	0.00015	0.000113	4.23E-08	3.65E-08	145.056	0	17.59	0
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.000642	0.000772	0.000923	0.002587	0.004982	1.11E-05	0.000218	0.000165	6.62E-08	5.7E-08	226.9559	0	43.89467	0
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.001342	0.001614	0.001929	0.008455	0.010112	2.44E-05	0.000377	0.000285	1.84E-07	1.58E-07	629.6165	0	391.24	0
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.009401	0.011307	0.013514	0.049321	0.071369	0.000168	0.002762	0.002087	1.14E-06	9.82E-07	3906.381	0	1196.555	0
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.00026	0.000312	0.000373	0.001063	0.001979	4.54E-06	7.73E-05	5.84E-05	2.7E-08	2.33E-08	92.66474	0	11.65694	0
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.022151	0.026628	0.031846	0.136813	0.162333	0.450882	0.005804	0.004456	8.7E-06	6.24E-06	24823.72	8643.2	3437.166	319798.4
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.089725	0.10792	0.128981	0.337585	0.621583	0.001331	0.028233	0.021331	8.9E-06	7.66E-06	30493.02	0	4810.122	0
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.007178	0.008633	0.010318	0.028177	0.053876	0.000117	0.002517	0.001902	7.29E-07	6.28E-07	2499.389	0	326.4204	0
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.008944	0.010758	0.012857	0.04111	0.067916	0.000158	0.002336	0.001765	9.98E-07	8.6E-07	3420.386	0	538.3533	0
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.127922	0.154785	0.184208	0.771641	1.445208	133.0527	0.080769	0.074308	0.001226	0.001086	4316748	1525584	2684.142	1.89E+08
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.595981	0.721137	0.858213	3.755053	9.193482	799.6696	0.356006	0.327526	0.007375	0.006527	25944401	3247069	2809.306	1.31E+09
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.138596	0.167702	0.199579	0.979509	1.960529	178.2304	0.095559	0.087914	0.001644	0.001455	5782491	1551336	4062.202	2.68E+08
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.034089	0.041248	0.049088	0.210531	0.451221	41.89207	0.024778	0.022796	0.000386	0.000342	1359142	487480	1441.743	63043379
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.020067	0.024281	0.028896	0.128501	0.271173	24.38823	0.01462	0.013451	0.000225	0.000199	791249.4	325385.4	816.8819	42768638
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.121777	0.14735	0.175359	0.750836	1.239315	108.6685	0.080874	0.074404	0.001001	0.000887	3525629	2211033	7515.735	1.78E+08
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.081615	0.098754	0.117525	0.747147	1.185604	117.9268	0.073078	0.067232	0.001088	0.000963	3826005	1828230	7571.54	1.84E+08
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.085469	0.103417	0.123075	0.76162	1.117784	69.71583	0.056814	0.052269	0.000642	0.000569	2261853	440910.6	669.4188	1.1E+08
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.763764	0.924154	1.09982	4.718879	11.11669	959.8327	0.508622	0.467932	0.008851	0.007834	31140714	8234492	9813.191	1.66E+09
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.4926	0.596046	0.709344	4.536336	7.863932	624.5839	0.325162	0.299149	0.00576	0.005098	20263937	2209226	5513.519	8.11E+08
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.08055	0.097465	0.115991	0.74575	1.051016	114.4233	0.069636	0.064065	0.001055	0.000934	3712338	2923875	9818.496	1.92E+08
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.006347	0.00768	0.00914	0.042576	0.116436	13.11244	0.004454	0.004098	0.000121	0.000107	425418.6	103728.2	450.8763	27240319
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.803124	0.97178	1.156498	5.648635	9.618276	878.7237	0.663909	0.610797	0.0081	0.007172	28509222	15156397	29614.75	1.49E+09
Statewide	2011	Constructic	Aggregate	Aggregate	Diesel	0.044048	0.053298	0.063429	0.240543	0.400922	36.11747	0.027143	0.024971	0.000333	0.000295	1171791	551918.9	1779.105	43471340

Statewide	2011	Industrial -	Aggregate	Aggregate	Diesel	0.030365	0.036741	0.043725	0.338438	0.481859	55.53826	0.028312	0.026047	0.000513	0.000453	1801878	1734340	6673.129	1.09E+08
Statewide	2011	Industrial -	Aggregate	Aggregate	Diesel	0.319379	0.386449	0.459906	1.81843	3.249978	233.8385	0.246168	0.226474	0.002152	0.001909	7586633	8116696	12518.37	7.26E+08
Statewide	2011	Industrial -	Aggregate	Aggregate	Diesel	0.007514	0.009037	0.010801	0.035881	0.05595	0.000118	0.002717	0.002053	8.58E-07	7.39E-07	2941.388	0	1226.879	0
Statewide	2011	Industrial -	Aggregate	Aggregate	Diesel	0.00613	0.007373	0.008812	0.029593	0.047877	0.000112	0.001776	0.001342	7.05E-07	6.07E-07	2416.514	0	293.2866	0
Statewide	2011	Industrial -	Aggregate	Aggregate	Diesel	0.001865	0.002244	0.002681	0.009791	0.014816	3.47E-05	0.000561	0.000424	2.26E-07	1.95E-07	775.3882	0	144.0752	0
Statewide	2011	Industrial -	Aggregate	Aggregate	Diesel	0.133948	0.162077	0.192884	0.767576	1.263821	112.9373	0.081076	0.07459	0.00104	0.000922	3664126	2289630	3186.881	2.02E+08
Statewide	2011	Industrial -	Aggregate	Aggregate	Diesel	0.054858	0.066378	0.078995	0.373984	0.747193	66.21541	0.040344	0.037116	0.000611	0.00054	2148286	625823	958.6121	1.05E+08
Statewide	2011	Light Comn	Aggregate	Aggregate	Diesel	0.089755	0.106865	0.129237	0.325555	0.291673	27.92209	0.029762	0.027794	0.000353	0.000239	951051.8	841409	1202.571	31132131
Statewide	2011	Light Comn	Aggregate	Aggregate	Diesel	0.245517	0.293209	0.353345	1.022387	1.301557	131.1682	0.08693	0.090082	0.001496	0.001102	4380943	1693735	14775.25	55893257
Statewide	2011	Light Comn	Aggregate	Aggregate	Diesel	0.001071	0.00128	0.001541	0.004857	0.006764	0.678169	0.000401	0.000427	7.65E-06	5.55E-06	22091.27	17049.15	439.9447	647867.7
Statewide	2011	Light Comn	Aggregate	Aggregate	Diesel	0.154182	0.184134	0.221897	0.596628	0.732249	72.44095	0.052898	0.054729	0.000834	0.00061	2425505	884092	7693.381	32711406
Statewide	2011	Light Comn	Aggregate	Aggregate	Diesel	0.403873	0.48122	0.581465	1.491942	1.486528	145.032	0.13585	0.130127	0.001785	0.001235	4909078	3317792	8764.112	1.53E+08
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.0243	0.029403	0.034992	0.203014	0.457641	62.62738	0.017892	0.016461	0.000578	0.000511	2031876	354460.1	1130.992	78361007
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.149804	0.181263	0.215718	1.079148	2.135223	148.2729	0.101414	0.093301	0.001366	0.00121	4810552	1396694	3402.494	3.23E+08
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.296202	0.358405	0.426531	1.975471	4.375126	367.054	0.208185	0.191531	0.003385	0.002996	11908662	2522778	6267.345	5.37E+08
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.387401	0.468756	0.557858	2.678438	6.007442	659.6478	0.262075	0.241109	0.006087	0.005384	21401546	6832932	12181.38	1.08E+09
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.208038	0.251726	0.299575	1.103136	3.058667	249.381	0.13613	0.125239	0.002299	0.002035	8090893	2018403	3938.024	3.83E+08
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.001719	0.002067	0.002471	0.007538	0.013167	3.01E-05	0.000539	0.000407	1.86E-07	1.61E-07	638.8618	0	104.1383	0
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.002166	0.002606	0.003114	0.011931	0.015834	3.59E-05	0.000728	0.00055	2.71E-07	2.33E-07	928.8878	0	686.9	0
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.002773	0.003304	0.003992	0.011487	0.012321	1.035601	0.000997	0.000904	1.34E-05	8.77E-06	34852	24688.6	63.09632	814723.8
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.000214	0.000257	0.000307	0.000841	0.001598	3.51E-06	7.26E-05	5.48E-05	2.17E-08	1.87E-08	74.53021	0	28.86868	0
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.001432	0.001722	0.002058	0.005878	0.010883	2.51E-05	0.000373	0.000282	1.49E-07	1.29E-07	511.7438	0	45.49	0
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.004169	0.005014	0.005992	0.024668	0.031482	7.53E-05	0.001111	0.000839	5.47E-07	4.71E-07	1874.72	0	430.5414	0
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.000417	0.000502	0.0006	0.00161	0.003052	6.58E-06	0.000142	0.000107	4.2E-08	3.62E-08	143.8401	0	17.86	0
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.00065	0.000782	0.000934	0.002633	0.005015	1.13E-05	0.000205	0.000155	6.72E-08	5.79E-08	230.456	0	44.66656	0
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.001362	0.001639	0.001958	0.008595	0.010261	2.48E-05	0.000369	0.000279	1.87E-07	1.61E-07	639.8098	0	397.71	0
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.009565	0.011504	0.013749	0.050217	0.072505	0.000171	0.002642	0.001996	1.16E-06	9.99E-07	3976.298	0	1217.82	0
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.000263	0.000316	0.000378	0.001079	0.002001	4.61E-06	7.07E-05	5.34E-05	2.74E-08	2.36E-08	93.96268	0	11.82772	0
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.022406	0.026935	0.032212	0.138857	0.16487	0.458145	0.00601	0.004608	8.84E-06	6.34E-06	25194.11	8822.05	3492.682	326415.8
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.086836	0.104445	0.124828	0.33356	0.620679	0.001348	0.026644	0.020131	8.71E-06	7.51E-06	29861.72	0	4868.259	0
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.007065	0.008497	0.010156	0.028288	0.053445	0.000119	0.002355	0.001779	7.26E-07	6.25E-07	2488.375	0	331.8262	0
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.009089	0.010932	0.013065	0.041777	0.068969	0.000161	0.002339	0.001767	1.01E-06	8.74E-07	3475.768	0	546.4068	0
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.134516	0.162764	0.193703	0.812811	1.500709	139.708	0.084315	0.07757	0.001288	0.00114	4532674	1601808	2773.053	1.99E+08
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.635246	0.768647	0.914754	3.971085	9.591877	839.533	0.374271	0.344329	0.007743	0.006852	27237722	3409141	2902.363	1.38E+09
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.147213	0.178128	0.211987	1.039535	2.054601	187.1206	0.100916	0.092843	0.001726	0.001527	6070922	1628799	4196.76	2.81E+08
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.036134	0.043722	0.052033	0.222492	0.473137	43.98412	0.026156	0.024064	0.000406	0.000359	1427016	511776.9	1489.5	66185034
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.021334	0.025814	0.03072	0.135961	0.285302	25.60389	0.015526	0.014284	0.000236	0.000209	830689.9	341628.2	843.9407	44902403
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.12853	0.155522	0.185084	0.794484	1.29258	114.0806	0.084957	0.07816	0.001051	0.000931	3701218	2321404	7764.69	1.87E+08
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.083133	0.100591	0.119711	0.784731	1.214082	123.7939	0.074228	0.06829	0.001142	0.00101	4016358	1919180	7822.344	1.93E+08
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.090353	0.109328	0.130109	0.797496	1.172679	73.18733	0.059802	0.055018	0.000674	0.000597	2374482	462911.1	691.5929	1.16E+08
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.816539	0.988012	1.175816	5.002684	11.65054	1007.613	0.536626	0.493696	0.009291	0.008224	32690893	8645708	10138.25	1.75E+09
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.523226	0.633103	0.753445	4.786234	8.259881	655.8089	0.343003	0.315563	0.006048	0.005353	21276997	2319660	5696.151	8.52E+08
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.081835	0.099021	0.117843	0.783012	1.072806	120.0848	0.070168	0.064555	0.001108	0.00098	3896019	3070055	10143.73	2.01E+08
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.006654	0.008051	0.009582	0.044372	0.120628	13.75636	0.004632	0.004262	0.000127	0.000112	446309.8	108905.9	465.8114	28578472
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.84552	1.02308	1.217549	5.980918	10.03613	922.4189	0.696626	0.640896	0.008503	0.007529	29926865	15913078	30595.72	1.56E+09
Statewide	2012	Constructic	Aggregate	Aggregate	Diesel	0.046539	0.056313	0.067017	0.252936	0.41705	37.92327	0.028546	0.026262	0.000349	0.00031	1230379	579475.1	1838.037	45643631
Statewide	2012	Industrial -	Aggregate	Aggregate	Diesel	0.028124	0.03403	0.040499	0.352712	0.477447	58.31105	0.026322	0.024217	0.000538	0.000476	1891838	1820928	6894.174	1.14E+08
Statewide	2012	Industrial -	Aggregate	Aggregate	Diesel	0.336906	0.407656	0.485144	1.923812	3.400653	245.513	0.259811	0.239027	0.00226	0.002004	7965400	8521928	12933.03	7.63E+08
Statewide	2012	Industrial -	Aggregate	Aggregate	Diesel	0.007387	0.008885	0.010619	0.035203	0.055529	0.000119	0.002524	0.001907	8.43E-07	7.26E-07	2888.217	0	1240.168	0
Statewide	2012	Industrial -	Aggregate	Aggregate	Diesel	0.006008	0.007226	0.008636	0.029065	0.046924	0.00011	0.001617	0.001221	6.92E-07	5.96E-07	2371.473	0	288.623	0
Statewide	2012	Industrial -	Aggregate	Aggregate	Diesel	0.001775	0.002135	0.002551	0.009328	0.014088	3.31E-05	0.000506	0.000382	2.15E-07	1.86E-07	738.4164	0	137.2825	0
Statewide	2012	Industrial -	Aggregate	Aggregate	Diesel	0.142302	0.172185	0.204914	0.816688	1.31939	118.5758	0.08544	0.078604	0.001092	0.000968	3847060	2403941	3292.445	2.12E+08
Statewide	2012	Industrial -	Aggregate	Aggregate	Diesel	0.057082	0.069069	0.082198	0.384634	0.771938	69.52126	0.041661	0.038328	0.000641	0.000567	2255541	657067.6	990.3657	1.1E+08
Statewide	2012	Light Comn	Aggregate	Aggregate	Diesel	0.083139	0.098988	0.119711	0.315544	0.287513	28.02802	0.028173	0.026305	0.000355	0.00024	952734	844573.5	1207.021	31249220
Statewide	2012	Light Comn	Aggregate	Aggregate	Diesel	0.229478	0.274081	0.330256	0.993148	1.274482	131.6634	0.082264	0.085269	0.001501	0.001105	4392478	1700061	14831	56101997

Statewide	2012	Light Comn	Aggregate	Aggregate	Diesel	0.000999	0.001195	0.001438	0.004735	0.006599	0.68116	0.000379	0.000404	7.68E-06	5.57E-06	22167.17	17118.5	441.9443	650503
Statewide	2012	Light Comn	Aggregate	Aggregate	Diesel	0.143351	0.171207	0.206307	0.580098	0.716043	72.71333	0.049825	0.051485	0.000837	0.000611	2431625	887468.3	7722.519	32836327
Statewide	2012	Light Comn	Aggregate	Aggregate	Diesel	0.37522	0.447086	0.540211	1.449095	1.462404	145.5781	0.128619	0.12313	0.001792	0.001237	4919264	3330260	8797.45	1.53E+08
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.02449	0.029632	0.035265	0.211377	0.45202	65.57289	0.017452	0.016056	0.000606	0.000535	2127440	371297.8	1166.497	82146333
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.154025	0.18637	0.221796	1.104712	2.181589	155.3253	0.103897	0.095586	0.001431	0.001268	5039357	1463116	3509.305	3.38E+08
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.309195	0.374127	0.445242	2.049129	4.522986	384.4794	0.216524	0.199202	0.003545	0.003138	12474010	2642813	6464.09	5.62E+08
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.386363	0.467499	0.556363	2.76456	5.868432	691.1641	0.254328	0.233982	0.006379	0.005641	22424058	7157800	12563.78	1.13E+09
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.219046	0.265046	0.315427	1.155614	3.179855	261.1621	0.142133	0.130762	0.002408	0.002132	8473116	2114382	4061.647	4E+08
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.00175	0.002105	0.002516	0.007695	0.013348	3.07E-05	0.000512	0.000386	1.9E-07	1.64E-07	651.4801	0	106.3006	0
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.002143	0.002578	0.003081	0.012023	0.015851	3.64E-05	0.000677	0.000512	2.71E-07	2.34E-07	930.1418	0	697.69	0
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.002592	0.003089	0.003732	0.011324	0.012105	1.052019	0.00093	0.000844	1.36E-05	8.9E-06	35360.15	25028.05	63.96349	825925.7
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.000211	0.000253	0.000303	0.000844	0.001586	3.56E-06	6.83E-05	5.16E-05	2.17E-08	1.87E-08	74.20572	0	29.28052	0
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.001456	0.001751	0.002093	0.005976	0.011065	2.55E-05	0.000373	0.000282	1.52E-07	1.31E-07	520.2935	0	46.25	0
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.00424	0.0051	0.006095	0.025099	0.032004	7.66E-05	0.001124	0.000849	5.56E-07	4.79E-07	1907.216	0	438.0621	0
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.00041	0.000493	0.000589	0.001611	0.003035	6.68E-06	0.000135	0.000102	4.17E-08	3.59E-08	142.8025	0	18.12	0
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.000657	0.000791	0.000945	0.002675	0.005048	1.14E-05	0.000193	0.000146	6.82E-08	5.87E-08	233.7241	0	45.38097	0
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.001383	0.001664	0.001989	0.008729	0.010421	2.52E-05	0.000367	0.000278	1.9E-07	1.63E-07	649.7839	0	403.91	0
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.009718	0.011688	0.013969	0.051043	0.073589	0.000174	0.002577	0.001947	1.18E-06	1.02E-06	4041.016	0	1237.424	0
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.000263	0.000316	0.000378	0.001078	0.001996	4.61E-06	6.88E-05	5.2E-05	2.74E-08	2.36E-08	93.85948	0	11.81857	0
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.022655	0.027236	0.03257	0.140892	0.167294	0.465408	0.006102	0.004673	8.98E-06	6.43E-06	25575.4	8953.45	3548.142	331277.6
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.08576	0.10315	0.123281	0.333464	0.621857	0.001364	0.025709	0.019424	8.67E-06	7.46E-06	29698.39	0	4925.932	0
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.007049	0.008478	0.010132	0.028526	0.053746	0.000121	0.002211	0.001671	7.29E-07	6.28E-07	2498.185	0	337.297	0
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.0092	0.011066	0.013225	0.042299	0.069792	0.000163	0.002378	0.001796	1.03E-06	8.84E-07	3518.863	0	553.0829	0
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.133106	0.161058	0.191673	0.802006	1.473014	146.3753	0.082774	0.076152	0.001349	0.001195	4748985	1677951	2860.105	2.08E+08
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.64503	0.780486	0.928843	4.00289	9.611666	879.5313	0.373049	0.343205	0.008112	0.007179	28535425	3571370	2993.475	1.45E+09
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.14902	0.180315	0.214589	1.049289	2.053634	195.9325	0.101258	0.093157	0.001807	0.001599	6356813	1706304	4328.505	2.94E+08
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.035948	0.043497	0.051765	0.231421	0.472508	46.09161	0.025828	0.023762	0.000425	0.000376	1495392	536149.6	1536.259	69393568
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.020686	0.02503	0.029788	0.137489	0.28052	26.80055	0.014961	0.013764	0.000247	0.000219	869514.4	357818.6	870.4337	47031018
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.128281	0.15522	0.184724	0.818739	1.285593	119.5038	0.083955	0.077239	0.001101	0.000975	3877168	2431725	8008.44	1.95E+08
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.076394	0.092436	0.110007	0.809362	1.168379	129.657	0.067533	0.062131	0.001196	0.001058	4206579	2010708	8067.903	2.02E+08
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.093395	0.113008	0.134488	0.815447	1.202448	76.65912	0.06155	0.056626	0.000706	0.000626	2487121	484931.4	713.3035	1.21E+08
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.8509	1.029588	1.225295	5.199502	11.94722	1055.402	0.551144	0.507052	0.009732	0.008614	34241353	9056777	10456.51	1.83E+09
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.542101	0.655943	0.780626	4.929975	8.4765	687.0039	0.35219	0.324015	0.006335	0.005607	22289085	2429949	5874.965	8.93E+08
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.077295	0.093527	0.111304	0.8098	1.051903	125.733	0.065288	0.060065	0.00116	0.001026	4079270	3216092	10462.16	2.11E+08
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.006675	0.008076	0.009612	0.045514	0.121284	14.40722	0.004625	0.004255	0.000133	0.000118	467426.2	114083.4	480.4342	29932936
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.856066	1.035839	1.232734	6.240862	10.18348	965.7608	0.699899	0.643907	0.008903	0.007882	31333045	16669620	31556.19	1.64E+09
Statewide	2013	Constructic	Aggregate	Aggregate	Diesel	0.048035	0.058123	0.069171	0.265301	0.429052	39.71377	0.029351	0.027003	0.000366	0.000324	1288469	607019.7	1895.737	47827817
Statewide	2013	Industrial -	Aggregate	Aggregate	Diesel	0.024327	0.029436	0.035032	0.362484	0.453825	61.08383	0.022136	0.020365	0.000564	0.000499	1981798	1907516	7110.596	1.2E+08
Statewide	2013	Industrial -	Aggregate	Aggregate	Diesel	0.341137	0.412776	0.491237	1.999196	3.452016	257.1876	0.263761	0.24266	0.002368	0.002099	8344168	8927159	13339.03	7.99E+08
Statewide	2013	Industrial -	Aggregate	Aggregate	Diesel	0.007316	0.008799	0.010516	0.035079	0.055281	0.000121	0.002399	0.001813	8.38E-07	7.22E-07	2871.357	0	1253.77	0
Statewide	2013	Industrial -	Aggregate	Aggregate	Diesel	0.00592	0.00712	0.00851	0.028682	0.04625	0.000108	0.001581	0.001195	6.82E-07	5.88E-07	2338.907	0	285.2353	0
Statewide	2013	Industrial -	Aggregate	Aggregate	Diesel	0.001698	0.002043	0.002441	0.008946	0.013476	3.17E-05	0.000471	0.000356	2.06E-07	1.78E-07	707.5455	0	131.6925	0
Statewide	2013	Industrial -	Aggregate	Aggregate	Diesel	0.142646	0.172602	0.205411	0.842687	1.300332	124.2142	0.084875	0.078085	0.001144	0.001014	4029994	2518252	3395.802	2.22E+08
Statewide	2013	Industrial -	Aggregate	Aggregate	Diesel	0.055874	0.067607	0.080458	0.384331	0.757368	72.82711	0.03969	0.036515	0.000672	0.000594	2362795	688312.2	1021.455	1.15E+08
Statewide	2013	Light Comn	Aggregate	Aggregate	Diesel	0.076091	0.090598	0.109563	0.304772	0.27767	28.1335	0.026062	0.024336	0.000356	0.00024	954283.5	847676	1211.681	31364012
Statewide	2013	Light Comn	Aggregate	Aggregate	Diesel	0.213032	0.254471	0.306581	0.963016	1.231883	132.1495	0.076361	0.079322	0.001506	0.001107	4403729	1706470	14885.9	56313507
Statewide	2013	Light Comn	Aggregate	Aggregate	Diesel	0.000926	0.001108	0.001333	0.004608	0.006355	0.683621	0.000351	0.000375	7.71E-06	5.59E-06	22237.31	17191.5	443.3942	653277
Statewide	2013	Light Comn	Aggregate	Aggregate	Diesel	0.132152	0.157841	0.190187	0.562946	0.690709	72.98246	0.045997	0.047541	0.00084	0.000613	2437451	890764.2	7750.887	32958277
Statewide	2013	Light Comn	Aggregate	Aggregate	Diesel	0.344921	0.410994	0.496587	1.403326	1.412253	146.1167	0.119092	0.114018	0.001798	0.00124	4928773	3342633	8829.859	1.54E+08
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.024054	0.029106	0.034638	0.217027	0.435724	68.52641	0.016463	0.015146	0.000633	0.000559	2223264	388144.2	1201.288	85848787
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.156453	0.189308	0.225292	1.123717	2.202949	162.3722	0.10508	0.096674	0.001497	0.001325	5267987	1529535	3613.973	3.54E+08
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.318104	0.384906	0.45807	2.113256	4.600129	401.8099	0.221694	0.203958	0.003705	0.00328	13036281	2762781	6656.887	5.88E+08
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.378752	0.45829	0.545403	2.838406	5.584873	722.6323	0.242642	0.22323	0.00667	0.005898	23445009	7482782	12938.5	1.18E+09
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.229545	0.277749	0.330545	1.207381	3.299344	272.9187	0.14753	0.135728	0.002516	0.002228	8854546	2210457	4182.789	4.19E+08
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.001772	0.002131	0.002547	0.007798	0.013478	3.12E-05	0.00049	0.00037	1.93E-07	1.66E-07	660.0087	0	107.7008	0

Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.002148	0.002583	0.003087	0.012171	0.015941	3.7E-05	0.000638	0.000482	2.74E-07	2.36E-07	938.4163	0	708.63	0
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.002409	0.002871	0.003469	0.011165	0.0119	1.068437	0.00087	0.000788	1.38E-05	9.02E-06	35839.42	25480.65	64.93931	840861.4
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.00021	0.000253	0.000302	0.000852	0.001598	3.62E-06	6.46E-05	4.88E-05	2.18E-08	1.87E-08	74.58625	0	29.77368	0
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.001479	0.001779	0.002127	0.006073	0.011244	2.6E-05	0.000377	0.000285	1.54E-07	1.33E-07	528.7307	0	47	0
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.004311	0.005185	0.006197	0.025528	0.032532	7.79E-05	0.001141	0.000862	5.66E-07	4.88E-07	1939.678	0	445.5592	0
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.000404	0.000486	0.00058	0.001614	0.003018	6.77E-06	0.000128	9.66E-05	4.14E-08	3.57E-08	142.0548	0	18.37	0
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.000666	0.000801	0.000957	0.002719	0.00509	1.16E-05	0.000189	0.000143	6.92E-08	5.96E-08	237.2024	0	46.12701	0
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.001405	0.00169	0.00202	0.008865	0.010584	2.55E-05	0.000371	0.00028	1.93E-07	1.66E-07	659.951	0	410.2299	0
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.009862	0.011861	0.014176	0.051807	0.074633	0.000176	0.002598	0.001963	1.2E-06	1.03E-06	4101.344	0	1255.587	0
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.00026	0.000313	0.000374	0.001067	0.001975	4.56E-06	6.71E-05	5.07E-05	2.71E-08	2.33E-08	92.87922	0	11.69565	0
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.022904	0.027536	0.032927	0.142929	0.169721	0.472671	0.00617	0.004719	9.12E-06	6.52E-06	25927.48	9110.4	3603.656	337084.8
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.085294	0.102589	0.122611	0.334848	0.62398	0.001381	0.025095	0.018961	8.67E-06	7.47E-06	29700.52	0	4987.752	0
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.007089	0.008526	0.01019	0.028871	0.054228	0.000123	0.002085	0.001575	7.36E-07	6.34E-07	2521.769	0	342.7837	0
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.009285	0.011168	0.013348	0.042677	0.070432	0.000164	0.002401	0.001814	1.04E-06	8.92E-07	3550.768	0	557.4701	0
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.129002	0.156092	0.185763	0.800704	1.410317	152.9929	0.078969	0.072651	0.001411	0.001249	4963686	1754143	2945.41	2.18E+08
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.617128	0.746725	0.888665	3.846273	9.154347	917.7588	0.348914	0.321001	0.008467	0.007491	29775675	3733437	3082.758	1.51E+09
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.145078	0.175544	0.208912	1.016811	1.979364	204.6119	0.097657	0.089844	0.001887	0.00167	6638406	1783747	4457.607	3.08E+08
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.036128	0.043715	0.052024	0.240778	0.472352	48.18317	0.025812	0.023747	0.000444	0.000393	1563250	560475.9	1582.079	72572100
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.02032	0.024587	0.029261	0.140954	0.276225	28.01691	0.014686	0.013511	0.000258	0.000229	908977.7	374076	896.3952	49172887
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.127936	0.154802	0.184228	0.84785	1.268737	124.9013	0.082848	0.07622	0.001151	0.001019	4052286	2542171	8247.298	2.04E+08
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.071052	0.085973	0.102315	0.835622	1.105808	135.5345	0.061703	0.056767	0.001251	0.001106	4397269	2101628	8308.535	2.11E+08
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.095864	0.115996	0.138045	0.820878	1.222421	80.07784	0.062713	0.057696	0.000737	0.000654	2598037	506944	734.5784	1.27E+08
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.85987	1.040442	1.238213	5.27272	11.91085	1102.265	0.547005	0.503245	0.010165	0.008997	35761777	9467828	10768.38	1.91E+09
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.544764	0.659165	0.784461	4.899836	8.450384	718.0311	0.350259	0.322238	0.006622	0.00586	23295728	2540228	6050.191	9.33E+08
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.071722	0.086783	0.103279	0.835502	0.99953	131.4506	0.058863	0.054154	0.001213	0.001073	4264770	3362019	10774.2	2.2E+08
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.006601	0.007988	0.009506	0.046669	0.119689	15.06629	0.004512	0.004151	0.000139	0.000123	488809	119255	494.7636	31299739
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.842599	1.019545	1.213342	6.452073	10.08164	1008.15	0.684619	0.629849	0.009296	0.008228	32708314	17426398	32497.38	1.71E+09
Statewide	2014	Constructic	Aggregate	Aggregate	Diesel	0.048629	0.058841	0.070026	0.276054	0.43056	41.47732	0.029589	0.027222	0.000382	0.000339	1345686	634570.1	1952.279	49976773
Statewide	2014	Industrial -	Aggregate	Aggregate	Diesel	0.021432	0.025932	0.030861	0.374074	0.422006	63.85662	0.01857	0.017084	0.00059	0.000521	2071758	1994104	7322.676	1.25E+08
Statewide	2014	Industrial -	Aggregate	Aggregate	Diesel	0.336645	0.407341	0.484769	2.058848	3.404634	268.8621	0.260711	0.239854	0.002476	0.002194	8722935	9332391	13736.87	8.35E+08
Statewide	2014	Industrial -	Aggregate	Aggregate	Diesel	0.007264	0.008738	0.010443	0.035079	0.055068	0.000122	0.002323	0.001755	8.36E-07	7.2E-07	2863.829	0	1266.088	0
Statewide	2014	Industrial -	Aggregate	Aggregate	Diesel	0.005853	0.007039	0.008413	0.028383	0.045733	0.000107	0.00156	0.001179	6.75E-07	5.82E-07	2313.756	0	282.5373	0
Statewide	2014	Industrial -	Aggregate	Aggregate	Diesel	0.001628	0.001958	0.00234	0.008587	0.01292	3.04E-05	0.000448	0.000339	1.98E-07	1.71E-07	678.8394	0	126.4331	0
Statewide	2014	Industrial -	Aggregate	Aggregate	Diesel	0.144268	0.174565	0.207746	0.869183	1.299932	129.8527	0.085081	0.078274	0.001196	0.00106	4212928	2632564	3497.084	2.32E+08
Statewide	2014	Industrial -	Aggregate	Aggregate	Diesel	0.053399	0.064612	0.076894	0.372383	0.72404	76.13295	0.037388	0.034397	0.000702	0.000621	2470050	719556.8	1051.921	1.2E+08
Statewide	2014	Light Comn	Aggregate	Aggregate	Diesel	0.068976	0.082127	0.099318	0.294098	0.268008	28.24051	0.023905	0.022326	0.000357	0.00024	955824.8	850760.3	1216.511	31478129
Statewide	2014	Light Comn	Aggregate	Aggregate	Diesel	0.196807	0.235126	0.283223	0.933909	1.190643	132.6402	0.070486	0.073418	0.001512	0.00111	4415155	1712803	14941.03	56522487
Statewide	2014	Light Comn	Aggregate	Aggregate	Diesel	0.000856	0.001024	0.001232	0.004489	0.006123	0.686444	0.000324	0.000347	7.74E-06	5.61E-06	22300.9	17271.8	445.2541	656328.4
Statewide	2014	Light Comn	Aggregate	Aggregate	Diesel	0.121092	0.144645	0.174268	0.546288	0.666165	73.25242	0.042187	0.043629	0.000843	0.000614	2443295	894063.9	7779.754	33080362
Statewide	2014	Light Comn	Aggregate	Aggregate	Diesel	0.314315	0.374537	0.45252	1.357716	1.363259	146.6587	0.109408	0.104774	0.001805	0.001242	4938138	3355102	8862.487	1.54E+08
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.025105	0.030377	0.036151	0.227889	0.439692	71.45874	0.016604	0.015276	0.00066	0.000583	2318400	404993.4	1235.409	89523084
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.160384	0.194065	0.230953	1.156753	2.248963	169.4069	0.10719	0.098615	0.001561	0.001383	5496219	1595984	3716.622	3.69E+08
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.331444	0.401047	0.47728	2.18553	4.741309	419.3305	0.229767	0.211386	0.003867	0.003423	13604717	2882725	6845.964	6.13E+08
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.392199	0.47456	0.564766	2.96396	5.620178	753.9583	0.245532	0.225889	0.006959	0.006154	24461348	7807547	13306	1.23E+09
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.240959	0.291561	0.346981	1.26137	3.425835	284.7447	0.153418	0.141144	0.002625	0.002324	9238228	2306398	4301.594	4.37E+08
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.001788	0.002151	0.00257	0.007866	0.013583	3.15E-05	0.000481	0.000363	1.94E-07	1.67E-07	665.8326	0	108.6187	0
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.00216	0.002598	0.003105	0.012331	0.016056	3.76E-05	0.000624	0.000471	2.77E-07	2.38E-07	948.3325	0	719.57	0
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.00224	0.00267	0.003225	0.011052	0.011733	1.084856	0.000812	0.000735	1.41E-05	9.15E-06	36384.8	25845.65	65.87926	852906.5
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.000212	0.000254	0.000304	0.000862	0.001614	3.68E-06	6.13E-05	4.63E-05	2.2E-08	1.89E-08	75.28738	0	30.28191	0
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.001503	0.001807	0.00216	0.006169	0.011421	2.64E-05	0.000383	0.000289	1.57E-07	1.35E-07	537.0554	0	47.74	0
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.004384	0.005273	0.006302	0.025963	0.033076	7.92E-05	0.001159	0.000876	5.76E-07	4.96E-07	1972.615	0	453.1446	0
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.000402	0.000483	0.000577	0.001623	0.003037	6.87E-06	0.000121	9.15E-05	4.15E-08	3.58E-08	142.2489	0	18.65	0
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.000675	0.000812	0.00097	0.002764	0.005143	1.18E-05	0.000187	0.000141	7.03E-08	6.05E-08	240.8617	0	46.89379	0
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.001427	0.001716	0.002051	0.009001	0.010746	2.59E-05	0.000377	0.000285	1.96E-07	1.68E-07	670.07	0	416.52	0
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.01	0.012027	0.014375	0.052532	0.075655	0.000179	0.002624	0.001983	1.21E-06	1.05E-06	4158.728	0	1272.879	0

Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.000256	0.000308	0.000368	0.00105	0.001945	4.49E-06	6.55E-05	4.95E-05	2.67E-08	2.3E-08	91.44704	0	11.5153	0
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.023159	0.027845	0.033294	0.144987	0.172163	0.479935	0.006231	0.004761	9.26E-06	6.62E-06	26315.93	9289.25	3659.116	343702.2
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.084955	0.102183	0.122125	0.336508	0.626236	0.001398	0.024592	0.018581	8.68E-06	7.47E-06	29735.64	0	5049.494	0
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.007171	0.008625	0.010308	0.029302	0.054797	0.000125	0.001984	0.001499	7.46E-07	6.42E-07	2555.857	0	348.2696	0
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.009346	0.011241	0.013434	0.042956	0.07089	0.000165	0.002411	0.001822	1.04E-06	8.98E-07	3573.946	0	561.1791	0
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.130256	0.15761	0.187569	0.823348	1.417202	159.6214	0.078857	0.072549	0.001472	0.001303	5178739	1830279	3029.07	2.27E+08
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.628094	0.759994	0.904456	3.882078	9.209468	957.1526	0.348894	0.320982	0.008831	0.007812	31053760	3895584	3170.318	1.58E+09
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.15038	0.18196	0.216547	1.050333	2.02468	213.4339	0.100235	0.092216	0.001969	0.001742	6924629	1861186	4584.217	3.21E+08
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.037271	0.045098	0.053671	0.251533	0.483686	50.27837	0.026484	0.024365	0.000464	0.00041	1631226	584811.6	1627.015	75730060
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.020905	0.025295	0.030103	0.147107	0.28124	29.23963	0.014956	0.01376	0.00027	0.000239	948647.6	390314	921.8557	51323689
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.132014	0.159737	0.1901	0.885537	1.295249	130.3348	0.084933	0.078138	0.001201	0.001064	4228569	2652518	8481.548	2.13E+08
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.071516	0.086535	0.102983	0.871471	1.103902	141.436	0.061022	0.05614	0.001306	0.001154	4588736	2192902	8544.525	2.2E+08
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.100109	0.121132	0.144157	0.849976	1.267958	83.55741	0.065098	0.059891	0.00077	0.000682	2710928	528946.4	755.4428	1.32E+08
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.886491	1.072655	1.276548	5.421124	12.08509	1149.43	0.555877	0.511406	0.0106	0.009381	37292002	9879015	11074.24	1.99E+09
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.560106	0.677728	0.806552	4.957605	8.605626	749.0402	0.357017	0.328456	0.006908	0.006114	24301786	2650506	6222.036	9.74E+08
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.072281	0.08746	0.104085	0.871255	0.995481	137.1171	0.057677	0.053063	0.001266	0.001119	4448615	3508047	11080.23	2.3E+08
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.006914	0.008365	0.009956	0.048827	0.124576	15.71755	0.004688	0.004313	0.000145	0.000128	509938.5	124452.8	508.8164	32660278
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.863122	1.044378	1.242896	6.745318	10.23579	1051.462	0.693431	0.637957	0.009695	0.008582	34113529	18182954	33420.41	1.78E+09
Statewide	2015	Constructic	Aggregate	Aggregate	Diesel	0.050624	0.061255	0.072898	0.289552	0.446244	43.26846	0.030659	0.028206	0.000399	0.000353	1403798	662132.9	2007.73	52130263
Statewide	2015	Industrial -	Aggregate	Aggregate	Diesel	0.021164	0.025608	0.030476	0.390168	0.411522	66.6294	0.017078	0.015712	0.000615	0.000544	2161718	2080692	7530.663	1.31E+08
Statewide	2015	Industrial -	Aggregate	Aggregate	Diesel	0.340015	0.411418	0.489622	2.131078	3.416555	280.5367	0.262502	0.241502	0.002584	0.00229	9101703	9737622	14127.05	8.71E+08
Statewide	2015	Industrial -	Aggregate	Aggregate	Diesel	0.007224	0.008688	0.010384	0.035059	0.054854	0.000123	0.002262	0.001709	8.34E-07	7.18E-07	2856.829	0	1276.876	0
Statewide	2015	Industrial -	Aggregate	Aggregate	Diesel	0.005802	0.006978	0.00834	0.028146	0.04534	0.000106	0.001544	0.001167	6.69E-07	5.77E-07	2294.13	0	280.2503	0
Statewide	2015	Industrial -	Aggregate	Aggregate	Diesel	0.001564	0.001881	0.002248	0.00825	0.012413	2.92E-05	0.000429	0.000324	1.9E-07	1.64E-07	652.1938	0	121.4719	0
Statewide	2015	Industrial -	Aggregate	Aggregate	Diesel	0.146788	0.177613	0.211374	0.901291	1.305759	135.4912	0.085562	0.078717	0.001248	0.001106	4395861	2746875	3596.413	2.42E+08
Statewide	2015	Industrial -	Aggregate	Aggregate	Diesel	0.054012	0.065354	0.077777	0.38327	0.718872	79.4388	0.036852	0.033904	0.000733	0.000648	2577304	750801.4	1081.799	1.26E+08
Statewide	2015	Light Comn	Aggregate	Aggregate	Diesel	0.062384	0.07428	0.089826	0.285009	0.259362	28.3463	0.021815	0.020379	0.000359	0.000241	957438.1	853884.6	1221.231	31593732
Statewide	2015	Light Comn	Aggregate	Aggregate	Diesel	0.181931	0.21739	0.261809	0.909091	1.15346	133.1298	0.064881	0.067787	0.001517	0.001113	4427069	1719099	14996.36	56730264
Statewide	2015	Light Comn	Aggregate	Aggregate	Diesel	0.000791	0.000947	0.001139	0.004387	0.005911	0.688985	0.000298	0.00032	7.76E-06	5.62E-06	22348.61	17322.9	446.704	658270.2
Statewide	2015	Light Comn	Aggregate	Aggregate	Diesel	0.110975	0.132573	0.159706	0.532123	0.644037	73.52061	0.038567	0.039921	0.000846	0.000616	2449449	897224.8	7808.173	33197316
Statewide	2015	Light Comn	Aggregate	Aggregate	Diesel	0.285994	0.340804	0.411745	1.31878	1.319416	147.2024	0.100069	0.095871	0.001811	0.001245	4948500	3367534	8895.356	1.55E+08
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.024487	0.029629	0.035261	0.233115	0.416964	74.4322	0.015563	0.014318	0.000687	0.000608	2414871	421884.4	1268.896	93034871
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.159812	0.193372	0.230129	1.158101	2.22782	176.4686	0.106014	0.097533	0.001627	0.00144	5725330	1662345	3817.363	3.84E+08
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.339829	0.411193	0.489353	2.237173	4.810833	436.7935	0.233932	0.215218	0.004028	0.003565	14171282	3002718	7031.529	6.38E+08
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.381589	0.461722	0.549487	3.01716	5.283812	785.0689	0.231062	0.212577	0.007247	0.006408	25470696	8132417	13666.67	1.28E+09
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.246867	0.298709	0.355489	1.302741	3.47913	296.3827	0.155153	0.142741	0.002733	0.002419	9615812	2402415	4418.192	4.54E+08
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.001802	0.002167	0.00259	0.007922	0.013677	3.18E-05	0.000474	0.000358	1.96E-07	1.69E-07	670.7136	0	109.3863	0
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.002174	0.002615	0.003126	0.012493	0.016196	3.81E-05	0.000615	0.000464	2.8E-07	2.41E-07	958.7628	0	730.49	0
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.002074	0.002472	0.002986	0.010954	0.011576	1.101273	0.000754	0.000681	1.43E-05	9.28E-06	36893.55	26298.25	66.85122	867842.2
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.000213	0.000257	0.000307	0.000872	0.001628	3.73E-06	5.84E-05	4.41E-05	2.22E-08	1.91E-08	76.07573	0	30.68512	0
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.001524	0.001834	0.002191	0.006258	0.011586	2.67E-05	0.000389	0.000294	1.59E-07	1.37E-07	544.8176	0	48.43	0
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.004457	0.005361	0.006407	0.026393	0.033624	8.05E-05	0.001176	0.000889	5.85E-07	5.04E-07	2005.348	0	460.6681	0
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.000403	0.000484	0.000579	0.001639	0.003063	6.98E-06	0.000116	8.73E-05	4.18E-08	3.6E-08	143.1805	0	18.93	0
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.000683	0.000822	0.000982	0.002805	0.005193	1.2E-05	0.000184	0.000139	7.12E-08	6.14E-08	244.1744	0	47.58473	0
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.001449	0.001742	0.002083	0.00914	0.010912	2.63E-05	0.000383	0.00029	1.99E-07	1.71E-07	680.3981	0	422.94	0
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.010131	0.012185	0.014563	0.053217	0.076639	0.000181	0.002651	0.002003	1.23E-06	1.06E-06	4213.038	0	1289.357	0
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.000253	0.000304	0.000363	0.001038	0.001921	4.43E-06	6.44E-05	4.87E-05	2.64E-08	2.27E-08	90.34102	0	11.37603	0
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.023417	0.028156	0.033665	0.147054	0.174609	0.487198	0.006292	0.004802	9.4E-06	6.7E-06	26653.12	9453.5	3714.489	349779.5
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.08466	0.101827	0.121699	0.338063	0.628017	0.001413	0.024137	0.018237	8.69E-06	7.48E-06	29771.62	0	5105.188	0
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.007275	0.00875	0.010458	0.029783	0.055476	0.000127	0.001967	0.001486	7.57E-07	6.52E-07	2595.849	0	353.9885	0
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.009375	0.011276	0.013477	0.043116	0.071115	0.000166	0.002415	0.001824	1.05E-06	9.01E-07	3586.477	0	564.0998	0
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.125535	0.151897	0.18077	0.82608	1.338444	166.1554	0.074379	0.068429	0.001532	0.001356	5390730	1906442	3111.175	2.36E+08
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.611867	0.740359	0.881089	3.836917	8.850621	995.9855	0.330664	0.304211	0.00919	0.008129	32313654	4057734	3256.252	1.64E+09
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.150877	0.182562	0.217263	1.069794	1.997235	222.3005	0.099469	0.091511	0.002051	0.001814	7212296	1938593	4708.476	3.34E+08
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.036478	0.044138	0.052528	0.260383	0.469659	52.3627	0.025636	0.023585	0.000483	0.000427	1698850	609147.2	1671.117	78899001

Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.020618	0.024948	0.02969	0.150672	0.271274	30.45699	0.014476	0.013318	0.000281	0.000249	988143.3	406575.7	946.8432	53448967
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.128611	0.155619	0.1852	0.907	1.252156	135.7419	0.081651	0.075119	0.001251	0.001108	4403996	2762867	8711.447	2.22E+08
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.067343	0.081485	0.096974	0.902369	1.040157	147.3756	0.055346	0.050918	0.001361	0.001203	4781438	2284467	8776.13	2.29E+08
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.102487	0.124009	0.147581	0.854236	1.28688	86.97837	0.066114	0.060825	0.000801	0.00071	2821917	550943.9	775.9196	1.38E+08
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.877566	1.061855	1.263695	5.444495	11.79219	1196.766	0.540467	0.497229	0.011038	0.009768	38827747	10290046	11374.42	2.08E+09
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.557582	0.674674	0.802918	4.910664	8.456199	779.8035	0.350248	0.322228	0.007193	0.006365	25299865	2760840	6390.689	1.01E+09
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.070157	0.08489	0.101026	0.903313	0.96756	142.7982	0.053908	0.049596	0.001318	0.001165	4632931	3654220	11380.56	2.39E+08
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.006776	0.008199	0.009758	0.049565	0.119537	16.37403	0.004497	0.004137	0.000151	0.000134	531237.4	129603.9	522.6083	33998365
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.847869	1.025922	1.220932	6.956085	10.00447	1093.8	0.671764	0.618023	0.010087	0.008927	35487129	18939824	34326.29	1.85E+09
Statewide	2016	Constructic	Aggregate	Aggregate	Diesel	0.050669	0.061309	0.072963	0.29769	0.445148	45.08933	0.030453	0.028017	0.000415	0.000368	1462874	689649.2	2062.151	54295397
Statewide	2016	Industrial -	Aggregate	Aggregate	Diesel	0.019563	0.023671	0.028171	0.403467	0.383047	69.40218	0.013846	0.012739	0.000641	0.000566	2251677	2167280	7734.788	1.36E+08
Statewide	2016	Industrial -	Aggregate	Aggregate	Diesel	0.330731	0.400184	0.476252	2.181332	3.338049	292.2112	0.255201	0.234785	0.002692	0.002385	9480471	10142853	14509.97	9.07E+08
Statewide	2016	Industrial -	Aggregate	Aggregate	Diesel	0.007182	0.008639	0.010325	0.035	0.054584	0.000123	0.00221	0.00167	8.31E-07	7.16E-07	2847.725	0	1284.848	0
Statewide	2016	Industrial -	Aggregate	Aggregate	Diesel	0.005735	0.006898	0.008244	0.027833	0.044821	0.000105	0.001526	0.001153	6.62E-07	5.7E-07	2268.314	0	277.2629	0
Statewide	2016	Industrial -	Aggregate	Aggregate	Diesel	0.001504	0.001809	0.002161	0.007937	0.011935	2.81E-05	0.000411	0.00031	1.83E-07	1.58E-07	627.3022	0	116.8854	0
Statewide	2016	Industrial -	Aggregate	Aggregate	Diesel	0.14538	0.17591	0.209347	0.926228	1.289859	141.1296	0.084028	0.077306	0.0013	0.001152	4578795	2861186	3693.896	2.52E+08
Statewide	2016	Industrial -	Aggregate	Aggregate	Diesel	0.054379	0.065799	0.078306	0.394509	0.711946	82.74465	0.036271	0.03337	0.000763	0.000675	2684559	782046	1111.122	1.31E+08
Statewide	2016	Light Comn	Aggregate	Aggregate	Diesel	0.056036	0.066724	0.080685	0.276375	0.250876	28.37215	0.019748	0.018459	0.000359	0.000241	956610.1	854768	1222.141	31626414
Statewide	2016	Light Comn	Aggregate	Aggregate	Diesel	0.168118	0.200926	0.241923	0.888304	1.119732	133.259	0.059525	0.062454	0.001518	0.001113	4427647	1720709	15010.89	56783382
Statewide	2016	Light Comn	Aggregate	Aggregate	Diesel	0.000733	0.000877	0.001054	0.004301	0.005726	0.68968	0.000273	0.000295	7.77E-06	5.64E-06	22412.32	17315.6	447.1038	657992.8
Statewide	2016	Light Comn	Aggregate	Aggregate	Diesel	0.102081	0.121968	0.146902	0.519943	0.624324	73.5929	0.035241	0.036585	0.000847	0.000616	2449497	898115.4	7815.972	33230268
Statewide	2016	Light Comn	Aggregate	Aggregate	Diesel	0.259174	0.308868	0.373127	1.282268	1.277413	147.3379	0.090967	0.08727	0.001813	0.001244	4945786	3370640	8903.495	1.55E+08
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.024165	0.029239	0.034797	0.241266	0.404739	77.41561	0.014891	0.013699	0.000715	0.000632	2511664	438711.3	1301.782	96827132
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.154681	0.187164	0.22274	1.140889	2.151596	183.5613	0.101538	0.093415	0.001692	0.001498	5955444	1728750	3916.301	4E+08
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.342541	0.414475	0.493259	2.268606	4.792786	454.2537	0.233858	0.21515	0.00419	0.003708	14737762	3122698	7213.77	6.64E+08
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.370945	0.448843	0.534161	3.089116	4.980916	816.5757	0.217074	0.199708	0.007539	0.006665	26492900	8457337	14020.88	1.33E+09
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.248523	0.300713	0.357873	1.334033	3.464627	308.0097	0.153927	0.141613	0.00284	0.002514	9993037	2498392	4532.701	4.72E+08
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.001813	0.00218	0.002606	0.007969	0.013762	3.2E-05	0.000469	0.000354	1.97E-07	1.7E-07	674.75	0	110.0305	0
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.002194	0.002639	0.003154	0.012663	0.016372	3.87E-05	0.00061	0.000461	2.83E-07	2.44E-07	970.2951	0	741.5801	0
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.001903	0.002269	0.00274	0.010853	0.01142	1.117689	0.000693	0.000625	1.45E-05	9.4E-06	37354.96	26637.7	67.89698	879044.1
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.000217	0.000261	0.000312	0.000888	0.001652	3.79E-06	5.82E-05	4.4E-05	2.26E-08	1.94E-08	77.36288	0	31.23784	0
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.001546	0.00186	0.002223	0.006349	0.011754	2.71E-05	0.000395	0.000299	1.61E-07	1.39E-07	552.6924	0	49.13	0
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.004528	0.005446	0.006509	0.026814	0.034162	8.18E-05	0.001193	0.000901	5.94E-07	5.12E-07	2037.336	0	468.0151	0
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.000407	0.00049	0.000585	0.001663	0.003103	7.1E-06	0.000111	8.39E-05	4.23E-08	3.65E-08	145.0944	0	19.26	0
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.000692	0.000832	0.000994	0.002839	0.005256	1.21E-05	0.000182	0.000138	7.21E-08	6.21E-08	247.1423	0	48.16311	0
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.00147	0.001768	0.002113	0.009272	0.01107	2.67E-05	0.000389	0.000294	2.01E-07	1.73E-07	690.2436	0	429.06	0
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.010258	0.012338	0.014746	0.053889	0.077599	0.000183	0.002675	0.002021	1.24E-06	1.07E-06	4266.116	0	1305.741	0
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.000252	0.000304	0.000363	0.001036	0.001918	4.43E-06	6.44E-05	4.86E-05	2.63E-08	2.27E-08	90.19641	0	11.35782	0
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.023677	0.028469	0.034038	0.149127	0.177063	0.49446	0.006353	0.004844	9.54E-06	6.79E-06	26997.76	9617.75	3769.917	355856.7
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.084553	0.101698	0.121546	0.339983	0.630137	0.001428	0.023717	0.01792	8.71E-06	7.5E-06	29854.16	0	5160.249	0
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.007379	0.008876	0.010608	0.030251	0.056184	0.000129	0.001964	0.001484	7.69E-07	6.62E-07	2635.165	0	359.5491	0
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.009415	0.011324	0.013534	0.043328	0.071413	0.000167	0.002425	0.001832	1.05E-06	9.06E-07	3603.129	0	567.9916	0
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.119781	0.144934	0.172484	0.837462	1.259823	172.7299	0.070135	0.064524	0.001593	0.00141	5604031	1982609	3191.809	2.46E+08
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.589757	0.713606	0.84925	3.75368	8.416495	1035.553	0.308955	0.284238	0.009557	0.008452	33597364	4219810	3340.646	1.7E+09
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.149477	0.180867	0.215247	1.074167	1.948957	231.0239	0.097351	0.089563	0.002131	0.001886	7495317	2016081	4830.508	3.47E+08
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.035609	0.043087	0.051277	0.269503	0.454169	54.43585	0.024827	0.022841	0.000502	0.000444	1766111	633460.2	1714.428	82045333
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.019791	0.023947	0.028499	0.154789	0.256979	31.67727	0.013603	0.012515	0.000292	0.000259	1027734	422808.2	971.3833	55574905
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.124926	0.15116	0.179893	0.929927	1.21241	141.13	0.078396	0.072124	0.001301	0.001152	4578808	2873364	8937.228	2.31E+08
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.063408	0.076723	0.091307	0.932601	0.967365	153.2613	0.049436	0.045481	0.001415	0.001251	4972394	2375251	9003.587	2.39E+08
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.10026	0.121315	0.144374	0.844591	1.270328	90.54243	0.064309	0.059164	0.000834	0.000739	2937549	572976.1	796.0297	1.43E+08
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.858833	1.039188	1.23672	5.525019	11.3523	1244.395	0.519689	0.478114	0.011479	0.010157	40373010	10701171	11669.21	2.16E+09
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.545777	0.660391	0.785919	4.764729	8.176077	810.9035	0.336885	0.309934	0.007481	0.006618	26308871	2871110	6556.321	1.05E+09
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.068469	0.082847	0.098595	0.935854	0.941441	148.4882	0.050275	0.046253	0.001371	0.001212	4817536	3800162	11675.52	2.49E+08
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.006747	0.008164	0.009716	0.050925	0.116664	17.06182	0.004442	0.004086	0.000158	0.000139	553551.8	134797.8	536.1531	35410751
Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.821757	0.994327	1.183331	7.156014	9.666569	1136.367	0.638268	0.587207	0.010482	0.009275	36868191	19696073	35215.95	1.93E+09

Statewide	2017	Constructic	Aggregate	Aggregate	Diesel	0.050023	0.060527	0.072032	0.306484	0.439404	46.90428	0.030049	0.027645	0.000432	0.000383	1521758	717219.2	2115.597	56462468
Statewide	2017	Industrial -	Aggregate	Aggregate	Diesel	0.018083	0.02188	0.026039	0.417036	0.359152	72.17497	0.0109	0.010028	0.000667	0.000589	2341637	2253868	7935.256	1.42E+08
Statewide	2017	Industrial -	Aggregate	Aggregate	Diesel	0.320555	0.387872	0.461599	2.237283	3.252935	303.8857	0.245581	0.225935	0.0028	0.00248	9859238	10548085	14886.03	9.44E+08
Statewide	2017	Industrial -	Aggregate	Aggregate	Diesel	0.007145	0.008593	0.01027	0.034913	0.054272	0.000124	0.002153	0.001626	8.28E-07	7.13E-07	2837.715	0	1289.93	0
Statewide	2017	Industrial -	Aggregate	Aggregate	Diesel	0.005659	0.006807	0.008135	0.027476	0.044231	0.000103	0.001506	0.001138	6.53E-07	5.63E-07	2238.839	0	273.814	0
Statewide	2017	Industrial -	Aggregate	Aggregate	Diesel	0.001438	0.001729	0.002067	0.007595	0.011413	2.69E-05	0.000391	0.000296	1.75E-07	1.51E-07	600.1254	0	111.8722	0
Statewide	2017	Industrial -	Aggregate	Aggregate	Diesel	0.142807	0.172796	0.205642	0.952298	1.259408	146.7681	0.081078	0.074591	0.001353	0.001198	4761729	2975497	3789.634	2.62E+08
Statewide	2017	Industrial -	Aggregate	Aggregate	Diesel	0.053496	0.06473	0.077034	0.403917	0.694074	86.0505	0.034815	0.03203	0.000794	0.000702	2791814	813290.7	1139.92	1.36E+08
Statewide	2017	Light Comn	Aggregate	Aggregate	Diesel	0.049978	0.059513	0.071961	0.268476	0.242938	28.40069	0.017746	0.016603	0.000359	0.00024	955883.3	855567.3	1223.521	31655990
Statewide	2017	Light Comn	Aggregate	Aggregate	Diesel	0.155297	0.185649	0.223465	0.870691	1.089468	133.3869	0.054472	0.057449	0.00152	0.001114	4428470	1722402	15025.45	56839271
Statewide	2017	Light Comn	Aggregate	Aggregate	Diesel	0.000679	0.000813	0.000977	0.004232	0.005566	0.690704	0.00025	0.000272	7.78E-06	5.64E-06	22428.91	17315.6	448.054	657992.8
Statewide	2017	Light Comn	Aggregate	Aggregate	Diesel	0.094023	0.112365	0.135301	0.509468	0.606753	73.66637	0.032153	0.033523	0.000847	0.000616	2449906	899046.1	7823.701	33264706
Statewide	2017	Light Comn	Aggregate	Aggregate	Diesel	0.233818	0.278679	0.336616	1.249111	1.238582	147.4836	0.082239	0.079057	0.001814	0.001244	4943898	3373907	8912.375	1.55E+08
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.021805	0.026384	0.031399	0.240616	0.354151	80.16023	0.012798	0.011774	0.00074	0.000654	2600711	455569.6	1334.101	1E+08
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.142072	0.171907	0.204583	1.087756	1.970046	190.6394	0.091866	0.084517	0.001758	0.001556	6185084	1795171	4013.527	4.15E+08
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.326116	0.3946	0.469607	2.232102	4.479061	471.2145	0.219726	0.202148	0.004347	0.003846	15288034	3242672	7392.86	6.89E+08
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.326588	0.395171	0.470286	3.087321	4.238379	847.9592	0.180231	0.165812	0.00783	0.006921	27511101	8782172	14368.96	1.39E+09
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.239183	0.289412	0.344424	1.336786	3.305003	319.4272	0.144812	0.133227	0.002946	0.002607	10363463	2594350	4645.231	4.9E+08
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.001823	0.002193	0.002621	0.008021	0.013842	3.21E-05	0.000469	0.000354	1.98E-07	1.71E-07	678.9695	0	110.7589	0
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.002213	0.002662	0.003181	0.012825	0.01655	3.93E-05	0.000606	0.000458	2.86E-07	2.47E-07	981.435	0	752.31	0
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.001734	0.002068	0.002497	0.010755	0.011268	1.134108	0.000631	0.000568	1.47E-05	9.53E-06	37893.08	27101.25	68.84523	894341.3
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.000219	0.000264	0.000315	0.000898	0.001669	3.84E-06	5.81E-05	4.39E-05	2.28E-08	1.97E-08	78.26873	0	31.61674	0
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.00157	0.001888	0.002257	0.006444	0.011931	2.75E-05	0.000401	0.000303	1.64E-07	1.41E-07	561.017	0	49.87	0
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.004601	0.005534	0.006614	0.027244	0.03471	8.31E-05	0.001211	0.000915	6.04E-07	5.2E-07	2070.045	0	475.5295	0
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.000411	0.000495	0.000591	0.001685	0.003137	7.2E-06	0.00011	8.33E-05	4.28E-08	3.69E-08	146.8151	0	19.53	0
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.000701	0.000843	0.001008	0.002878	0.005329	1.23E-05	0.000181	0.000137	7.31E-08	6.3E-08	250.5655	0	48.83023	0
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.001491	0.001794	0.002144	0.009408	0.011232	2.71E-05	0.000395	0.000298	2.04E-07	1.76E-07	700.3786	0	435.36	0
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.010382	0.012487	0.014924	0.054555	0.078538	0.000186	0.002703	0.002042	1.26E-06	1.09E-06	4318.42	0	1322.119	0
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.000254	0.000305	0.000365	0.001042	0.00193	4.45E-06	6.49E-05	4.9E-05	2.65E-08	2.28E-08	90.74679	0	11.42713	0
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.023939	0.028785	0.034414	0.151204	0.17952	0.501724	0.006415	0.004886	9.68E-06	6.89E-06	27386.18	9771.05	3825.345	361528.8
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.084573	0.101722	0.121575	0.341813	0.633842	0.001443	0.023293	0.017599	8.74E-06	7.53E-06	29950.75	0	5211.722	0
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.007487	0.009005	0.010762	0.030717	0.056943	0.000131	0.001967	0.001487	7.8E-07	6.72E-07	2674.819	0	365.0893	0
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.00949	0.011414	0.013642	0.043694	0.07198	0.000168	0.002445	0.001847	1.06E-06	9.13E-07	3632.877	0	573.5552	0
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.108353	0.131108	0.156029	0.827333	1.108234	179.3014	0.061931	0.056977	0.001654	0.001463	5817237	2058796	3271.049	2.55E+08
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.526125	0.636612	0.757621	3.518146	7.389719	1075.536	0.260028	0.239226	0.009928	0.008778	34894597	4381895	3423.582	1.77E+09
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.137804	0.166743	0.198438	1.038072	1.760523	239.9741	0.087696	0.08068	0.002215	0.001959	7785694	2093535	4950.431	3.61E+08
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.032602	0.039448	0.046946	0.275176	0.417815	56.53694	0.022397	0.020605	0.000522	0.000461	1834279	657831.2	1756.991	85203895
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.016955	0.020515	0.024415	0.153085	0.222479	32.89182	0.011242	0.010342	0.000304	0.000268	1067139	439054.4	995.4989	57721276
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.110965	0.134267	0.159789	0.933854	1.084845	146.5626	0.067919	0.062485	0.001352	0.001196	4755062	2983680	9159.104	2.4E+08
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.054606	0.066073	0.078633	0.955317	0.835884	159.1331	0.038869	0.03576	0.00147	0.001299	5162898	2466748	9227.112	2.48E+08
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.093545	0.11319	0.134705	0.800589	1.18173	94.04343	0.059225	0.054487	0.000867	0.000768	3051135	594997	815.792	1.48E+08
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.788146	0.953657	1.134931	5.412804	10.22004	1292.051	0.462209	0.425233	0.011922	0.010546	41919186	11112405	11958.92	2.25E+09
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.499919	0.604902	0.719883	4.298216	7.389339	842.1614	0.299469	0.275512	0.007771	0.006874	27322998	2981456	6719.089	1.09E+09
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.060213	0.072858	0.086706	0.957036	0.861413	154.0749	0.041508	0.038188	0.001423	0.001258	4998789	3945961	11965.38	2.58E+08
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.0059	0.007139	0.008496	0.050071	0.099883	17.67277	0.003793	0.003489	0.000163	0.000144	573373.7	139972.3	549.4637	36720094
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.716395	0.866838	1.031609	7.14947	8.583151	1178.216	0.538754	0.495654	0.010872	0.009616	38225915	20452558	36090.23	2E+09
Statewide	2018	Constructic	Aggregate	Aggregate	Diesel	0.046369	0.056107	0.066772	0.30847	0.414278	48.70842	0.027612	0.025403	0.000449	0.000398	1580291	744816.1	2168.119	58617247
Statewide	2018	Industrial -	Aggregate	Aggregate	Diesel	0.016008	0.01937	0.023051	0.428767	0.329321	74.94775	0.007643	0.007032	0.000692	0.000612	2431597	2340456	8132.257	1.47E+08
Statewide	2018	Industrial -	Aggregate	Aggregate	Diesel	0.280046	0.338856	0.403267	2.231133	2.896902	315.5603	0.212117	0.195147	0.002909	0.002576	10238006	10953316	15255.6	9.8E+08
Statewide	2018	Industrial -	Aggregate	Aggregate	Diesel	0.007112	0.008554	0.010224	0.034777	0.054081	0.000124	0.002095	0.001583	8.25E-07	7.1E-07	2826.043	0	1293.006	0
Statewide	2018	Industrial -	Aggregate	Aggregate	Diesel	0.005573	0.006703	0.008011	0.027068	0.043561	0.000102	0.001483	0.001121	6.43E-07	5.54E-07	2205.313	0	269.8532	0
Statewide	2018	Industrial -	Aggregate	Aggregate	Diesel	0.00138	0.001659	0.001983	0.007292	0.010953	2.58E-05	0.000375	0.000284	1.68E-07	1.45E-07	576.071	0	107.4216	0
Statewide	2018	Industrial -	Aggregate	Aggregate	Diesel	0.123141	0.149	0.177322	0.888122	1.092682	152.4066	0.068	0.06256	0.001405	0.001244	4944663	3089809	3883.716	2.72E+08
Statewide	2018	Industrial -	Aggregate	Aggregate	Diesel	0.047604	0.057601	0.06855	0.393359	0.619387	89.35634	0.029453	0.027097	0.000825	0.000729	2899068	844535.3	1168.22	1.41E+08
Statewide	2018	Light Comn	Aggregate	Aggregate	Diesel	0.044158	0.052585	0.06358	0.261011	0.235272	28.42437	0.015781	0.014782	0.00036	0.00024	955220.6	856319.2	1224.321	31683810

Statewide	2018	Light Comn	Aggregate	Aggregate	Diesel	0.143191	0.171223	0.206036	0.854516	1.060858	133.5117	0.049603	0.052636	0.001521	0.001114	4429275	1724030	15039.37	56892992
Statewide	2018	Light Comn	Aggregate	Aggregate	Diesel	0.000629	0.000753	0.000905	0.004168	0.005414	0.691336	0.000228	0.00025	7.79E-06	5.64E-06	22440.63	17308.3	448.4538	657715.4
Statewide	2018	Light Comn	Aggregate	Aggregate	Diesel	0.086422	0.103308	0.124358	0.499789	0.590142	73.73413	0.029182	0.030585	0.000848	0.000616	2450068	899867.3	7830.68	33295092
Statewide	2018	Light Comn	Aggregate	Aggregate	Diesel	0.209498	0.249727	0.301598	1.217896	1.201367	147.621	0.073708	0.07104	0.001816	0.001243	4942076	3377057	8920.755	1.55E+08
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.021418	0.025915	0.030842	0.247661	0.335467	83.07697	0.012201	0.011225	0.000767	0.000678	2695341	472418.4	1365.879	1.04E+08
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.133917	0.16204	0.192841	1.053489	1.845799	197.706	0.085032	0.07823	0.001824	0.001614	6414353	1861629	4109.129	4.31E+08
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.315795	0.382112	0.454745	2.224368	4.261167	488.6376	0.209804	0.193019	0.004508	0.003988	15853308	3362677	7568.957	7.14E+08
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.310015	0.375118	0.446421	3.152656	3.871032	879.2278	0.16141	0.148497	0.00812	0.007176	28525577	9107073	14711.23	1.44E+09
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.23297	0.281893	0.335476	1.35417	3.174033	330.7641	0.137988	0.126949	0.003051	0.0027	10731276	2690312	4755.879	5.07E+08
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.00183	0.002201	0.00263	0.008054	0.01389	3.23E-05	0.000469	0.000354	1.99E-07	1.71E-07	681.5541	0	111.2076	0
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.002236	0.002689	0.003214	0.012992	0.016758	3.99E-05	0.000605	0.000457	2.9E-07	2.5E-07	993.3244	0	763.14	0
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.001572	0.001875	0.002263	0.010668	0.011121	1.150527	0.00057	0.000512	1.49E-05	9.66E-06	38409.42	27440.7	69.91825	905543.1
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.000223	0.000268	0.00032	0.000913	0.001694	3.9E-06	5.84E-05	4.41E-05	2.32E-08	2E-08	79.54929	0	32.14408	0
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.001593	0.001916	0.00229	0.00654	0.012108	2.79E-05	0.000407	0.000308	1.66E-07	1.43E-07	569.3417	0	50.61	0
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.004674	0.005622	0.006719	0.027674	0.035262	8.45E-05	0.00123	0.000929	6.14E-07	5.29E-07	2102.768	0	483.0424	0
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.000418	0.000503	0.000601	0.001715	0.003185	7.33E-06	0.000111	8.37E-05	4.36E-08	3.75E-08	149.3747	0	19.88	0
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.000711	0.000856	0.001023	0.002921	0.005408	1.25E-05	0.000181	0.000137	7.42E-08	6.39E-08	254.2855	0	49.55519	0
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.001513	0.00182	0.002175	0.009544	0.011395	2.75E-05	0.000401	0.000303	2.07E-07	1.79E-07	710.5136	0	441.66	0
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.010505	0.012635	0.0151	0.055218	0.079466	0.000188	0.002735	0.002066	1.28E-06	1.1E-06	4370.405	0	1338.509	0
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.00026	0.000312	0.000373	0.001065	0.001973	4.55E-06	6.63E-05	5.01E-05	2.71E-08	2.33E-08	92.75686	0	11.68024	0
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.024204	0.029105	0.034795	0.153287	0.181981	0.508987	0.006477	0.004928	9.82E-06	6.99E-06	27785.69	9920.7	3880.782	367065.9
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.084715	0.101893	0.121779	0.343762	0.637956	0.001456	0.022903	0.017305	8.77E-06	7.56E-06	30071.48	0	5260.776	0
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.007591	0.009131	0.010912	0.03116	0.057707	0.000133	0.001972	0.00149	7.92E-07	6.82E-07	2712.877	0	370.3535	0
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.009584	0.011527	0.013777	0.044141	0.072696	0.00017	0.00247	0.001866	1.07E-06	9.22E-07	3669.658	0	579.8895	0
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.102389	0.12389	0.14744	0.843026	1.045219	185.8835	0.056987	0.052428	0.001716	0.001517	6030787	2134999	3348.965	2.65E+08
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.503433	0.609153	0.724943	3.481257	6.865856	1115.125	0.235821	0.216955	0.010295	0.009102	36179004	4544068	3505.131	1.83E+09
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.134691	0.162977	0.193956	1.043698	1.684111	248.8968	0.083662	0.076969	0.002297	0.002031	8075184	2170988	5068.35	3.74E+08
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.030919	0.037412	0.044523	0.282585	0.390434	58.62621	0.020959	0.019282	0.000541	0.000478	1902063	682148.8	1798.842	88338777
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.016539	0.020013	0.023817	0.157676	0.213343	34.10748	0.010678	0.009824	0.000315	0.000278	1106580	455321.9	1019.212	59852203
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.103104	0.124756	0.14847	0.952278	1.015713	152.0031	0.061456	0.05654	0.001402	0.001241	4931572	3094158	9377.273	2.49E+08
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.051456	0.062261	0.074096	0.987203	0.791357	165.0129	0.034615	0.031846	0.001524	0.001347	5353663	2558234	9446.9	2.57E+08
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.092531	0.111963	0.133245	0.79583	1.15654	97.54769	0.057751	0.053131	0.000899	0.000796	3164827	616993.3	835.224	1.54E+08
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.747201	0.904113	1.075969	5.396425	9.476769	1340.454	0.424308	0.390363	0.012371	0.010941	43489540	11523558	12243.78	2.33E+09
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.484051	0.585702	0.697034	4.15174	7.010368	873.052	0.283214	0.260557	0.008057	0.007126	28325209	3091916	6879.137	1.13E+09
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.05757	0.06966	0.082901	0.989243	0.834872	159.8418	0.037399	0.034407	0.001476	0.001305	5185890	4091792	12250.39	2.68E+08
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.005689	0.006883	0.008192	0.05149	0.094632	18.34385	0.00358	0.003293	0.000169	0.00015	595146.1	145157.8	562.5518	38123654
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.661371	0.800259	0.952375	7.297521	7.956965	1221.399	0.474733	0.436754	0.011273	0.009969	39626931	21209812	36949.89	2.07E+09
Statewide	2019	Constructic	Aggregate	Aggregate	Diesel	0.045241	0.054741	0.065146	0.315571	0.412287	50.47859	0.026942	0.024786	0.000465	0.000412	1637722	772378.1	2219.763	60772621
Statewide	2019	Industrial -	Aggregate	Aggregate	Diesel	0.015787	0.019102	0.022733	0.444605	0.325356	77.72054	0.006462	0.005945	0.000718	0.000634	2521557	2427044	8325.966	1.53E+08
Statewide	2019	Industrial -	Aggregate	Aggregate	Diesel	0.259715	0.314255	0.373989	2.265294	2.70051	327.2348	0.193032	0.17759	0.003018	0.002671	10616773	11358547	15618.98	1.02E+09
Statewide	2019	Industrial -	Aggregate	Aggregate	Diesel	0.007092	0.00853	0.010195	0.034673	0.053962	0.000124	0.002043	0.001544	8.22E-07	7.08E-07	2817.77	0	1296.069	0
Statewide	2019	Industrial -	Aggregate	Aggregate	Diesel	0.005507	0.006624	0.007917	0.026762	0.043049	0.000101	0.001466	0.001108	6.36E-07	5.48E-07	2179.948	0	266.9504	0
Statewide	2019	Industrial -	Aggregate	Aggregate	Diesel	0.001336	0.001607	0.001921	0.007073	0.010611	2.5E-05	0.000364	0.000275	1.63E-07	1.4E-07	558.4593	0	104.2239	0
Statewide	2019	Industrial -	Aggregate	Aggregate	Diesel	0.115994	0.140353	0.167031	0.9009	1.037137	158.045	0.062675	0.057661	0.001458	0.00129	5127597	3204120	3976.225	2.82E+08
Statewide	2019	Industrial -	Aggregate	Aggregate	Diesel	0.046286	0.056006	0.066652	0.403738	0.59593	92.66219	0.027368	0.025178	0.000855	0.000756	3006323	875779.9	1196.046	1.47E+08
Statewide	2019	Light Comn	Aggregate	Aggregate	Diesel	0.038683	0.046069	0.055697	0.253973	0.227803	28.45319	0.013855	0.012998	0.00036	0.00024	954706.7	857209.8	1225.871	31716763
Statewide	2019	Light Comn	Aggregate	Aggregate	Diesel	0.131747	0.157589	0.18956	0.839291	1.033442	133.6466	0.044866	0.047957	0.001522	0.001114	4430772	1725600	15054.72	56944785
Statewide	2019	Light Comn	Aggregate	Aggregate	Diesel	0.000583	0.000698	0.000838	0.004109	0.005269	0.692077	0.000207	0.000228	7.8E-06	5.65E-06	22466.39	17333.85	448.9939	658686.3
Statewide	2019	Light Comn	Aggregate	Aggregate	Diesel	0.079208	0.094711	0.113971	0.490613	0.574176	73.80582	0.026288	0.027728	0.000849	0.000616	2450570	900717.8	7838.65	33326559
Statewide	2019	Light Comn	Aggregate	Aggregate	Diesel	0.186162	0.221945	0.267996	1.187845	1.165093	147.7657	0.065301	0.063145	0.001818	0.001243	4940605	3380473	8929.264	1.56E+08
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.021327	0.025806	0.030711	0.256326	0.322809	86.2617	0.011655	0.010723	0.000797	0.000704	2798666	489284	1397.143	1.08E+08
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.128431	0.155402	0.184941	1.024662	1.744605	204.7315	0.079985	0.073586	0.001889	0.001671	6642287	1928056	4203.184	4.46E+08
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.30882	0.373672	0.444701	2.229424	4.100581	506.0833	0.201671	0.185537	0.00467	0.004131	16419316	3482626	7742.206	7.4E+08
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.302487	0.36601	0.435582	3.240668	3.634166	910.3747	0.149651	0.137679	0.008408	0.00743	29536104	9431966	15047.96	1.49E+09
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.231611	0.280249	0.333519	1.388376	3.11644	342.3059	0.134269	0.123528	0.003158	0.002794	11105738	2786347	4864.739	5.25E+08

Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.001837	0.00221	0.002641	0.008091	0.013948	3.24E-05	0.000471	0.000356	2E-07	1.72E-07	684.6003	0	111.7345	0
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.002261	0.002719	0.00325	0.013165	0.016982	4.04E-05	0.000606	0.000458	2.94E-07	2.53E-07	1005.896	0	774.12	0
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.001451	0.001731	0.002089	0.010632	0.010995	1.166945	0.000515	0.000461	1.51E-05	9.78E-06	38893.05	27838.55	71.10154	918672.1
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.000225	0.000271	0.000323	0.000924	0.001711	3.95E-06	5.84E-05	4.42E-05	2.35E-08	2.02E-08	80.41926	0	32.50252	0
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.001613	0.00194	0.002319	0.006622	0.012261	2.83E-05	0.000412	0.000312	1.68E-07	1.45E-07	576.5414	0	51.25	0
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.004746	0.005709	0.006823	0.028102	0.035808	8.58E-05	0.001249	0.000944	6.23E-07	5.37E-07	2135.299	0	490.5145	0
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.000424	0.000509	0.000609	0.001737	0.003222	7.42E-06	0.000111	8.4E-05	4.41E-08	3.8E-08	151.289	0	20.14	0
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.000721	0.000867	0.001037	0.002961	0.005481	1.27E-05	0.000184	0.000139	7.52E-08	6.48E-08	257.7432	0	50.22902	0
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.001535	0.001846	0.002207	0.009685	0.011563	2.79E-05	0.000407	0.000307	2.1E-07	1.81E-07	720.9865	0	448.17	0
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.010634	0.01279	0.015287	0.055914	0.080446	0.00019	0.002769	0.002092	1.29E-06	1.11E-06	4425.102	0	1355.674	0
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.000265	0.000319	0.000382	0.00109	0.002018	4.66E-06	6.79E-05	5.13E-05	2.77E-08	2.38E-08	94.88456	0	11.94817	0
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.024486	0.029446	0.035201	0.155388	0.184445	0.516251	0.006542	0.004973	9.96E-06	7.08E-06	28133.66	10026.55	3936.089	370982.3
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.084961	0.102189	0.122133	0.345891	0.642178	0.00147	0.022564	0.017049	8.82E-06	7.59E-06	30216.73	0	5308.781	0
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.007703	0.009264	0.011073	0.031621	0.058544	0.000135	0.001983	0.001499	8.03E-07	6.92E-07	2752.883	0	375.8355	0
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.009695	0.011661	0.013936	0.044649	0.073535	0.000171	0.002498	0.001888	1.08E-06	9.33E-07	3711.919	0	586.4803	0
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.101178	0.122425	0.145696	0.862341	1.008876	192.5668	0.054388	0.050037	0.001777	0.001572	6247618	2211113	3425.621	2.74E+08
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.493548	0.597193	0.710709	3.51581	6.559356	1154.89	0.2217	0.203964	0.010663	0.009426	37469121	4706124	3585.361	1.9E+09
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.132689	0.160554	0.191072	1.066745	1.638171	257.862	0.08098	0.074502	0.00238	0.002105	8366048	2248438	5184.361	3.88E+08
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.029967	0.03626	0.043152	0.291502	0.372144	60.70193	0.020002	0.018402	0.00056	0.000495	1969407	706466.6	1840.017	91465382
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.016124	0.019511	0.023219	0.162124	0.205719	35.31226	0.010091	0.009283	0.000326	0.000288	1145667	471563	1042.541	61962360
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.100351	0.121425	0.144506	0.980829	0.986542	157.4296	0.058466	0.053789	0.001453	0.001285	5107629	3204557	9591.913	2.57E+08
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.050199	0.060741	0.072287	1.021922	0.763855	170.9554	0.031669	0.029136	0.001579	0.001395	5546461	2649657	9663.134	2.66E+08
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.090947	0.110046	0.130963	0.778504	1.119617	101.0332	0.055915	0.051442	0.000931	0.000825	3277911	639011.5	854.3418	1.59E+08
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.727413	0.88017	1.047475	5.451889	9.023907	1388.514	0.40027	0.368248	0.012816	0.011333	45048809	11934575	12524.03	2.42E+09
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.468842	0.567299	0.675133	4.038566	6.623984	904.0122	0.267512	0.246111	0.008344	0.007378	29329681	3202196	7036.596	1.17E+09
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.056981	0.068947	0.082053	1.025532	0.822102	165.558	0.034863	0.032074	0.001529	0.001351	5371346	4238002	12530.8	2.77E+08
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.005622	0.006803	0.008096	0.053217	0.092364	18.99677	0.003478	0.0032	0.000175	0.000155	616329.3	150343.9	575.4283	39481869
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.619807	0.749966	0.892522	7.463363	7.411864	1264.521	0.422206	0.388429	0.011673	0.010321	41026001	21966055	37795.65	2.14E+09
Statewide	2020	Constructic	Aggregate	Aggregate	Diesel	0.044523	0.053873	0.064113	0.322375	0.407394	52.24722	0.02636	0.024251	0.000482	0.000426	1695104	799954.3	2270.572	62833169
Statewide	2020	Industrial -	Aggregate	Aggregate	Diesel	0.015944	0.019293	0.02296	0.460248	0.32098	80.49332	0.005529	0.005086	0.000744	0.000657	2611517	2513632	8516.543	1.58E+08
Statewide	2020	Industrial -	Aggregate	Aggregate	Diesel	0.240627	0.291159	0.346503	2.306348	2.505179	338.9094	0.173644	0.159753	0.003126	0.002766	10995541	11763779	15976.49	1.05E+09
Statewide	2020	Industrial -	Aggregate	Aggregate	Diesel	0.00708	0.008516	0.010178	0.034588	0.053864	0.000125	0.001992	0.001505	8.2E-07	7.07E-07	2811.731	0	1298.842	0
Statewide	2020	Industrial -	Aggregate	Aggregate	Diesel	0.005456	0.006562	0.007843	0.026537	0.042654	9.97E-05	0.001453	0.001097	6.3E-07	5.43E-07	2160.829	0	264.9529	0
Statewide	2020	Industrial -	Aggregate	Aggregate	Diesel	0.001321	0.001589	0.001899	0.007012	0.010496	2.47E-05	0.00036	0.000272	1.61E-07	1.39E-07	553.0686	0	103.3661	0
Statewide	2020	Industrial -	Aggregate	Aggregate	Diesel	0.107518	0.130097	0.154827	0.898847	0.953202	163.6835	0.055931	0.051456	0.00151	0.001336	5310531	3318431	4067.238	2.92E+08
Statewide	2020	Industrial -	Aggregate	Aggregate	Diesel	0.044346	0.053659	0.063858	0.408439	0.564682	95.96804	0.024674	0.0227	0.000886	0.000783	3113577	907024.5	1223.423	1.52E+08
Statewide	2020	Light Comn	Aggregate	Aggregate	Diesel	0.034577	0.041182	0.049785	0.248648	0.220915	28.48179	0.012141	0.011409	0.00036	0.00024	954581.6	858009.2	1227.121	31746339
Statewide	2020	Light Comn	Aggregate	Aggregate	Diesel	0.122937	0.147089	0.176876	0.827324	1.008314	133.773	0.04062	0.043749	0.001524	0.001115	4432702	1727293	15068.82	57000674
Statewide	2020	Light Comn	Aggregate	Aggregate	Diesel	0.000546	0.000654	0.000786	0.004061	0.005134	0.692422	0.000188	0.000209	7.8E-06	5.65E-06	22476.17	17301	449.2438	657438
Statewide	2020	Light Comn	Aggregate	Aggregate	Diesel	0.073611	0.088041	0.105914	0.483467	0.559575	73.87867	0.023687	0.02515	0.00085	0.000616	2451510	901648.6	7846.269	33360996
Statewide	2020	Light Comn	Aggregate	Aggregate	Diesel	0.168239	0.200607	0.242189	1.164561	1.131713	147.9095	0.057775	0.056068	0.001819	0.001243	4940600	3383634	8937.904	1.56E+08
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.020391	0.024673	0.029363	0.264647	0.295097	89.42255	0.010641	0.00979	0.000826	0.00073	2901216	506120.7	1427.917	1.12E+08
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.1227	0.148466	0.176687	1.009572	1.631808	211.7633	0.074757	0.068776	0.001954	0.001728	6870428	1994461	4295.766	4.61E+08
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.299205	0.362038	0.430855	2.258119	3.887814	523.1518	0.191587	0.17626	0.004828	0.00427	16973084	3602644	7912.741	7.65E+08
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.291999	0.353319	0.420479	3.332245	3.320364	941.1966	0.135969	0.125091	0.008693	0.007682	30536088	9756841	15379.41	1.54E+09
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.223636	0.2706	0.322036	1.403463	2.967951	353.8978	0.126315	0.116209	0.003265	0.002888	11481824	2882305	4971.893	5.43E+08
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.001863	0.00224	0.002678	0.008213	0.014141	3.28E-05	0.000478	0.000361	2.03E-07	1.75E-07	694.5957	0	113.4376	0
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.002286	0.00275	0.003287	0.013338	0.017204	4.1E-05	0.000609	0.00046	2.97E-07	2.56E-07	1018.442	0	784.96	0
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.001361	0.001624	0.00196	0.010633	0.010873	1.183364	0.000465	0.000414	1.53E-05	9.91E-06	39383.72	28232.75	72.05067	931680.7
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.000228	0.000275	0.000328	0.000937	0.001736	4.01E-06	5.88E-05	4.45E-05	2.38E-08	2.05E-08	81.60571	0	32.98404	0
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.001638	0.00197	0.002355	0.006725	0.01245	2.87E-05	0.000419	0.000316	1.71E-07	1.47E-07	585.4286	0	52.04	0
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.00482	0.005797	0.006929	0.028535	0.036363	8.71E-05	0.001269	0.000959	6.33E-07	5.45E-07	2168.301	0	498.0926	0
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.00043	0.000518	0.000619	0.001766	0.003273	7.55E-06	0.000112	8.47E-05	4.49E-08	3.87E-08	153.8078	0	20.48	0
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.000731	0.000879	0.001051	0.003002	0.005557	1.28E-05	0.000187	0.000141	7.62E-08	6.57E-08	261.3064	0	50.92341	0
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.001557	0.001872	0.002238	0.009821	0.011725	2.83E-05	0.000412	0.000312	2.13E-07	1.84E-07	731.1216	0	454.47	0

Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.010779	0.012965	0.015495	0.056688	0.081542	0.000193	0.002807	0.002121	1.31E-06	1.13E-06	4485.987	0	1374.626	0
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.000274	0.00033	0.000394	0.001126	0.002086	4.81E-06	7.01E-05	5.3E-05	2.86E-08	2.46E-08	98.06884	0	12.34914	0
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.024785	0.029805	0.03563	0.157518	0.186928	0.523514	0.006609	0.005021	1.01E-05	7.17E-06	28518.92	10198.1	3991.619	377329.7
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.086086	0.103543	0.12375	0.35143	0.652571	0.001497	0.02268	0.017136	8.95E-06	7.71E-06	30665.93	0	5406.458	0
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.007812	0.009397	0.01123	0.032072	0.059379	0.000137	0.002001	0.001512	8.15E-07	7.02E-07	2792.145	0	381.1956	0
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.009827	0.011819	0.014126	0.045269	0.074536	0.000174	0.002532	0.001913	1.1E-06	9.46E-07	3763.102	0	595.087	0
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.094282	0.114082	0.135767	0.87721	0.917516	199.2226	0.048426	0.044552	0.001839	0.001626	6463557	2287296	3501.076	2.84E+08
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.459895	0.556473	0.662249	3.467744	5.876262	1195.175	0.192935	0.1775	0.011036	0.009755	38776134	4868276	3664.335	1.96E+09
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.127389	0.15414	0.18344	1.083536	1.54261	266.6868	0.075903	0.06983	0.002462	0.002177	8652361	2325905	5298.555	4.01E+08
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.028568	0.034567	0.041137	0.299766	0.352824	62.76046	0.018627	0.017137	0.000579	0.000512	2036194	730817.1	1880.546	94623662
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.015259	0.018463	0.021973	0.166895	0.191018	36.53372	0.009147	0.008415	0.000337	0.000298	1185296	487786.1	1065.504	64152989
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.09461	0.114478	0.136239	1.001382	0.935779	162.861	0.053545	0.049261	0.001503	0.001329	5283847	3314891	9803.191	2.66E+08
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.048033	0.05812	0.069167	1.056013	0.731414	176.8844	0.028433	0.026159	0.001634	0.001444	5738821	2740940	9875.98	2.76E+08
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.088396	0.106959	0.12729	0.753044	1.070146	104.404	0.053328	0.049062	0.000963	0.000852	3387272	661014.3	873.1601	1.65E+08
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.689765	0.834615	0.993261	5.496277	8.262257	1437.792	0.363546	0.334463	0.013272	0.011735	46647588	12345581	12799.89	2.5E+09
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.45123	0.545989	0.649771	3.944068	6.222422	935.514	0.250228	0.230209	0.008636	0.007636	30351723	3312392	7191.589	1.22E+09
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.055507	0.067164	0.079931	1.059393	0.807779	171.2668	0.031959	0.029402	0.001582	0.001398	5556562	4383943	12806.81	2.87E+08
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.005298	0.00641	0.007629	0.054718	0.083323	19.66558	0.00318	0.002926	0.000182	0.000161	638028	155525.9	588.1031	40863973
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.578414	0.699881	0.832917	7.644796	6.883941	1308.574	0.370776	0.341114	0.012081	0.01068	42455237	22722847	38628.16	2.22E+09
Statewide	2021	Constructic	Aggregate	Aggregate	Diesel	0.041843	0.05063	0.060254	0.32596	0.392757	54.05187	0.02445	0.022494	0.000498	0.000441	1753653	827441.5	2320.586	64984774
Statewide	2021	Industrial -	Aggregate	Aggregate	Diesel	0.01589	0.019227	0.022882	0.476808	0.317856	83.26611	0.004693	0.004318	0.000769	0.00068	2701477	2600220	8704.134	1.64E+08
Statewide	2021	Industrial -	Aggregate	Aggregate	Diesel	0.223751	0.270739	0.322202	2.356886	2.340299	350.5839	0.155828	0.143362	0.003235	0.002861	11374309	12169010	16328.4	1.09E+09
Statewide	2021	Industrial -	Aggregate	Aggregate	Diesel	0.007276	0.008752	0.01046	0.035486	0.055318	0.000128	0.001994	0.001507	8.42E-07	7.26E-07	2886.547	0	1338.118	0
Statewide	2021	Industrial -	Aggregate	Aggregate	Diesel	0.005612	0.00675	0.008068	0.027309	0.043881	0.000103	0.001494	0.001129	6.49E-07	5.59E-07	2223.365	0	272.7586	0
Statewide	2021	Industrial -	Aggregate	Aggregate	Diesel	0.001413	0.001699	0.002031	0.007535	0.011235	2.65E-05	0.000385	0.000291	1.73E-07	1.49E-07	593.3341	0	111.1786	0
Statewide	2021	Industrial -	Aggregate	Aggregate	Diesel	0.100066	0.121079	0.144094	0.911395	0.896572	169.322	0.050153	0.046141	0.001562	0.001382	5493465	3432742	4156.826	3.03E+08
Statewide	2021	Industrial -	Aggregate	Aggregate	Diesel	0.042537	0.05147	0.061253	0.416811	0.511695	99.27389	0.022658	0.020846	0.000917	0.00081	3220832	938269.1	1250.371	1.57E+08
Statewide	2021	Light Comn	Aggregate	Aggregate	Diesel	0.031757	0.037827	0.045724	0.248751	0.218553	29.27677	0.010636	0.010018	0.00037	0.000247	980128.5	882037.1	1261.48	32635373
Statewide	2021	Light Comn	Aggregate	Aggregate	Diesel	0.118299	0.14158	0.170196	0.836204	1.009256	137.5016	0.037193	0.040457	0.001566	0.001145	4553897	1775568	15488.61	58593746
Statewide	2021	Light Comn	Aggregate	Aggregate	Diesel	0.00053	0.000635	0.000762	0.004125	0.005142	0.712065	0.000173	0.000194	8.02E-06	5.81E-06	23093.13	17779.15	462.0229	675607.7
Statewide	2021	Light Comn	Aggregate	Aggregate	Diesel	0.070443	0.084274	0.101351	0.488213	0.559176	75.93826	0.02156	0.023097	0.000873	0.000633	2518399	926775.2	8064.872	34290681
Statewide	2021	Light Comn	Aggregate	Aggregate	Diesel	0.156073	0.186131	0.224669	1.167319	1.123281	152.0346	0.051239	0.049978	0.00187	0.001276	5073557	3478154	9187.002	1.6E+08
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.018941	0.022919	0.027276	0.270852	0.260821	92.42172	0.009194	0.008459	0.000854	0.000754	2998521	522994.7	1458.224	1.16E+08
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.113572	0.137423	0.163544	0.975004	1.460182	218.7762	0.06731	0.061926	0.002019	0.001786	7097952	2060914	4386.942	4.77E+08
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.274907	0.332637	0.395866	2.244219	3.438272	540.3007	0.170849	0.157182	0.004987	0.00441	17529461	3722641	8080.685	7.9E+08
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.268192	0.324512	0.386196	3.385871	2.870109	972.6305	0.114522	0.10536	0.008984	0.007938	31555925	10081792	15705.83	1.59E+09
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.208916	0.252788	0.300838	1.413164	2.706872	365.5909	0.114205	0.105068	0.003374	0.002984	11861194	2978250	5077.419	5.61E+08
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.001881	0.002262	0.002703	0.008297	0.014276	3.32E-05	0.000483	0.000365	2.05E-07	1.76E-07	701.4904	0	114.5964	0
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.002313	0.002782	0.003325	0.013513	0.017424	4.16E-05	0.000615	0.000464	3.01E-07	2.59E-07	1031.366	0	795.88	0
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.00129	0.00154	0.001857	0.010661	0.010762	1.199779	0.000417	0.00037	1.55E-05	1E-05	39940.41	28678.05	73.13628	946375.6
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.000232	0.000279	0.000333	0.000952	0.001762	4.07E-06	5.95E-05	4.49E-05	2.42E-08	2.08E-08	82.87036	0	33.4957	0
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.001658	0.001995	0.002384	0.006809	0.012606	2.91E-05	0.000424	0.00032	1.73E-07	1.49E-07	592.7408	0	52.69	0
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.004891	0.005883	0.007031	0.028958	0.036901	8.84E-05	0.001288	0.000973	6.42E-07	5.53E-07	2200.412	0	505.4707	0
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.000437	0.000525	0.000628	0.001793	0.003321	7.66E-06	0.000113	8.53E-05	4.56E-08	3.92E-08	156.1242	0	20.79	0
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.000742	0.000892	0.001066	0.003045	0.005638	1.3E-05	0.00019	0.000143	7.74E-08	6.66E-08	265.0994	0	51.66259	0
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.001578	0.001898	0.002268	0.009956	0.011886	2.87E-05	0.000418	0.000316	2.16E-07	1.86E-07	741.1439	0	460.7	0
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.010921	0.013135	0.015699	0.057438	0.082613	0.000195	0.002844	0.002149	1.33E-06	1.14E-06	4545.215	0	1392.935	0
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.000284	0.000342	0.000409	0.001167	0.00216	4.99E-06	7.26E-05	5.49E-05	2.96E-08	2.55E-08	101.5789	0	12.79114	0
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.02509	0.030172	0.036068	0.159651	0.189406	0.530776	0.006678	0.005069	1.02E-05	7.27E-06	28921.88	10303.95	4046.907	381246.1
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.086677	0.104254	0.1246	0.354519	0.658256	0.001512	0.022723	0.017169	9.02E-06	7.77E-06	30911.12	0	5462.469	0
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.007924	0.009531	0.011391	0.032531	0.060228	0.000139	0.002025	0.00153	8.26E-07	7.12E-07	2832.059	0	386.645	0
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.009947	0.011964	0.014299	0.045826	0.07545	0.000176	0.002564	0.001937	1.11E-06	9.57E-07	3809.321	0	602.4602	0
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.086232	0.104341	0.124174	0.890111	0.829562	205.9082	0.042016	0.038655	0.001901	0.001681	6680466	2363518	3575.385	2.93E+08
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.415838	0.503164	0.598807	3.362521	5.089482	1235.918	0.158112	0.145463	0.011414	0.010087	40098014	5030463	3742.108	2.03E+09
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.117683	0.142396	0.169463	1.074243	1.373738	275.8773	0.06798	0.062542	0.002547	0.002252	8950535	2403345	5411.015	4.15E+08

Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.025648	0.031034	0.036933	0.306526	0.307728	64.87874	0.016087	0.0148	0.000599	0.00053	2104919	755158.5	1920.46	97756441
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.013956	0.016887	0.020097	0.171034	0.169029	37.75925	0.007829	0.007202	0.000349	0.000308	1225057	504027.8	1088.119	66346545
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.085481	0.103432	0.123093	1.017286	0.861769	168.2733	0.046773	0.043031	0.001553	0.001373	5459442	3425336	10011.26	2.75E+08
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.044916	0.054349	0.064679	1.087737	0.68918	182.7637	0.024342	0.022394	0.001688	0.001492	5929568	2832254	10085.59	2.85E+08
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.085529	0.10349	0.123161	0.750868	1.025832	107.9264	0.050276	0.046253	0.000995	0.000881	3501554	683081.9	891.6925	1.7E+08
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.618355	0.74821	0.890431	5.489929	6.987248	1486.568	0.304535	0.280172	0.013726	0.012133	48230072	12756715	13071.56	2.59E+09
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.41217	0.498726	0.593525	3.720551	5.442348	967.3323	0.218946	0.201431	0.008931	0.007895	31384031	3422898	7344.227	1.26E+09
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.052484	0.063505	0.075576	1.089381	0.778902	177.1025	0.027794	0.02557	0.001636	0.001445	5745895	4530086	13078.63	2.97E+08
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.005018	0.006072	0.007226	0.055714	0.075548	20.30073	0.002886	0.002655	0.000188	0.000166	658634.7	160711.3	600.5853	42161653
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.530485	0.641887	0.763899	7.802078	6.255163	1353.068	0.313076	0.28803	0.012494	0.011044	43898794	23479749	39448.03	2.29E+09
Statewide	2022	Constructic	Aggregate	Aggregate	Diesel	0.039857	0.048228	0.057395	0.331873	0.381805	55.86679	0.023146	0.021295	0.000515	0.000456	1812536	854964.3	2369.839	67148544
Statewide	2022	Industrial -	Aggregate	Aggregate	Diesel	0.015936	0.019282	0.022947	0.492614	0.314983	86.03889	0.004411	0.004058	0.000795	0.000702	2791437	2686808	8888.875	1.69E+08
Statewide	2022	Industrial -	Aggregate	Aggregate	Diesel	0.203201	0.245873	0.292609	2.398773	2.153123	362.2584	0.134895	0.124103	0.003343	0.002957	11753076	12574242	16674.96	1.13E+09
Statewide	2022	Industrial -	Aggregate	Aggregate	Diesel	0.007288	0.008766	0.010476	0.0355	0.055376	0.000129	0.001974	0.001491	8.43E-07	7.26E-07	2888.946	0	1342.336	0
Statewide	2022	Industrial -	Aggregate	Aggregate	Diesel	0.005607	0.006744	0.00806	0.027286	0.043841	0.000102	0.001493	0.001128	6.48E-07	5.58E-07	2221.435	0	272.5645	0
Statewide	2022	Industrial -	Aggregate	Aggregate	Diesel	0.001429	0.001718	0.002054	0.007622	0.011362	2.68E-05	0.00039	0.000294	1.75E-07	1.51E-07	600.1271	0	112.4723	0
Statewide	2022	Industrial -	Aggregate	Aggregate	Diesel	0.089092	0.107801	0.128292	0.904369	0.814987	174.9604	0.041943	0.038587	0.001615	0.001428	5676399	3547054	4245.053	3.13E+08
Statewide	2022	Industrial -	Aggregate	Aggregate	Diesel	0.038824	0.046976	0.055906	0.418979	0.436616	102.5797	0.018978	0.01746	0.000947	0.000837	3328086	969513.8	1276.91	1.62E+08
Statewide	2022	Light Comn	Aggregate	Aggregate	Diesel	0.029434	0.035062	0.042379	0.246692	0.213215	29.39197	0.009258	0.008741	0.000372	0.000247	983300.5	885475.4	1266.43	32762590
Statewide	2022	Light Comn	Aggregate	Aggregate	Diesel	0.113342	0.135675	0.163057	0.831348	0.993297	138.0299	0.033821	0.037127	0.001572	0.001149	4569838	1782379	15548.12	58818505
Statewide	2022	Light Comn	Aggregate	Aggregate	Diesel	0.00051	0.000611	0.000734	0.004106	0.005059	0.714563	0.000158	0.00018	8.05E-06	5.81E-06	23096.02	17837.55	463.5926	677826.9
Statewide	2022	Light Comn	Aggregate	Aggregate	Diesel	0.067176	0.080381	0.096648	0.48534	0.549664	76.23195	0.019495	0.021062	0.000877	0.000636	2527272	930385	8096.03	34424245
Statewide	2022	Light Comn	Aggregate	Aggregate	Diesel	0.145409	0.173435	0.209314	1.157177	1.098382	152.6207	0.045144	0.044256	0.001877	0.00128	5090162	3491554	9222.411	1.61E+08
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.018899	0.022867	0.027214	0.279522	0.25131	95.45476	0.008764	0.008063	0.000882	0.000779	3096925	539855.6	1488.084	1.19E+08
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.108755	0.131594	0.156607	0.95466	1.357907	225.8333	0.062606	0.057598	0.002085	0.001843	7326914	2127271	4476.774	4.92E+08
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.261424	0.316323	0.376451	2.267026	3.162036	557.7896	0.157871	0.145242	0.005149	0.004553	18096870	3842549	8246.154	8.16E+08
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.260793	0.31556	0.375542	3.478706	2.634438	1004.106	0.102876	0.094646	0.009276	0.008195	32577100	10406482	16027.44	1.64E+09
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.198417	0.240085	0.285721	1.439575	2.490086	377.11	0.10487	0.09648	0.003481	0.003078	12234918	3074398	5181.389	5.78E+08
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.001903	0.002289	0.002736	0.008401	0.014446	3.36E-05	0.000489	0.000369	2.07E-07	1.78E-07	710.1354	0	116.0455	0
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.002341	0.002815	0.003365	0.013691	0.01765	4.21E-05	0.000621	0.000469	3.05E-07	2.63E-07	1044.506	0	806.79	0
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.001228	0.001465	0.001767	0.010697	0.010646	1.216197	0.000372	0.000329	1.58E-05	1.02E-05	40482.02	29057.65	74.07071	958902.5
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.000235	0.000283	0.000338	0.000967	0.001789	4.13E-06	6.02E-05	4.55E-05	2.46E-08	2.11E-08	84.14514	0	34.01096	0
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.001684	0.002025	0.00242	0.006912	0.012797	2.95E-05	0.00043	0.000325	1.76E-07	1.51E-07	601.7405	0	53.49	0
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.004965	0.005972	0.007137	0.029392	0.037456	8.97E-05	0.001307	0.000988	6.52E-07	5.61E-07	2233.429	0	513.0531	0
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.000444	0.000534	0.000638	0.001822	0.003373	7.79E-06	0.000114	8.62E-05	4.63E-08	3.99E-08	158.5947	0	21.12	0
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.000752	0.000905	0.001082	0.003089	0.005719	1.32E-05	0.000192	0.000145	7.85E-08	6.76E-08	268.941	0	52.41124	0
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.001599	0.001924	0.002299	0.01009	0.012046	2.91E-05	0.000424	0.00032	2.19E-07	1.89E-07	751.102	0	466.89	0
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.011066	0.01331	0.015908	0.058208	0.083713	0.000198	0.002882	0.002178	1.34E-06	1.16E-06	4605.97	0	1411.678	0
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.000296	0.000356	0.000425	0.001215	0.002249	5.19E-06	7.56E-05	5.71E-05	3.09E-08	2.66E-08	105.7483	0	13.31617	0
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.025399	0.030544	0.036512	0.161792	0.191887	0.53804	0.006748	0.005119	1.04E-05	7.37E-06	29295.57	10439	4102.151	386243
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.087355	0.105069	0.125575	0.357826	0.664196	0.001528	0.022801	0.017227	9.1E-06	7.84E-06	31180.2	0	5519.593	0
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.008041	0.009672	0.01156	0.033012	0.061119	0.000141	0.002054	0.001552	8.39E-07	7.22E-07	2873.965	0	392.3661	0
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.010122	0.012174	0.01455	0.046614	0.076773	0.000179	0.002608	0.001971	1.13E-06	9.74E-07	3875.333	0	612.2824	0
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.080697	0.097643	0.116203	0.900082	0.769939	212.5865	0.036446	0.03353	0.001963	0.001735	6897135	2439650	3648.598	3.03E+08
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.409705	0.495743	0.589975	3.413432	4.848502	1276.29	0.14706	0.135295	0.011788	0.010417	41407817	5192515	3818.736	2.09E+09
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.113903	0.137823	0.16402	1.08421	1.301791	284.8262	0.063548	0.058464	0.00263	0.002325	9240871	2480857	5521.817	4.28E+08
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.024747	0.029943	0.035635	0.315418	0.2897	66.97149	0.014986	0.013787	0.000618	0.000547	2172816	779508.9	1959.785	1.01E+08
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.013382	0.016192	0.019269	0.175361	0.157382	38.96592	0.007174	0.0066	0.00036	0.000318	1264206	520243.6	1110.401	68463489
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.080556	0.097473	0.116001	1.038451	0.822929	173.6992	0.042213	0.038836	0.001604	0.001418	5635480	3535588	10216.26	2.84E+08
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.043627	0.052789	0.062823	1.121675	0.666521	188.6734	0.02182	0.020074	0.001743	0.00154	6121302	2922904	10292.12	2.94E+08
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.081102	0.098133	0.116786	0.736207	0.965243	111.4192	0.046875	0.043125	0.001028	0.000909	3614872	705077.1	909.9518	1.75E+08
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.591139	0.715278	0.85124	5.585703	6.376589	1534.76	0.275334	0.253308	0.014172	0.012527	49793597	13167839	13339.23	2.67E+09
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.408067	0.493761	0.587617	3.728571	5.229955	998.4798	0.21049	0.193651	0.009219	0.008149	32394576	3533025	7494.615	1.3E+09
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.05099	0.061698	0.073426	1.122597	0.755314	182.8917	0.02454	0.022576	0.001689	0.001493	5933721	4675785	13346.44	3.06E+08
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.004916	0.005948	0.007079	0.057517	0.071477	20.98706	0.002695	0.00248	0.000194	0.000171	680902.1	165862.8	612.8835	43590145

Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.504554	0.610511	0.726558	8.020585	5.883348	1397.944	0.274489	0.25253	0.01291	0.01141	45354748	24236329	40255.81	2.37E+09
Statewide	2023	Constructic	Aggregate	Aggregate	Diesel	0.037907	0.045868	0.054586	0.331899	0.370184	57.70393	0.021039	0.019356	0.000532	0.000471	1872140	882543.9	2418.366	69370762
Statewide	2023	Industrial -	Aggregate	Aggregate	Diesel	0.01609	0.019469	0.023169	0.508406	0.315664	88.81167	0.004119	0.00379	0.000821	0.000725	2881397	2773396	9070.893	1.74E+08
Statewide	2023	Industrial -	Aggregate	Aggregate	Diesel	0.188612	0.22822	0.271601	2.452298	1.998736	373.933	0.117791	0.108368	0.003452	0.003052	12131844	12979473	17016.42	1.16E+09
Statewide	2023	Industrial -	Aggregate	Aggregate	Diesel	0.007287	0.008764	0.010474	0.03546	0.055335	0.000129	0.001958	0.00148	8.42E-07	7.26E-07	2886.759	0	1343.637	0
Statewide	2023	Industrial -	Aggregate	Aggregate	Diesel	0.005595	0.00673	0.008044	0.027224	0.043749	0.000102	0.00149	0.001126	6.47E-07	5.57E-07	2216.553	0	271.8784	0
Statewide	2023	Industrial -	Aggregate	Aggregate	Diesel	0.00143	0.00172	0.002056	0.007592	0.011363	2.67E-05	0.00039	0.000294	1.75E-07	1.51E-07	598.8285	0	111.9251	0
Statewide	2023	Industrial -	Aggregate	Aggregate	Diesel	0.080902	0.097891	0.116499	0.899733	0.753117	180.5989	0.035346	0.032519	0.001667	0.001474	5859332	3661365	4331.979	3.23E+08
Statewide	2023	Industrial -	Aggregate	Aggregate	Diesel	0.037321	0.045159	0.053743	0.42816	0.402607	105.8856	0.017486	0.016087	0.000978	0.000864	3435341	1000758	1303.057	1.68E+08
Statewide	2023	Light Comn	Aggregate	Aggregate	Diesel	0.027479	0.032735	0.039564	0.245383	0.208276	29.50559	0.008016	0.007591	0.000373	0.000248	986662.7	888796.9	1271.66	32885485
Statewide	2023	Light Comn	Aggregate	Aggregate	Diesel	0.109045	0.130558	0.156871	0.827686	0.978762	138.5519	0.03076	0.03411	0.001578	0.001153	4585947	1789153	15606.77	59042061
Statewide	2023	Light Comn	Aggregate	Aggregate	Diesel	0.000493	0.000591	0.00071	0.004094	0.004986	0.717316	0.000145	0.000166	8.08E-06	5.82E-06	23130.1	17961.65	465.2226	682542.7
Statewide	2023	Light Comn	Aggregate	Aggregate	Diesel	0.064314	0.07697	0.092528	0.483187	0.540957	76.52019	0.017623	0.019221	0.00088	0.000638	2536035	933896.3	8126.787	34554163
Statewide	2023	Light Comn	Aggregate	Aggregate	Diesel	0.136233	0.162511	0.196102	1.149909	1.07536	153.195	0.039589	0.039044	0.001884	0.001284	5106803	3504825	9256.999	1.61E+08
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.019267	0.023313	0.027745	0.28886	0.249014	98.52213	0.008634	0.007943	0.00091	0.000804	3196442	556666.3	1517.517	1.23E+08
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.106447	0.128801	0.153284	0.960783	1.295373	232.8416	0.059616	0.054847	0.00215	0.0019	7554289	2193715	4565.319	5.07E+08
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.254693	0.308178	0.366758	2.295171	3.009967	574.9645	0.148959	0.137042	0.005308	0.004693	18654091	3962573	8409.253	8.41E+08
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.259517	0.314016	0.373705	3.588653	2.537677	1035.594	0.096371	0.088661	0.009567	0.008452	33598709	10731510	16344.45	1.69E+09
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.19034	0.230311	0.27409	1.466613	2.311024	388.7065	0.097571	0.089765	0.003588	0.003173	12611156	3170332	5283.871	5.96E+08
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.001931	0.002322	0.002776	0.008527	0.014656	3.4E-05	0.000496	0.000375	2.1E-07	1.81E-07	720.6399	0	117.785	0
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.00237	0.002851	0.003407	0.013874	0.017884	4.27E-05	0.000628	0.000474	3.09E-07	2.66E-07	1058.207	0	817.7899	0
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.001178	0.001406	0.001695	0.010754	0.010546	1.232615	0.000336	0.000295	1.6E-05	1.03E-05	41009.4	29470.1	75.18215	972513.3
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.000238	0.000287	0.000343	0.000979	0.001813	4.18E-06	6.09E-05	4.6E-05	2.49E-08	2.14E-08	85.23637	0	34.45203	0
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.001704	0.00205	0.00245	0.006997	0.012955	2.99E-05	0.000436	0.000329	1.78E-07	1.53E-07	609.1652	0	54.15	0
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.005038	0.006059	0.007242	0.029822	0.038006	9.1E-05	0.001326	0.001002	6.61E-07	5.7E-07	2266.151	0	520.5676	0
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.000449	0.00054	0.000646	0.001844	0.003414	7.88E-06	0.000115	8.68E-05	4.68E-08	4.04E-08	160.5471	0	21.38	0
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.000763	0.000917	0.001096	0.003131	0.005797	1.34E-05	0.000195	0.000147	7.95E-08	6.85E-08	272.6101	0	53.12628	0
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.001621	0.00195	0.00233	0.010227	0.01221	2.95E-05	0.000429	0.000324	2.22E-07	1.91E-07	761.3174	0	473.24	0
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.01122	0.013495	0.016129	0.059017	0.084877	0.000201	0.002922	0.002208	1.36E-06	1.17E-06	4670.003	0	1431.275	0
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.000306	0.000368	0.000439	0.001254	0.002322	5.36E-06	7.81E-05	5.9E-05	3.19E-08	2.74E-08	109.2086	0	13.7519	0
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.025713	0.030922	0.036963	0.163943	0.194378	0.545303	0.006822	0.005172	1.05E-05	7.47E-06	29713.31	10581.35	4157.591	391509.9
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.088143	0.106017	0.126707	0.361406	0.670542	0.001544	0.022904	0.017306	9.19E-06	7.91E-06	31479.48	0	5578.399	0
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.008152	0.009805	0.011719	0.033467	0.061961	0.000143	0.002083	0.001574	8.5E-07	7.32E-07	2913.56	0	397.7718	0
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.010255	0.012335	0.014742	0.047228	0.077788	0.000181	0.002643	0.001997	1.15E-06	9.87E-07	3926.415	0	620.2169	0
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.079075	0.095681	0.113868	0.924269	0.743496	219.2652	0.033646	0.030955	0.002025	0.00179	7113817	2515808	3720.763	3.12E+08
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.416607	0.504094	0.599914	3.477961	4.77905	1316.424	0.141407	0.130094	0.012158	0.010744	42709918	5354652	3894.266	2.16E+09
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.112208	0.135772	0.161579	1.112495	1.252567	293.8415	0.060788	0.055925	0.002713	0.002398	9533365	2558303	5631.032	4.41E+08
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.024326	0.029434	0.035029	0.325564	0.275158	69.10319	0.014285	0.013142	0.000638	0.000564	2241977	803842.4	1998.547	1.04E+08
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.013102	0.015854	0.018867	0.18086	0.149693	40.17281	0.006648	0.006117	0.000371	0.000328	1303363	536487.8	1132.363	70583456
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.078472	0.094951	0.112999	1.067633	0.80039	179.1433	0.03957	0.036404	0.001654	0.001462	5812106	3645943	10418.33	2.93E+08
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.043086	0.052134	0.062044	1.156292	0.65584	194.5272	0.020467	0.018829	0.001797	0.001588	6311222	3014208	10495.68	3.03E+08
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.078852	0.095411	0.113547	0.723677	0.924648	114.8794	0.044433	0.040878	0.00106	0.000938	3727137	727097.2	927.9495	1.81E+08
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.579625	0.701346	0.83466	5.719323	5.954764	1582.638	0.254922	0.234529	0.014615	0.012917	51346963	13579057	13603.06	2.75E+09
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.403219	0.487894	0.580635	3.728222	4.98305	1029.291	0.201446	0.18533	0.009504	0.008401	33394215	3643470	7642.85	1.34E+09
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.050838	0.061514	0.073207	1.157941	0.751008	188.6865	0.023205	0.021349	0.001743	0.00154	6121727	4821826	13610.42	3.16E+08
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.004846	0.005863	0.006978	0.05914	0.069436	21.65971	0.002562	0.002357	0.0002	0.000177	702725.6	171053	625.0056	44977468
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.497892	0.602449	0.716965	8.283385	5.72556	1442.584	0.251103	0.231015	0.013322	0.011774	46803055	24992747	41052.02	2.44E+09
Statewide	2024	Constructic	Aggregate	Aggregate	Diesel	0.037468	0.045337	0.053955	0.33856	0.368782	59.46621	0.020456	0.018819	0.000549	0.000485	1929316	910101.6	2466.199	71498102
Statewide	2024	Industrial -	Aggregate	Aggregate	Diesel	0.01642	0.019868	0.023645	0.524079	0.322898	91.58446	0.004143	0.003812	0.000846	0.000748	2971357	2859984	9250.305	1.8E+08
Statewide	2024	Industrial -	Aggregate	Aggregate	Diesel	0.17872	0.216252	0.257357	2.515984	1.892233	385.6075	0.104843	0.096456	0.00356	0.003147	12510611	13384704	17352.98	1.2E+09
Statewide	2024	Industrial -	Aggregate	Aggregate	Diesel	0.007282	0.008759	0.010468	0.035423	0.055272	0.000129	0.001942	0.001467	8.42E-07	7.25E-07	2884.223	0	1343.836	0
Statewide	2024	Industrial -	Aggregate	Aggregate	Diesel	0.005568	0.006697	0.008005	0.027121	0.043545	0.000102	0.001483	0.00112	6.44E-07	5.55E-07	2207.288	0	271.1433	0
Statewide	2024	Industrial -	Aggregate	Aggregate	Diesel	0.001417	0.001704	0.002037	0.00754	0.011265	2.65E-05	0.000386	0.000292	1.73E-07	1.49E-07	594.2664	0	111.2091	0
Statewide	2024	Industrial -	Aggregate	Aggregate	Diesel	0.077709	0.094028	0.111901	0.918923	0.729762	186.2374	0.031867	0.029317	0.00172	0.00152	6042266	3775676	4417.661	3.33E+08
Statewide	2024	Industrial -	Aggregate	Aggregate	Diesel	0.037405	0.04526	0.053863	0.434966	0.394018	109.1914	0.016739	0.0154	0.001008	0.000891	3542596	1032003	1328.83	1.73E+08

Statewide	2024	Light Comn	Aggregate	Aggregate	Diesel	0.025859	0.030806	0.03723	0.244625	0.203624	29.61458	0.007015	0.006665	0.000375	0.000249	989787.8	892081.9	1276.17	33007030
Statewide	2024	Light Comn	Aggregate	Aggregate	Diesel	0.105368	0.126179	0.151577	0.825048	0.965422	139.0709	0.028229	0.031606	0.001584	0.001157	4602102	1795793	15665.2	59261159
Statewide	2024	Light Comn	Aggregate	Aggregate	Diesel	0.000479	0.000574	0.000689	0.004086	0.004919	0.720047	0.000134	0.000155	8.11E-06	5.84E-06	23211.07	18041.95	467.1324	685594.1
Statewide	2024	Light Comn	Aggregate	Aggregate	Diesel	0.061839	0.074021	0.088965	0.481635	0.532941	76.80609	0.016131	0.017767	0.000883	0.00064	2544764	937455.1	8157.105	34685837
Statewide	2024	Light Comn	Aggregate	Aggregate	Diesel	0.128516	0.153323	0.184989	1.145062	1.053979	153.773	0.035096	0.034845	0.001891	0.001289	5123993	3518009	9292.498	1.62E+08
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.018639	0.022553	0.02684	0.291357	0.237069	99.81735	0.007783	0.00716	0.000922	0.000815	3238464	563267.3	1528.844	1.25E+08
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.098758	0.119498	0.142212	0.935074	1.165991	235.5588	0.053446	0.04917	0.002175	0.001923	7642445	2219491	4599.395	5.13E+08
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.231925	0.280629	0.333972	2.263349	2.639071	581.6664	0.129302	0.118958	0.005371	0.004747	18871524	4009079	8472.02	8.5E+08
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.248077	0.300173	0.357231	3.621873	2.316855	1048.206	0.085525	0.078683	0.009684	0.008555	34007897	10857766	16466.44	1.71E+09
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.171804	0.207883	0.247398	1.448106	1.992215	393.2183	0.083863	0.077154	0.00363	0.003209	12757536	3207653	5323.31	6.03E+08
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.001961	0.002359	0.00282	0.008662	0.014889	3.46E-05	0.000504	0.000381	2.14E-07	1.84E-07	732.1001	0	119.659	0
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.0024	0.002887	0.003451	0.014057	0.018119	4.33E-05	0.000635	0.00048	3.13E-07	2.69E-07	1072.029	0	828.7701	0
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.001138	0.001358	0.001638	0.010825	0.010449	1.249034	0.000304	0.000266	1.62E-05	1.04E-05	41529.36	29857	76.16977	985281
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.000242	0.000291	0.000348	0.000993	0.001838	4.24E-06	6.18E-05	4.67E-05	2.52E-08	2.17E-08	86.43387	0	34.93605	0
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.001727	0.002078	0.002483	0.007092	0.013129	3.03E-05	0.000442	0.000334	1.8E-07	1.55E-07	617.3775	0	54.88	0
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.005111	0.006147	0.007347	0.030253	0.038558	9.23E-05	0.001345	0.001017	6.71E-07	5.78E-07	2298.913	0	528.0912	0
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.000454	0.000546	0.000653	0.001864	0.003451	7.97E-06	0.000116	8.77E-05	4.73E-08	4.08E-08	162.2742	0	21.61	0
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.000772	0.000928	0.001109	0.003168	0.005865	1.35E-05	0.000197	0.000149	8.05E-08	6.93E-08	275.7973	0	53.7474	0
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.001643	0.001976	0.002361	0.010364	0.012373	2.99E-05	0.000435	0.000329	2.25E-07	1.94E-07	771.5008	0	479.57	0
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.011373	0.01368	0.01635	0.05982	0.086038	0.000203	0.002962	0.002238	1.38E-06	1.19E-06	4733.672	0	1450.683	0
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.000314	0.000378	0.000452	0.00129	0.002388	5.51E-06	8.03E-05	6.07E-05	3.28E-08	2.82E-08	112.2859	0	14.1394	0
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.026029	0.031303	0.037418	0.166095	0.196866	0.552566	0.006897	0.005227	1.07E-05	7.57E-06	30094.28	10712.75	4212.859	396371.7
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.089048	0.107105	0.128007	0.365307	0.677375	0.001561	0.023053	0.017418	9.28E-06	8E-06	31812.35	0	5639.784	0
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.008266	0.009942	0.011883	0.033934	0.062827	0.000145	0.002113	0.001596	8.62E-07	7.43E-07	2954.285	0	403.3317	0
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.010388	0.012495	0.014933	0.047845	0.078796	0.000184	0.002677	0.002023	1.16E-06	1E-06	3977.567	0	628.528	0
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.072705	0.087973	0.104695	0.922337	0.673146	221.7597	0.028402	0.02613	0.002048	0.00181	7194749	2545332	3748.535	3.16E+08
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.391412	0.473609	0.563634	3.415059	4.275973	1332.867	0.120054	0.11045	0.012311	0.010879	43243391	5417694	3923.333	2.19E+09
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.105293	0.127405	0.151622	1.111704	1.153876	297.3003	0.054411	0.050058	0.002746	0.002427	9645582	2588341	5673.062	4.46E+08
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.022837	0.027633	0.032885	0.328616	0.247903	69.88512	0.012846	0.011818	0.000645	0.00057	2267346	813282.4	2013.465	1.05E+08
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.011804	0.014283	0.016997	0.181439	0.129532	40.64771	0.005602	0.005154	0.000375	0.000332	1318770	542821.8	1140.815	71434112
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.073432	0.088853	0.105743	1.073439	0.752335	181.2381	0.035168	0.032355	0.001673	0.001479	5880072	3689086	10496.09	2.96E+08
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.040616	0.049145	0.058487	1.167061	0.619984	196.804	0.017909	0.016477	0.001818	0.001606	6385089	3049597	10574.02	3.06E+08
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.071997	0.087116	0.103675	0.653827	0.814564	116.1875	0.038719	0.035622	0.001072	0.000948	3769576	735622.3	934.8758	1.83E+08
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.533641	0.645706	0.768443	5.66964	5.09089	1602.241	0.213043	0.196	0.014798	0.013077	51982943	13738590	13704.6	2.78E+09
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.362931	0.439146	0.52262	3.48183	4.213974	1041.439	0.170854	0.157186	0.009618	0.0085	33788351	3686150	7699.897	1.35E+09
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.049303	0.059657	0.070997	1.167302	0.733292	190.8377	0.021423	0.019709	0.001763	0.001558	6191519	4878847	13712.01	3.19E+08
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.004466	0.005404	0.006432	0.059509	0.061637	21.88837	0.002204	0.002028	0.000202	0.000179	710144.1	173041.8	629.6707	45468673
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.464334	0.561844	0.668641	8.343787	5.295154	1460.79	0.210307	0.193483	0.013492	0.011923	47393708	25286575	41358.44	2.47E+09
Statewide	2025	Constructic	Aggregate	Aggregate	Diesel	0.035242	0.042643	0.050748	0.337757	0.354682	60.19055	0.018492	0.017013	0.000555	0.000491	1952816	920877	2484.607	72353546
Statewide	2025	Industrial -	Aggregate	Aggregate	Diesel	0.016234	0.019643	0.023377	0.528274	0.324346	92.66205	0.004071	0.003745	0.000856	0.000756	3006318	2893635	9319.35	1.82E+08
Statewide	2025	Industrial -	Aggregate	Aggregate	Diesel	0.167379	0.202529	0.241026	2.533902	1.768936	390.1446	0.091779	0.084437	0.003602	0.003184	12657812	13542190	17482.51	1.21E+09
Statewide	2025	Industrial -	Aggregate	Aggregate	Diesel	0.00725	0.00872	0.010422	0.035273	0.054995	0.000129	0.001921	0.001451	8.38E-07	7.22E-07	2871.797	0	1338.652	0
Statewide	2025	Industrial -	Aggregate	Aggregate	Diesel	0.005602	0.006738	0.008053	0.027277	0.043807	0.000102	0.001492	0.001127	6.48E-07	5.58E-07	2220.219	0	272.6153	0
Statewide	2025	Industrial -	Aggregate	Aggregate	Diesel	0.001419	0.001707	0.00204	0.007559	0.011285	2.66E-05	0.000387	0.000292	1.74E-07	1.5E-07	595.5442	0	111.498	0
Statewide	2025	Industrial -	Aggregate	Aggregate	Diesel	0.072434	0.087646	0.104306	0.920206	0.687025	188.4286	0.027161	0.024988	0.00174	0.001538	6113360	3820101	4450.634	3.37E+08
Statewide	2025	Industrial -	Aggregate	Aggregate	Diesel	0.035361	0.042787	0.05092	0.436729	0.363188	110.4762	0.014749	0.013569	0.00102	0.000902	3584278	1044146	1338.748	1.75E+08
Statewide	2025	Light Comn	Aggregate	Aggregate	Diesel	0.024477	0.029161	0.03524	0.244156	0.199084	29.73052	0.006123	0.005841	0.000376	0.00025	993249.3	895596.9	1281.28	33137083
Statewide	2025	Light Comn	Aggregate	Aggregate	Diesel	0.102176	0.122378	0.14698	0.823201	0.952863	139.6187	0.026086	0.029529	0.00159	0.001162	4619239	1802925	15726.81	59496518
Statewide	2025	Light Comn	Aggregate	Aggregate	Diesel	0.000467	0.00056	0.000672	0.004082	0.004858	0.722918	0.000125	0.000146	8.14E-06	5.86E-06	23312.6	18100.35	469.1421	687813.3
Statewide	2025	Light Comn	Aggregate	Aggregate	Diesel	0.059674	0.071442	0.085848	0.48054	0.52538	77.10991	0.014821	0.016503	0.000887	0.000642	2554228	941108.7	8189.412	34821022
Statewide	2025	Light Comn	Aggregate	Aggregate	Diesel	0.121898	0.145444	0.17546	1.141715	1.033301	154.3823	0.031108	0.031128	0.001899	0.001293	5142473	3531813	9329.056	1.62E+08
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.01867	0.02259	0.026884	0.295294	0.234065	101.0506	0.007519	0.006917	0.000934	0.000825	3278477	569800.9	1540.11	1.26E+08
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.093839	0.113545	0.135128	0.920927	1.084023	238.2958	0.04899	0.04507	0.0022	0.001945	7731243	2245319	4633.288	5.19E+08
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.222545	0.26928	0.320466	2.273415	2.458483	588.5059	0.119367	0.109817	0.005434	0.004803	19093427	4055724	8534.451	8.6E+08
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.243584	0.294737	0.350762	3.664439	2.19879	1060.687	0.078207	0.07195	0.009799	0.008657	34412805	10984118	16587.79	1.73E+09

Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.159637	0.193161	0.229877	1.452003	1.756307	398.0659	0.07428	0.068338	0.003676	0.003249	12914808	3244858	5362.538	6.1E+08
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.001998	0.002403	0.002872	0.00882	0.015166	3.52E-05	0.000513	0.000388	2.18E-07	1.87E-07	745.546	0	121.8352	0
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.002431	0.002924	0.003495	0.014241	0.018351	4.39E-05	0.000642	0.000485	3.17E-07	2.73E-07	1085.926	0	839.62	0
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.001104	0.001318	0.001589	0.010903	0.010353	1.265453	0.000274	0.000238	1.64E-05	1.06E-05	42081.88	30284.05	77.14655	999373.6
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.000245	0.000295	0.000353	0.001007	0.001865	4.3E-06	6.27E-05	4.74E-05	2.56E-08	2.2E-08	87.68151	0	35.44034	0
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.001752	0.002107	0.002518	0.007191	0.013314	3.07E-05	0.000448	0.000338	1.83E-07	1.57E-07	626.0396	0	55.65	0
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.005182	0.006233	0.007449	0.030674	0.039094	9.36E-05	0.001364	0.001031	6.8E-07	5.86E-07	2330.888	0	535.4359	0
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.000462	0.000556	0.000664	0.001897	0.003512	8.11E-06	0.000118	8.92E-05	4.82E-08	4.15E-08	165.1277	0	21.99	0
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.000781	0.00094	0.001123	0.003207	0.005938	1.37E-05	0.0002	0.000151	8.15E-08	7.02E-08	279.2074	0	54.41196	0
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.001664	0.002002	0.002392	0.010499	0.012535	3.03E-05	0.000441	0.000333	2.28E-07	1.96E-07	781.5875	0	485.84	0
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.011525	0.013861	0.016567	0.060609	0.087181	0.000206	0.003002	0.002268	1.4E-06	1.21E-06	4796.281	0	1469.733	0
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.000321	0.000386	0.000461	0.001317	0.002438	5.63E-06	8.2E-05	6.19E-05	3.34E-08	2.88E-08	114.6328	0	14.43492	0
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.026349	0.031688	0.037878	0.168256	0.199363	0.55983	0.006973	0.005282	1.08E-05	7.67E-06	30490.41	10884.3	4268.411	402719.1
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.089924	0.108159	0.129267	0.369006	0.683822	0.001577	0.023199	0.017528	9.38E-06	8.08E-06	32130.74	0	5696.88	0
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.00838	0.010079	0.012046	0.034401	0.06369	0.000147	0.002142	0.001618	8.74E-07	7.53E-07	2994.866	0	408.872	0
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.010546	0.012684	0.01516	0.048548	0.079991	0.000187	0.002718	0.002053	1.18E-06	1.01E-06	4036.737	0	636.9607	0
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.07088	0.085764	0.102067	0.932541	0.64387	224.3469	0.025512	0.023471	0.002072	0.001831	7278689	2575034	3776.158	3.19E+08
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.393219	0.475795	0.566235	3.454744	4.15665	1348.965	0.114	0.10488	0.01246	0.01101	43765676	5480663	3952.244	2.22E+09
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.100989	0.122197	0.145425	1.11114	1.085722	300.5604	0.05016	0.046147	0.002776	0.002453	9751350	2618469	5714.867	4.51E+08
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.021725	0.026287	0.031283	0.331766	0.231322	70.71123	0.011725	0.010787	0.000653	0.000577	2294148	822738.4	2028.302	1.07E+08
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.011344	0.013726	0.016335	0.182926	0.121958	41.13349	0.005165	0.004752	0.00038	0.000336	1334531	549119.8	1149.222	72272336
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.070996	0.085905	0.102234	1.085284	0.72911	183.3902	0.032571	0.029966	0.001693	0.001497	5949893	3731849	10573.43	3E+08
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.039449	0.047734	0.056807	1.179547	0.600744	199.0913	0.016503	0.015183	0.00184	0.001625	6459299	3085066	10651.94	3.1E+08
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.069577	0.084189	0.100192	0.646298	0.768839	117.3773	0.036243	0.033344	0.001083	0.000958	3808177	744182.4	941.7649	1.85E+08
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.514833	0.622948	0.741359	5.704153	4.638214	1620.948	0.189993	0.174793	0.014971	0.01323	52589879	13898394	13805.59	2.82E+09
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.351762	0.425633	0.506538	3.445358	3.911084	1053.56	0.159254	0.146514	0.00973	0.008599	34181609	3729041	7756.637	1.37E+09
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.048117	0.058222	0.069289	1.176898	0.722689	192.9865	0.019968	0.018371	0.001783	0.001575	6261234	4935476	13813.05	3.23E+08
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.004231	0.00512	0.006093	0.059971	0.055372	22.19364	0.001976	0.001818	0.000205	0.000181	720048.2	175076.5	634.3108	46089172
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.450062	0.544576	0.64809	8.453345	5.050869	1478.788	0.185557	0.170712	0.013659	0.01207	47977645	25580930	41663.21	2.5E+09
Statewide	2026	Constructic	Aggregate	Aggregate	Diesel	0.033932	0.041057	0.048862	0.33928	0.346116	60.9048	0.017273	0.015892	0.000562	0.000497	1975989	931590.1	2502.916	73264912
Statewide	2026	Industrial -	Aggregate	Aggregate	Diesel	0.016241	0.019651	0.023387	0.533287	0.32682	93.73963	0.004036	0.003713	0.000866	0.000765	3041279	2927286	9388.024	1.84E+08
Statewide	2026	Industrial -	Aggregate	Aggregate	Diesel	0.155725	0.188427	0.224244	2.549524	1.636894	394.6817	0.07784	0.071613	0.003644	0.003221	12805013	13699675	17611.33	1.23E+09
Statewide	2026	Industrial -	Aggregate	Aggregate	Diesel	0.007265	0.008738	0.010444	0.035369	0.055085	0.000129	0.001915	0.001447	8.4E-07	7.24E-07	2878.933	0	1342.181	0
Statewide	2026	Industrial -	Aggregate	Aggregate	Diesel	0.005647	0.006792	0.008118	0.027503	0.044163	0.000103	0.001504	0.001136	6.53E-07	5.63E-07	2238.493	0	274.9471	0
Statewide	2026	Industrial -	Aggregate	Aggregate	Diesel	0.001431	0.001721	0.002057	0.007609	0.011373	2.68E-05	0.00039	0.000295	1.75E-07	1.51E-07	599.8164	0	112.2195	0
Statewide	2026	Industrial -	Aggregate	Aggregate	Diesel	0.069178	0.083705	0.099616	0.924392	0.655076	190.6199	0.023675	0.021781	0.00176	0.001556	6184454	3864526	4483.431	3.41E+08
Statewide	2026	Industrial -	Aggregate	Aggregate	Diesel	0.033846	0.040954	0.048739	0.434337	0.335209	111.7609	0.013222	0.012164	0.001032	0.000912	3625960	1056288	1348.614	1.77E+08
Statewide	2026	Light Comn	Aggregate	Aggregate	Diesel	0.023242	0.027691	0.033462	0.243745	0.19458	29.85806	0.005263	0.005047	0.000378	0.000251	997303.3	899531.6	1286.39	33282667
Statewide	2026	Light Comn	Aggregate	Aggregate	Diesel	0.099334	0.118996	0.142889	0.821903	0.941066	140.2122	0.0241	0.027633	0.001597	0.001166	4637926	1810593	15793.46	59749584
Statewide	2026	Light Comn	Aggregate	Aggregate	Diesel	0.000456	0.000547	0.000656	0.004081	0.004801	0.726076	0.000117	0.000138	8.18E-06	5.87E-06	23346.74	18166.05	471.2921	690309.9
Statewide	2026	Light Comn	Aggregate	Aggregate	Diesel	0.057724	0.069119	0.083041	0.47971	0.518215	77.43661	0.013573	0.015306	0.00089	0.000645	2564558	945061.7	8223.99	34967281
Statewide	2026	Light Comn	Aggregate	Aggregate	Diesel	0.116008	0.138433	0.166979	1.139061	1.013027	155.0368	0.02729	0.027575	0.001907	0.001299	5162770	3546917	9368.414	1.63E+08
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.018796	0.022743	0.027066	0.298181	0.23048	101.9338	0.007284	0.006701	0.000942	0.000832	3307130	576359.6	1551.316	1.27E+08
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.090303	0.109266	0.130036	0.922476	1.015705	241.0391	0.045479	0.041841	0.002226	0.001967	7820248	2271222	4667	5.25E+08
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.212688	0.257353	0.306271	2.28155	2.283447	595.4998	0.108758	0.100058	0.005499	0.00486	19320336	4102456	8596.549	8.7E+08
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.238755	0.288893	0.343807	3.704944	2.078011	1073.072	0.071522	0.0658	0.009914	0.008758	34814647	11110460	16708.48	1.75E+09
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.15173	0.183593	0.218491	1.462773	1.586438	402.5199	0.067279	0.061897	0.003717	0.003285	13059315	3282209	5401.557	6.17E+08
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.002033	0.002445	0.002922	0.008974	0.015432	3.58E-05	0.000522	0.000395	2.21E-07	1.91E-07	758.5873	0	123.9618	0
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.002463	0.002962	0.00354	0.014428	0.018589	4.45E-05	0.00065	0.000491	3.21E-07	2.77E-07	1100.149	0	850.6099	0
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.001075	0.001284	0.001547	0.010989	0.010268	1.28187	0.000246	0.000212	1.66E-05	1.07E-05	42649.05	30678.25	78.05279	1012382
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.000249	0.000299	0.000358	0.001021	0.001891	4.37E-06	6.36E-05	4.8E-05	2.59E-08	2.24E-08	88.92443	0	35.94272	0
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.001774	0.002134	0.00255	0.007283	0.013484	3.11E-05	0.000453	0.000343	1.85E-07	1.59E-07	634.0268	0	56.36	0
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.005256	0.006322	0.007556	0.031112	0.039654	9.5E-05	0.001384	0.001045	6.9E-07	5.94E-07	2364.208	0	543.0884	0
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.000469	0.000564	0.000674	0.001923	0.003561	8.22E-06	0.00012	9.05E-05	4.89E-08	4.21E-08	167.4555	0	22.3	0
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.000793	0.000953	0.00114	0.003254	0.006025	1.39E-05	0.000203	0.000153	8.27E-08	7.12E-08	283.3169	0	55.21282	0

Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.001686	0.002028	0.002423	0.010636	0.012698	3.07E-05	0.000447	0.000337	2.31E-07	1.99E-07	791.7548	0	492.16	0
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.011677	0.014045	0.016786	0.06141	0.088337	0.000209	0.003042	0.002298	1.42E-06	1.22E-06	4859.717	0	1489.108	0
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.000326	0.000392	0.000468	0.001337	0.002475	5.71E-06	8.32E-05	6.29E-05	3.4E-08	2.92E-08	116.3656	0	14.65313	0
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.02667	0.032074	0.038339	0.170412	0.201854	0.567093	0.00705	0.005338	1.09E-05	7.77E-06	30878.87	11052.2	4323.774	408931.4
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.090836	0.109256	0.130579	0.372819	0.690605	0.001593	0.023368	0.017656	9.47E-06	8.16E-06	32460.25	0	5755.754	0
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.008492	0.010214	0.012208	0.034863	0.064547	0.000149	0.002171	0.00164	8.86E-07	7.63E-07	3035.162	0	414.3734	0
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.010677	0.012842	0.015348	0.049145	0.080987	0.000189	0.002751	0.002079	1.19E-06	1.03E-06	4086.59	0	644.4968	0
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.069211	0.083746	0.099664	0.944099	0.615277	226.8863	0.022967	0.02113	0.002096	0.001852	7361077	2604574	3803.634	3.23E+08
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.394848	0.477765	0.56858	3.458533	4.040063	1364.298	0.108306	0.099641	0.012602	0.011135	44263137	5543674	3981.001	2.24E+09
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.097188	0.117597	0.13995	1.11737	1.026698	304.015	0.046037	0.042354	0.002808	0.002481	9863433	2648512	5756.449	4.56E+08
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.021001	0.025412	0.030242	0.335644	0.219226	71.54549	0.010787	0.009924	0.000661	0.000584	2321215	832214.7	2043.06	1.08E+08
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.01108	0.013407	0.015955	0.184793	0.116044	41.61059	0.00481	0.004426	0.000384	0.00034	1350010	555456.2	1157.584	73083179
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.069051	0.083551	0.099433	1.098783	0.70201	185.5026	0.030225	0.027807	0.001713	0.001514	6018428	3774678	10650.37	3.03E+08
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.038451	0.046526	0.055369	1.191695	0.587472	201.3997	0.015483	0.014244	0.001861	0.001644	6534191	3120583	10729.45	3.14E+08
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.067003	0.081074	0.096485	0.639838	0.73294	118.747	0.033762	0.031061	0.001096	0.000969	3852616	752748	948.6174	1.87E+08
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.497254	0.601677	0.716046	5.741275	4.168087	1639.673	0.168013	0.154572	0.015145	0.013383	53197377	14058412	13906.04	2.85E+09
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.344421	0.416749	0.495966	3.441851	3.6609	1066.121	0.14974	0.137761	0.009846	0.008702	34589114	3771968	7813.076	1.38E+09
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.047211	0.057125	0.067984	1.189042	0.712637	195.1925	0.018503	0.017022	0.001803	0.001593	6332807	4992189	13913.56	3.27E+08
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.004168	0.005043	0.006002	0.060704	0.053038	22.45001	0.001845	0.001698	0.000207	0.000183	728365.8	177106.6	638.9261	46649642
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.438302	0.530345	0.631154	8.559088	4.867203	1496.035	0.165636	0.152385	0.013818	0.01221	48537210	25874423	41966.36	2.53E+09
Statewide	2027	Constructic	Aggregate	Aggregate	Diesel	0.032496	0.03932	0.046794	0.340566	0.336346	61.64109	0.016027	0.014745	0.000569	0.000503	1999877	942248.8	2521.127	74126914
Statewide	2027	Industrial -	Aggregate	Aggregate	Diesel	0.016326	0.019754	0.023509	0.538974	0.329613	94.81722	0.004029	0.003707	0.000876	0.000774	3076240	2960937	9456.333	1.86E+08
Statewide	2027	Industrial -	Aggregate	Aggregate	Diesel	0.148682	0.179905	0.214102	2.576158	1.54897	399.2188	0.068266	0.062804	0.003687	0.003258	12952213	13857160	17739.48	1.24E+09
Statewide	2027	Industrial -	Aggregate	Aggregate	Diesel	0.007304	0.008785	0.0105	0.035597	0.055363	0.00013	0.001916	0.001447	8.45E-07	7.28E-07	2896.376	0	1350.448	0
Statewide	2027	Industrial -	Aggregate	Aggregate	Diesel	0.005705	0.006862	0.008202	0.027798	0.044621	0.000104	0.00152	0.001148	6.6E-07	5.69E-07	2262.102	0	277.9955	0
Statewide	2027	Industrial -	Aggregate	Aggregate	Diesel	0.001433	0.001724	0.00206	0.007623	0.011392	2.68E-05	0.000391	0.000295	1.75E-07	1.51E-07	600.8813	0	112.4278	0
Statewide	2027	Industrial -	Aggregate	Aggregate	Diesel	0.067622	0.081823	0.097376	0.935285	0.63279	192.8112	0.021004	0.019323	0.001781	0.001574	6255547	3908951	4516.053	3.45E+08
Statewide	2027	Industrial -	Aggregate	Aggregate	Diesel	0.033083	0.04003	0.047639	0.439187	0.319627	113.0457	0.012127	0.011156	0.001044	0.000923	3667643	1068431	1358.426	1.79E+08
Statewide	2027	Light Comn	Aggregate	Aggregate	Diesel	0.022122	0.026358	0.031849	0.243285	0.190172	29.99433	0.004431	0.004279	0.00038	0.000252	1001550	903637.8	1292.45	33434599
Statewide	2027	Light Comn	Aggregate	Aggregate	Diesel	0.096809	0.115991	0.139252	0.821143	0.930261	140.8618	0.022202	0.025831	0.001604	0.001171	4658609	1818912	15866.95	60024089
Statewide	2027	Light Comn	Aggregate	Aggregate	Diesel	0.000447	0.000536	0.000643	0.004083	0.00475	0.729432	0.000109	0.000131	8.21E-06	5.91E-06	23496.03	18239.05	473.362	693083.9
Statewide	2027	Light Comn	Aggregate	Aggregate	Diesel	0.055994	0.067058	0.080549	0.479149	0.511614	77.7946	0.01238	0.014168	0.000895	0.000648	2575829	949423.4	8261.736	35128666
Statewide	2027	Light Comn	Aggregate	Aggregate	Diesel	0.110758	0.132184	0.159419	1.136746	0.993562	155.7562	0.023619	0.024164	0.001916	0.001304	5185176	3563291	9412.182	1.64E+08
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.01912	0.023136	0.027533	0.301921	0.232039	103.0467	0.007274	0.006692	0.000952	0.000841	3343238	582918.4	1562.463	1.29E+08
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.088777	0.10742	0.127839	0.927924	0.96839	243.8298	0.043465	0.039988	0.002252	0.00199	7910789	2296851	4700.536	5.31E+08
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.20475	0.247747	0.294839	2.293195	2.136118	602.3056	0.10013	0.092119	0.005562	0.004916	19541143	4148973	8658.32	8.8E+08
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.235461	0.284908	0.339064	3.7512	1.984625	1084.891	0.06644	0.061124	0.010023	0.008855	35198101	11236635	16828.54	1.77E+09
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.147517	0.178495	0.212424	1.480184	1.480571	407.3064	0.062418	0.057425	0.003761	0.003324	13214606	3319455	5440.37	6.24E+08
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.002069	0.002489	0.002975	0.009135	0.01571	3.65E-05	0.000532	0.000402	2.25E-07	1.94E-07	772.189	0	126.18	0
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.002494	0.003	0.003585	0.014611	0.018822	4.5E-05	0.000657	0.000497	3.25E-07	2.8E-07	1114.075	0	861.45	0
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.001051	0.001256	0.001513	0.011083	0.010202	1.298286	0.000219	0.000187	1.68E-05	1.09E-05	43165.15	31068.8	79.11551	1025270
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.000252	0.000303	0.000362	0.001034	0.001913	4.42E-06	6.43E-05	4.86E-05	2.63E-08	2.26E-08	89.97606	0	36.36779	0
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.001795	0.002159	0.00258	0.007369	0.013644	3.15E-05	0.000459	0.000347	1.87E-07	1.61E-07	641.5641	0	57.03	0
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.005329	0.00641	0.007661	0.031543	0.040206	9.63E-05	0.001403	0.00106	6.99E-07	6.02E-07	2397.022	0	550.6245	0
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.000474	0.00057	0.000681	0.001944	0.0036	8.31E-06	0.000121	9.15E-05	4.94E-08	4.25E-08	169.2578	0	22.54	0
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.000802	0.000964	0.001152	0.003291	0.006093	1.41E-05	0.000205	0.000155	8.36E-08	7.2E-08	286.5109	0	55.83526	0
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.001708	0.002054	0.002455	0.010773	0.012862	3.1E-05	0.000452	0.000342	2.34E-07	2.02E-07	802.0024	0	498.53	0
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.011834	0.014234	0.017012	0.062224	0.089526	0.000212	0.003082	0.002329	1.44E-06	1.24E-06	4924.48	0	1508.624	0
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.000327	0.000393	0.00047	0.001343	0.002486	5.74E-06	8.36E-05	6.32E-05	3.41E-08	2.94E-08	116.917	0	14.72256	0
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.026993	0.032462	0.038803	0.172568	0.204351	0.574356	0.007127	0.005394	1.11E-05	7.87E-06	31300.12	11176.3	4379.044	413523.1
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.09176	0.110367	0.131906	0.376659	0.697516	0.00161	0.023553	0.017795	9.57E-06	8.24E-06	32792.8	0	5815.041	0
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.008605	0.010351	0.012371	0.035328	0.065407	0.000151	0.0022	0.001662	8.97E-07	7.73E-07	3075.587	0	419.8924	0
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.010797	0.012987	0.015521	0.04969	0.0819	0.000191	0.002782	0.002102	1.21E-06	1.04E-06	4132.24	0	651.368	0
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.067384	0.081535	0.097033	0.954908	0.576226	229.5706	0.020446	0.01881	0.00212	0.001874	7448166	2634171	3830.966	3.26E+08
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.393928	0.476653	0.567256	3.486459	3.929323	1379.869	0.103069	0.094823	0.012746	0.011262	44768333	5606618	4009.607	2.27E+09

Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.095218	0.115213	0.137113	1.128202	0.985073	307.4747	0.04328	0.039818	0.00284	0.00251	9975679	2678735	5797.813	4.61E+08
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.020222	0.024468	0.029119	0.339223	0.205844	72.34573	0.009821	0.009036	0.000668	0.00059	2347177	841672.7	2057.741	1.09E+08
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.011003	0.013313	0.015844	0.186958	0.113191	42.08493	0.004568	0.004202	0.000389	0.000343	1365399	561742.8	1165.902	73929550
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.066781	0.080805	0.096165	1.110821	0.680384	187.6077	0.027949	0.025713	0.001733	0.001531	6086727	3817527	10726.9	3.07E+08
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.03766	0.045569	0.054231	1.203068	0.580372	203.6958	0.014668	0.013495	0.001882	0.001663	6608685	3156670	10806.55	3.17E+08
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.066691	0.080696	0.096035	0.648113	0.716095	120.0748	0.032951	0.030315	0.001108	0.00098	3895694	761253.6	955.4338	1.89E+08
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.491484	0.594696	0.707737	5.804638	3.899757	1657.692	0.15308	0.140833	0.015311	0.01353	53782000	14218000	14005.96	2.88E+09
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.33675	0.407468	0.484921	3.431556	3.432707	1078.564	0.14029	0.129067	0.009962	0.008803	34992813	3814922	7869.218	1.4E+09
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.046279	0.055997	0.066641	1.202113	0.7061	197.4116	0.017201	0.015825	0.001824	0.001611	6404801	5048873	14013.53	3.3E+08
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.004151	0.005022	0.005977	0.061413	0.051114	22.6821	0.001778	0.001636	0.00021	0.000185	735895.7	179100	643.5172	47158615
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.432683	0.523546	0.623063	8.677545	4.73933	1513.617	0.151533	0.13941	0.013981	0.012354	49107649	26169178	42267.91	2.56E+09
Statewide	2028	Constructic	Aggregate	Aggregate	Diesel	0.031579	0.038211	0.045474	0.343624	0.328587	62.34554	0.015067	0.013861	0.000575	0.000509	2022733	952908.3	2539.243	74959826
Statewide	2028	Industrial -	Aggregate	Aggregate	Diesel	0.016436	0.019888	0.023668	0.545301	0.332295	95.89481	0.003988	0.003669	0.000886	0.000783	3111202	2994587	9524.282	1.88E+08
Statewide	2028	Industrial -	Aggregate	Aggregate	Diesel	0.143285	0.173375	0.20633	2.605539	1.470714	403.7558	0.060163	0.05535	0.003729	0.003295	13099414	14014645	17866.95	1.25E+09
Statewide	2028	Industrial -	Aggregate	Aggregate	Diesel	0.007356	0.008848	0.010574	0.035884	0.055742	0.000131	0.001922	0.001452	8.52E-07	7.34E-07	2918.676	0	1360.94	0
Statewide	2028	Industrial -	Aggregate	Aggregate	Diesel	0.005762	0.006931	0.008283	0.028074	0.045063	0.000105	0.001535	0.00116	6.67E-07	5.74E-07	2284.593	0	280.7752	0
Statewide	2028	Industrial -	Aggregate	Aggregate	Diesel	0.001445	0.001738	0.002077	0.007689	0.011488	2.7E-05	0.000394	0.000298	1.77E-07	1.52E-07	605.9955	0	113.4022	0
Statewide	2028	Industrial -	Aggregate	Aggregate	Diesel	0.066326	0.080255	0.09551	0.943613	0.618531	195.0025	0.019133	0.017602	0.001801	0.001592	6326641	3953376	4548.504	3.49E+08
Statewide	2028	Industrial -	Aggregate	Aggregate	Diesel	0.031074	0.037599	0.044746	0.442834	0.285634	114.3304	0.010278	0.009456	0.001056	0.000933	3709325	1080573	1368.188	1.81E+08
Statewide	2028	Light Comn	Aggregate	Aggregate	Diesel	0.02116	0.025214	0.030465	0.242941	0.186239	30.13642	0.00368	0.003586	0.000381	0.000253	1005974	907879.1	1298.36	33591527
Statewide	2028	Light Comn	Aggregate	Aggregate	Diesel	0.09465	0.113423	0.136144	0.820956	0.920903	141.5258	0.020469	0.024189	0.001612	0.001177	4679835	1827570	15941.45	60309797
Statewide	2028	Light Comn	Aggregate	Aggregate	Diesel	0.00044	0.000527	0.000632	0.004088	0.004707	0.732842	0.000102	0.000124	8.25E-06	5.94E-06	23631.12	18396	475.5416	699048
Statewide	2028	Light Comn	Aggregate	Aggregate	Diesel	0.054513	0.065296	0.078417	0.478914	0.505862	78.16092	0.011291	0.013132	0.000899	0.000651	2587549	953978.6	8300.873	35297208
Statewide	2028	Light Comn	Aggregate	Aggregate	Diesel	0.106281	0.126855	0.152972	1.135229	0.97608	156.4934	0.020256	0.021042	0.001925	0.00131	5208377	3580062	9456.66	1.65E+08
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.019195	0.023225	0.02764	0.305074	0.229375	104.2639	0.007166	0.006593	0.000963	0.000851	3382726	589448	1573.552	1.3E+08
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.086842	0.105079	0.125053	0.926011	0.920897	246.5534	0.041295	0.037992	0.002277	0.002012	7999153	2322768	4733.896	5.37E+08
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.200245	0.242297	0.288353	2.309223	2.027056	608.905	0.094073	0.086548	0.005624	0.00497	19755252	4195602	8719.77	8.9E+08
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.234529	0.28378	0.337722	3.795967	1.93241	1097.078	0.063219	0.058162	0.010136	0.008954	35593489	11362909	16947.98	1.79E+09
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.14329	0.173381	0.206338	1.499715	1.37517	412.1413	0.057415	0.052822	0.003806	0.003364	13371472	3356785	5478.982	6.31E+08
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.002099	0.002525	0.003017	0.00926	0.015934	3.7E-05	0.000539	0.000407	2.28E-07	1.97E-07	782.9552	0	127.9049	0
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.002525	0.003037	0.00363	0.014796	0.019058	4.56E-05	0.000665	0.000503	3.29E-07	2.84E-07	1128.159	0	872.3099	0
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.001033	0.001234	0.001487	0.011182	0.010202	1.314705	0.000201	0.000171	1.7E-05	1.1E-05	43724.65	31455.7	79.94518	1038038
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.000255	0.000307	0.000367	0.001047	0.001938	4.47E-06	6.52E-05	4.92E-05	2.66E-08	2.29E-08	91.1235	0	36.83157	0
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.001819	0.002188	0.002615	0.007469	0.013828	3.19E-05	0.000465	0.000351	1.9E-07	1.63E-07	650.2262	0	57.8	0
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.005403	0.006498	0.007766	0.031976	0.040759	9.76E-05	0.001422	0.001075	7.09E-07	6.11E-07	2429.94	0	558.1848	0
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.00048	0.000577	0.00069	0.001971	0.003649	8.42E-06	0.000123	9.27E-05	5.01E-08	4.31E-08	171.5856	0	22.85	0
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.000811	0.000975	0.001166	0.003329	0.006164	1.42E-05	0.000207	0.000157	8.46E-08	7.29E-08	289.859	0	56.48775	0
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.001729	0.002079	0.002485	0.010908	0.013023	3.14E-05	0.000458	0.000346	2.37E-07	2.04E-07	812.0087	0	504.75	0
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.011983	0.014413	0.017226	0.063001	0.090652	0.000214	0.003121	0.002358	1.45E-06	1.25E-06	4986.126	0	1527.337	0
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.000329	0.000396	0.000474	0.001352	0.002504	5.78E-06	8.42E-05	6.36E-05	3.44E-08	2.96E-08	117.7426	0	14.82653	0
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.027319	0.032855	0.039272	0.174728	0.206881	0.581619	0.007208	0.005454	1.12E-05	7.97E-06	31695.86	11362.45	4434.401	420410.6
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.092722	0.111525	0.13329	0.38064	0.70477	0.001627	0.023758	0.01795	9.67E-06	8.33E-06	33138.35	0	5876.504	0
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.008718	0.010486	0.012533	0.035792	0.066266	0.000153	0.002228	0.001684	9.09E-07	7.83E-07	3115.976	0	425.4064	0
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.010903	0.013114	0.015674	0.050176	0.082704	0.000193	0.00281	0.002123	1.22E-06	1.05E-06	4172.67	0	657.6475	0
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.066292	0.080213	0.09546	0.965822	0.55617	232.1835	0.018687	0.017192	0.002145	0.001895	7532937	2663730	3858.155	3.3E+08
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.38908	0.470786	0.560275	3.476722	3.776015	1395.68	0.095822	0.088156	0.012892	0.011391	45281301	5669652	4038.064	2.3E+09
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.094059	0.113811	0.135445	1.138418	0.949343	311.0227	0.041333	0.038027	0.002873	0.002539	10090789	2708780	5838.961	4.66E+08
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.01997	0.024163	0.028756	0.343317	0.197056	73.131	0.009428	0.008674	0.000676	0.000597	2372655	851121.3	2072.345	1.1E+08
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.01102	0.013335	0.015869	0.189489	0.110633	42.56054	0.004352	0.004004	0.000393	0.000347	1380830	568089.1	1174.176	74739337
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.066257	0.08017	0.095409	1.124922	0.672656	189.7073	0.02695	0.024794	0.001752	0.001548	6154843	3860439	10803.03	3.1E+08
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.037436	0.045297	0.053907	1.214542	0.57951	205.9935	0.014393	0.013241	0.001903	0.001681	6683233	3191298	10883.24	3.21E+08
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.065561	0.079329	0.094408	0.64898	0.68379	121.3202	0.031485	0.028966	0.00112	0.00099	3936100	769844.9	962.2147	1.91E+08
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.489178	0.591906	0.704417	5.878929	3.667245	1675.821	0.141987	0.130628	0.015479	0.013678	54370164	14377793	14105.37	2.91E+09
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.331544	0.401168	0.477423	3.402665	3.240723	1090.712	0.132566	0.121961	0.010074	0.008902	35386938	3857582	7925.067	1.42E+09
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.046194	0.055894	0.066519	1.215172	0.705645	199.7444	0.016657	0.015325	0.001845	0.00163	6480488	5105535	14112.99	3.34E+08

Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.004118	0.004983	0.00593	0.062138	0.049624	22.92667	0.001675	0.001541	0.000212	0.000187	743830.7	181089.4	648.0844	47666894
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.431473	0.522082	0.621321	8.791646	4.656834	1530.932	0.142244	0.130865	0.014141	0.012495	49669402	26462978	42567.9	2.59E+09
Statewide	2029	Constructic	Aggregate	Aggregate	Diesel	0.030979	0.037485	0.04461	0.346374	0.326826	63.00432	0.014463	0.013306	0.000582	0.000514	2044106	963577.1	2557.265	75760884
Statewide	2029	Industrial -	Aggregate	Aggregate	Diesel	0.016627	0.020118	0.023942	0.551708	0.335017	96.9724	0.00393	0.003616	0.000896	0.000791	3146163	3028238	9591.878	1.9E+08
Statewide	2029	Industrial -	Aggregate	Aggregate	Diesel	0.141002	0.170612	0.203043	2.637894	1.427454	408.2929	0.054833	0.050446	0.003771	0.003332	13246614	14172131	17993.75	1.27E+09
Statewide	2029	Industrial -	Aggregate	Aggregate	Diesel	0.007418	0.008922	0.010663	0.036202	0.056203	0.000132	0.001932	0.00146	8.59E-07	7.4E-07	2944.009	0	1372.804	0
Statewide	2029	Industrial -	Aggregate	Aggregate	Diesel	0.005833	0.007016	0.008385	0.028402	0.045612	0.000107	0.001553	0.001174	6.75E-07	5.81E-07	2311.787	0	283.8881	0
Statewide	2029	Industrial -	Aggregate	Aggregate	Diesel	0.001452	0.001747	0.002087	0.007732	0.011545	2.72E-05	0.000396	0.000299	1.78E-07	1.53E-07	609.2556	0	114.0612	0
Statewide	2029	Industrial -	Aggregate	Aggregate	Diesel	0.064696	0.078282	0.093162	0.952758	0.602838	197.1938	0.017478	0.01608	0.001821	0.001609	6397735	3997800	4580.786	3.53E+08
Statewide	2029	Industrial -	Aggregate	Aggregate	Diesel	0.030582	0.037004	0.044038	0.449232	0.272903	115.6152	0.009449	0.008693	0.001068	0.000944	3751008	1092716	1377.898	1.83E+08
Statewide	2029	Light Comn	Aggregate	Aggregate	Diesel	0.02039	0.024297	0.029355	0.242841	0.184213	30.28492	0.003169	0.003115	0.000383	0.000254	1010693	912346.7	1305.02	33756828
Statewide	2029	Light Comn	Aggregate	Aggregate	Diesel	0.092954	0.111406	0.133701	0.821653	0.916653	142.2152	0.019249	0.02303	0.00162	0.001182	4702049	1836494	16019.19	60604297
Statewide	2029	Light Comn	Aggregate	Aggregate	Diesel	0.000434	0.00052	0.000623	0.004095	0.004686	0.736093	9.72E-05	0.000119	8.29E-06	5.96E-06	23715.3	18472.65	477.5416	701960.7
Statewide	2029	Light Comn	Aggregate	Aggregate	Diesel	0.053352	0.063914	0.076745	0.479204	0.503157	78.54302	0.010527	0.012405	0.000903	0.000654	2599705	958621.4	8341.53	35468992
Statewide	2029	Light Comn	Aggregate	Aggregate	Diesel	0.102719	0.122616	0.147843	1.134984	0.967088	157.2538	0.017923	0.018877	0.001934	0.001316	5232573	3597520	9502.588	1.65E+08
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.018874	0.022837	0.027178	0.307764	0.221141	105.4225	0.007015	0.006454	0.000974	0.00086	3420316	595998.1	1584.584	1.32E+08
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.084425	0.102154	0.121572	0.926308	0.881254	249.2932	0.039714	0.036537	0.002302	0.002035	8088042	2348579	4767.085	5.43E+08
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.195254	0.236258	0.281166	2.318257	1.93773	615.6714	0.089889	0.082698	0.005686	0.005025	19974779	4242225	8780.903	9E+08
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.229837	0.278103	0.330966	3.829261	1.86467	1109.269	0.059792	0.055009	0.010249	0.009054	35989016	11489178	17066.8	1.81E+09
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.140445	0.169939	0.202241	1.506603	1.304261	416.7212	0.055024	0.050622	0.003849	0.003401	13520060	3394087	5517.394	6.38E+08
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.002123	0.002554	0.003052	0.009364	0.016118	3.74E-05	0.000545	0.000412	2.31E-07	1.99E-07	791.8007	0	129.3253	0
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.002557	0.003076	0.003676	0.014983	0.019297	4.62E-05	0.000673	0.000509	3.33E-07	2.87E-07	1142.405	0	883.35	0
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.001022	0.001221	0.001471	0.011295	0.01025	1.331123	0.000188	0.000158	1.72E-05	1.11E-05	44251.89	31875.45	80.94842	1051890
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.000258	0.000311	0.000371	0.00106	0.001963	4.53E-06	6.6E-05	4.99E-05	2.69E-08	2.32E-08	92.2858	0	37.30137	0
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.00184	0.002213	0.002645	0.007553	0.013984	3.23E-05	0.00047	0.000355	1.92E-07	1.65E-07	657.5385	0	58.45	0
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.005477	0.006587	0.007873	0.032411	0.041319	9.9E-05	0.001442	0.001089	7.19E-07	6.19E-07	2463.139	0	565.8069	0
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.000487	0.000586	0.0007	0.002	0.003703	8.55E-06	0.000125	9.41E-05	5.08E-08	4.38E-08	174.1387	0	23.19	0
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.000821	0.000988	0.00118	0.003371	0.006241	1.44E-05	0.00021	0.000159	8.56E-08	7.38E-08	293.4809	0	57.19358	0
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.00175	0.002105	0.002516	0.011043	0.013184	3.18E-05	0.000464	0.00035	2.4E-07	2.07E-07	822.0954	0	511.02	0
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.01213	0.014589	0.017436	0.063765	0.091759	0.000217	0.003159	0.002387	1.47E-06	1.27E-06	5046.781	0	1545.8	0
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.000331	0.000398	0.000476	0.00136	0.002518	5.81E-06	8.47E-05	6.4E-05	3.46E-08	2.98E-08	118.4117	0	14.91078	0
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.027648	0.03325	0.039744	0.17689	0.209425	0.588882	0.00729	0.005515	1.14E-05	8.07E-06	32095.08	11504.8	4489.75	425677.6
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.093677	0.112673	0.134663	0.38457	0.712008	0.001643	0.023974	0.018114	9.77E-06	8.41E-06	33480.14	0	5937.177	0
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.008832	0.010623	0.012696	0.036258	0.06713	0.000155	0.002257	0.001706	9.21E-07	7.93E-07	3156.577	0	430.9496	0
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.010999	0.013229	0.015811	0.05061	0.083427	0.000195	0.002834	0.002141	1.23E-06	1.06E-06	4208.921	0	663.1714	0
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.064891	0.078518	0.093442	0.97512	0.533395	234.7636	0.017457	0.016061	0.002169	0.001916	7616645	2693330	3885.204	3.34E+08
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.384038	0.464686	0.553014	3.492781	3.649939	1411.189	0.092395	0.085003	0.013036	0.011518	45784481	5732655	4066.375	2.32E+09
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.090593	0.109618	0.130454	1.145392	0.905226	314.4789	0.038638	0.035547	0.002905	0.002567	10202921	2738881	5879.897	4.72E+08
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.019375	0.023444	0.0279	0.346594	0.187479	73.94366	0.008821	0.008116	0.000683	0.000604	2399021	860579.3	2086.874	1.11E+08
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.010862	0.013142	0.015641	0.191351	0.108939	43.03348	0.004175	0.003841	0.000398	0.000351	1396174	574401.9	1182.408	75569865
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.064429	0.077959	0.092778	1.134401	0.661604	191.8154	0.025684	0.02363	0.001771	0.001566	6223238	3903337	10878.77	3.14E+08
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.037267	0.045094	0.053665	1.2275	0.577362	208.2826	0.013894	0.012782	0.001925	0.0017	6757499	3226761	10959.54	3.24E+08
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.063385	0.076696	0.091274	0.644821	0.650594	122.6684	0.030038	0.027635	0.001132	0.001001	3979840	778399.7	968.9607	1.93E+08
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.483239	0.584719	0.695864	5.915463	3.465985	1694.443	0.135157	0.124345	0.015651	0.01383	54974343	14537564	14204.26	2.94E+09
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.325659	0.394047	0.468948	3.377958	3.051607	1102.832	0.128438	0.118163	0.010186	0.009001	35780168	3900449	7980.629	1.43E+09
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.044908	0.054339	0.064668	1.227034	0.700466	201.9641	0.015383	0.014152	0.001866	0.001648	6552502	5162269	14211.94	3.38E+08
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.003993	0.004831	0.005749	0.062139	0.048599	23.18144	0.001594	0.001466	0.000214	0.000189	752096.3	183101.7	652.628	48196583
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.425178	0.514465	0.612256	8.877647	4.596408	1547.944	0.134858	0.124069	0.014299	0.012634	50221345	26757043	42866.33	2.62E+09
Statewide	2030	Constructic	Aggregate	Aggregate	Diesel	0.030159	0.036492	0.043429	0.348631	0.323218	63.70444	0.014064	0.012939	0.000588	0.00052	2066820	974284.6	2575.193	76602763
Statewide	2030	Industrial -	Aggregate	Aggregate	Diesel	0.01664	0.020135	0.023962	0.557664	0.337104	98.04999	0.003809	0.003504	0.000906	0.0008	3181124	3061889	9659.126	1.93E+08
Statewide	2030	Industrial -	Aggregate	Aggregate	Diesel	0.137198	0.16601	0.197565	2.663035	1.383649	412.83	0.050221	0.046204	0.003813	0.003369	13393815	14329616	18119.9	1.28E+09
Statewide	2030	Industrial -	Aggregate	Aggregate	Diesel	0.007481	0.008998	0.010755	0.036529	0.056683	0.000133	0.001944	0.001469	8.67E-07	7.47E-07	2970.129	0	1384.997	0
Statewide	2030	Industrial -	Aggregate	Aggregate	Diesel	0.005888	0.007082	0.008464	0.028664	0.046042	0.000108	0.001568	0.001185	6.81E-07	5.86E-07	2333.309	0	286.4299	0
Statewide	2030	Industrial -	Aggregate	Aggregate	Diesel	0.00146	0.001756	0.002099	0.007772	0.011607	2.73E-05	0.000398	0.000301	1.79E-07	1.54E-07	612.4171	0	114.6332	0
Statewide	2030	Industrial -	Aggregate	Aggregate	Diesel	0.062809	0.075999	0.090445	0.960325	0.588962	199.3851	0.016035	0.014752	0.001842	0.001627	6468828	4042225	4612.901	3.56E+08

Statewide	2030	Industrial -	Aggregate	Aggregate	Diesel	0.030058	0.03637	0.043283	0.451277	0.261258	116.8999	0.008861	0.008152	0.00108	0.000954	3792690	1104859	1387.558	1.85E+08
Statewide	2030	Light Comn	Aggregate	Aggregate	Diesel	0.01979	0.023583	0.028491	0.243015	0.183139	30.43853	0.002789	0.002765	0.000385	0.000255	1015599	916931.1	1311.489	33926451
Statewide	2030	Light Comn	Aggregate	Aggregate	Diesel	0.091688	0.109903	0.131878	0.823273	0.915253	142.9328	0.018332	0.022163	0.001628	0.001188	4725348	1845776	16100.07	60910601
Statewide	2030	Light Comn	Aggregate	Aggregate	Diesel	0.00043	0.000516	0.000618	0.004109	0.004683	0.740032	9.37E-05	0.000116	8.33E-06	6.01E-06	23914.59	18585.8	480.2112	706260.4
Statewide	2030	Light Comn	Aggregate	Aggregate	Diesel	0.052491	0.06289	0.075505	0.480034	0.502141	78.94057	0.009954	0.011863	0.000908	0.000657	2612616	963516.1	8383.587	35650094
Statewide	2030	Light Comn	Aggregate	Aggregate	Diesel	0.099987	0.119365	0.143908	1.136107	0.962528	158.0482	0.016169	0.017251	0.001944	0.001323	5257991	3615686	9550.626	1.66E+08
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.018806	0.022756	0.027081	0.310829	0.193118	106.5811	0.006173	0.005679	0.000985	0.00087	3457906	602548.3	1595.56	1.33E+08
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.083127	0.100584	0.119703	0.930507	0.842377	252.0329	0.038629	0.035539	0.002328	0.002057	8176931	2374391	4800.105	5.49E+08
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.192661	0.23312	0.277432	2.317959	1.861576	622.4377	0.087114	0.080145	0.005749	0.00508	20194306	4288848	8841.725	9.1E+08
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.227363	0.275109	0.327402	3.865588	1.809196	1121.46	0.056824	0.052278	0.010362	0.009153	36384542	11615446	17185.01	1.83E+09
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.138435	0.167506	0.199347	1.520394	1.209725	421.301	0.052008	0.047847	0.003891	0.003439	13668648	3431389	5555.611	6.45E+08
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.002142	0.002577	0.00308	0.009446	0.016264	3.78E-05	0.00055	0.000416	2.33E-07	2.01E-07	798.8484	0	130.457	0
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.002589	0.003114	0.003721	0.015168	0.019535	4.67E-05	0.000681	0.000515	3.37E-07	2.91E-07	1156.483	0	894.24	0
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.001015	0.001213	0.001461	0.011412	0.010304	1.347542	0.000177	0.000148	1.75E-05	1.13E-05	44767.99	32309.8	82.05257	1066223
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.000262	0.000315	0.000376	0.001074	0.001988	4.59E-06	6.69E-05	5.05E-05	2.73E-08	2.35E-08	93.49802	0	37.79134	0
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.001866	0.002245	0.002683	0.007661	0.014185	3.27E-05	0.000477	0.00036	1.95E-07	1.68E-07	666.9881	0	59.29	0
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.005549	0.006674	0.007976	0.032837	0.04186	0.0001	0.001461	0.001104	7.28E-07	6.27E-07	2495.466	0	573.2335	0
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.000493	0.000593	0.000709	0.002024	0.003746	8.65E-06	0.000126	9.52E-05	5.14E-08	4.43E-08	176.1662	0	23.46	0
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.000831	0.001	0.001195	0.003412	0.006317	1.46E-05	0.000212	0.000161	8.67E-08	7.47E-08	297.0301	0	57.88524	0
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.001772	0.002131	0.002547	0.01118	0.013347	3.22E-05	0.000469	0.000355	2.43E-07	2.09E-07	832.2626	0	517.34	0
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.012274	0.014763	0.017644	0.06452	0.09285	0.000219	0.003197	0.002415	1.49E-06	1.28E-06	5106.58	0	1564.015	0
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.000334	0.000402	0.00048	0.001371	0.002539	5.86E-06	8.54E-05	6.45E-05	3.48E-08	3E-08	119.3885	0	15.03378	0
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.02798	0.03365	0.040222	0.179063	0.211982	0.596146	0.007375	0.005578	1.15E-05	8.17E-06	32491.12	11643.5	4545.121	430809.5
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.094623	0.113811	0.136023	0.388454	0.719198	0.00166	0.024196	0.018281	9.87E-06	8.5E-06	33818.26	0	5997.138	0
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.008946	0.01076	0.01286	0.036726	0.067997	0.000157	0.002287	0.001728	9.33E-07	8.04E-07	3197.347	0	436.5156	0
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.01108	0.013327	0.015928	0.05099	0.084046	0.000196	0.002855	0.002157	1.24E-06	1.07E-06	4240.41	0	668.3377	0
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.063333	0.076632	0.091199	0.983605	0.516148	237.3437	0.015956	0.014679	0.002192	0.001937	7700353	2722930	3912.115	3.38E+08
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.383553	0.4641	0.552317	3.474807	3.565088	1426.698	0.090482	0.083244	0.013179	0.011645	46287661	5795658	4094.541	2.35E+09
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.088876	0.10754	0.127982	1.155605	0.870309	317.9351	0.037114	0.034145	0.002937	0.002595	10315053	2768982	5920.625	4.77E+08
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.019011	0.023004	0.027376	0.349574	0.179686	74.75632	0.008391	0.007719	0.000691	0.00061	2425386	870037.2	2101.329	1.13E+08
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.010494	0.012697	0.015111	0.192904	0.103855	43.50643	0.003931	0.003617	0.000402	0.000355	1411518	580714.7	1190.598	76400392
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.062777	0.07596	0.090398	1.142417	0.647594	193.9234	0.024511	0.02255	0.001791	0.001583	6291633	3946236	10954.12	3.17E+08
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.036682	0.044385	0.052822	1.240029	0.569422	210.5717	0.013401	0.012329	0.001946	0.001719	6831765	3262223	11035.46	3.28E+08
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.062799	0.075987	0.090431	0.639613	0.632843	124.0165	0.029574	0.027209	0.001145	0.001012	4023579	786954.4	975.6722	1.95E+08
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.480469	0.581367	0.691875	5.957796	3.297201	1713.065	0.130824	0.120358	0.015824	0.013982	55578521	14697335	14302.64	2.98E+09
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.322399	0.390103	0.464254	3.39881	2.900554	1114.952	0.125911	0.115839	0.010299	0.0091	36173399	3943315	8035.907	1.45E+09
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.043721	0.052903	0.062959	1.238716	0.694382	204.1837	0.014306	0.013162	0.001886	0.001667	6624515	5219004	14310.37	3.41E+08
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.003887	0.004704	0.005598	0.062385	0.046524	23.43621	0.001488	0.001369	0.000217	0.000191	760362	185114	657.1485	48726273
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.420891	0.509279	0.606084	8.96616	4.538153	1564.956	0.127411	0.117218	0.014456	0.012773	50773287	27051108	43163.25	2.65E+09
Statewide	2031	Constructic	Aggregate	Aggregate	Diesel	0.029715	0.035955	0.042789	0.351414	0.320186	64.40456	0.013738	0.012639	0.000595	0.000526	2089535	984992.2	2593.031	77444642
Statewide	2031	Industrial -	Aggregate	Aggregate	Diesel	0.016649	0.020146	0.023975	0.563658	0.33862	99.12758	0.003706	0.00341	0.000916	0.000809	3216085	3095540	9726.03	1.95E+08
Statewide	2031	Industrial -	Aggregate	Aggregate	Diesel	0.133645	0.16171	0.192448	2.688726	1.336803	417.3671	0.046268	0.042567	0.003855	0.003406	13541016	14487101	18245.41	1.3E+09
Statewide	2031	Industrial -	Aggregate	Aggregate	Diesel	0.007541	0.00907	0.01084	0.036827	0.057135	0.000134	0.001956	0.001478	8.74E-07	7.53E-07	2994.162	0	1396.203	0
Statewide	2031	Industrial -	Aggregate	Aggregate	Diesel	0.005936	0.00714	0.008533	0.028894	0.046417	0.000108	0.001581	0.001194	6.86E-07	5.91E-07	2352.166	0	288.6852	0
Statewide	2031	Industrial -	Aggregate	Aggregate	Diesel	0.001467	0.001765	0.002109	0.007805	0.011664	2.75E-05	0.0004	0.000302	1.8E-07	1.55E-07	615.2121	0	115.1078	0
Statewide	2031	Industrial -	Aggregate	Aggregate	Diesel	0.06182	0.074802	0.089021	0.968763	0.579416	201.5763	0.015094	0.013886	0.001862	0.001645	6539922	4086650	4644.853	3.6E+08
Statewide	2031	Industrial -	Aggregate	Aggregate	Diesel	0.029616	0.035835	0.042647	0.455849	0.252443	118.1847	0.008496	0.007817	0.001092	0.000965	3834372	1117001	1397.169	1.87E+08
Statewide	2031	Light Comn	Aggregate	Aggregate	Diesel	0.019359	0.023071	0.027871	0.243493	0.18241	30.59648	0.002475	0.002476	0.000387	0.000257	1020740	921741.8	1318.159	34104447
Statewide	2031	Light Comn	Aggregate	Aggregate	Diesel	0.090851	0.10891	0.130672	0.825813	0.915184	143.6874	0.017582	0.021459	0.001636	0.001194	4749891	1855412	16185.08	61228589
Statewide	2031	Light Comn	Aggregate	Aggregate	Diesel	0.000427	0.000513	0.000614	0.004125	0.004685	0.743964	9.08E-05	0.000113	8.38E-06	6.04E-06	24022.95	18695.3	482.7611	710421.4
Statewide	2031	Light Comn	Aggregate	Aggregate	Diesel	0.051921	0.062213	0.074683	0.481413	0.501885	79.35571	0.009487	0.011427	0.000913	0.00066	2626133	968531.1	8427.893	35835653
Statewide	2031	Light Comn	Aggregate	Aggregate	Diesel	0.098059	0.117072	0.141131	1.138622	0.959697	158.8786	0.014718	0.015911	0.001954	0.001329	5285084	3634769	9600.324	1.67E+08
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.018622	0.022532	0.026815	0.313956	0.188356	107.7397	0.005707	0.00525	0.000996	0.000879	3495496	609098.4	1606.48	1.35E+08
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.08115	0.098192	0.116856	0.931492	0.803961	254.7727	0.03616	0.033268	0.002353	0.002079	8265820	2400202	4832.958	5.55E+08
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.189762	0.229612	0.273257	2.324806	1.790757	629.204	0.082987	0.076348	0.005812	0.005135	20413832	4335471	8902.239	9.2E+08

Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.225745	0.273151	0.325072	3.900663	1.767962	1133.651	0.054112	0.049783	0.010474	0.009253	36780068	11741714	17302.63	1.85E+09
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.134931	0.163267	0.194301	1.532603	1.123023	425.8809	0.049005	0.045085	0.003933	0.003476	13817236	3468690	5593.634	6.53E+08
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.002162	0.0026	0.003108	0.009528	0.016411	3.81E-05	0.000555	0.00042	2.35E-07	2.03E-07	805.9184	0	131.5886	0
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.00262	0.003151	0.003767	0.015352	0.019772	4.73E-05	0.000689	0.000521	3.42E-07	2.94E-07	1170.564	0	905.13	0
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.001012	0.001209	0.001456	0.011533	0.010361	1.363961	0.000168	0.000139	1.77E-05	1.14E-05	45360.59	32674.8	82.90387	1078268
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.000265	0.000319	0.000381	0.001087	0.002013	4.65E-06	6.77E-05	5.11E-05	2.76E-08	2.38E-08	94.6503	0	38.25709	0
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.00189	0.002273	0.002716	0.007757	0.014362	3.31E-05	0.000483	0.000365	1.97E-07	1.7E-07	675.3128	0	60.03	0
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.005621	0.006761	0.00808	0.033265	0.042408	0.000102	0.00148	0.001118	7.38E-07	6.35E-07	2528.019	0	580.7097	0
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.0005	0.000602	0.000719	0.002054	0.003802	8.78E-06	0.000128	9.66E-05	5.22E-08	4.49E-08	178.7945	0	23.81	0
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.000841	0.001011	0.001209	0.003452	0.006391	1.48E-05	0.000215	0.000162	8.77E-08	7.55E-08	300.5273	0	58.56678	0
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.001794	0.002157	0.002578	0.011316	0.01351	3.26E-05	0.000475	0.000359	2.46E-07	2.12E-07	842.4298	0	523.66	0
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.012416	0.014934	0.017848	0.065262	0.093927	0.000222	0.003234	0.002443	1.51E-06	1.3E-06	5165.516	0	1581.928	0
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.000338	0.000406	0.000485	0.001386	0.002566	5.92E-06	8.63E-05	6.52E-05	3.52E-08	3.03E-08	120.65	0	15.19263	0
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.028313	0.034051	0.040701	0.181233	0.214535	0.60341	0.007459	0.005641	1.16E-05	8.27E-06	32901.32	11811.4	4600.506	437021.8
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.095568	0.114947	0.13738	0.392332	0.726377	0.001677	0.024427	0.018456	9.97E-06	8.58E-06	34155.82	0	6056.998	0
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.009056	0.010893	0.013018	0.037178	0.068833	0.000159	0.002315	0.001749	9.44E-07	8.14E-07	3236.668	0	441.8839	0
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.011165	0.013429	0.01605	0.051382	0.084688	0.000197	0.002877	0.002174	1.25E-06	1.07E-06	4272.869	0	673.532	0
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.062704	0.075872	0.090294	0.993442	0.503926	239.9238	0.01486	0.013671	0.002216	0.001958	7784062	2752530	3938.89	3.41E+08
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.384234	0.464923	0.553297	3.502396	3.485668	1442.208	0.088259	0.081198	0.013322	0.011771	46790842	5858661	4122.564	2.37E+09
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.086785	0.10501	0.124971	1.165098	0.839439	321.3913	0.034713	0.031936	0.002969	0.002623	10427185	2799083	5961.147	4.82E+08
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.018675	0.022597	0.026892	0.352852	0.174663	75.56897	0.008026	0.007384	0.000698	0.000617	2451752	879495.1	2115.711	1.14E+08
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.010195	0.012336	0.01468	0.194593	0.099839	43.97938	0.003669	0.003376	0.000406	0.000359	1426862	587027.5	1198.747	77230920
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.061134	0.073972	0.088033	1.150237	0.635887	196.0315	0.023364	0.021495	0.001811	0.0016	6360027	3989134	11029.09	3.2E+08
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.036002	0.043562	0.051843	1.252364	0.564545	212.8607	0.01258	0.011573	0.001967	0.001737	6906032	3297686	11110.98	3.31E+08
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.061028	0.073844	0.087881	0.615919	0.599573	125.3647	0.027541	0.025338	0.001157	0.001023	4067318	795509.2	982.3499	1.97E+08
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.476334	0.576364	0.68592	5.994006	3.123945	1731.688	0.122899	0.113067	0.015996	0.014134	56182700	14857105	14400.53	3.01E+09
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.319119	0.386134	0.459531	3.410672	2.784958	1127.073	0.121399	0.111687	0.010411	0.009199	36566630	3986182	8090.906	1.46E+09
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.042868	0.05187	0.06173	1.250768	0.688623	206.4033	0.01351	0.012429	0.001907	0.001685	6696528	5275738	14408.32	3.45E+08
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.003845	0.004652	0.005536	0.062985	0.045428	23.69098	0.001443	0.001328	0.000219	0.000193	768627.7	187126.4	661.6461	49255963
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.418068	0.505862	0.602017	9.054776	4.496205	1581.969	0.122271	0.112489	0.014614	0.012912	51325229	27345173	43458.67	2.68E+09
Statewide	2032	Constructic	Aggregate	Aggregate	Diesel	0.028844	0.034901	0.041535	0.352019	0.314968	65.10469	0.013039	0.011996	0.000601	0.000531	2112250	995699.8	2610.778	78286522
Statewide	2032	Industrial -	Aggregate	Aggregate	Diesel	0.016637	0.02013	0.023957	0.569577	0.341227	100.2052	0.003657	0.003364	0.000926	0.000818	3251046	3129190	9792.597	1.97E+08
Statewide	2032	Industrial -	Aggregate	Aggregate	Diesel	0.131488	0.159101	0.189343	2.715156	1.307321	421.9042	0.043724	0.040226	0.003897	0.003444	13688216	14644586	18370.29	1.31E+09
Statewide	2032	Industrial -	Aggregate	Aggregate	Diesel	0.007599	0.00914	0.010924	0.037117	0.057577	0.000135	0.001969	0.001488	8.8E-07	7.58E-07	3017.576	0	1407.121	0
Statewide	2032	Industrial -	Aggregate	Aggregate	Diesel	0.005981	0.007194	0.008598	0.029109	0.046768	0.000109	0.001593	0.001203	6.91E-07	5.96E-07	2369.805	0	290.7897	0
Statewide	2032	Industrial -	Aggregate	Aggregate	Diesel	0.001479	0.001779	0.002126	0.007869	0.011758	2.77E-05	0.000403	0.000305	1.81E-07	1.56E-07	620.2056	0	116.0549	0
Statewide	2032	Industrial -	Aggregate	Aggregate	Diesel	0.060868	0.07365	0.08765	0.977201	0.570949	203.7676	0.014271	0.013129	0.001882	0.001663	6611016	4131075	4676.643	3.64E+08
Statewide	2032	Industrial -	Aggregate	Aggregate	Diesel	0.028616	0.034626	0.041207	0.460126	0.235096	119.4695	0.006986	0.006427	0.001104	0.000975	3876055	1129144	1406.732	1.89E+08
Statewide	2032	Light Comn	Aggregate	Aggregate	Diesel	0.019057	0.022711	0.027436	0.244285	0.181973	30.76624	0.002212	0.002234	0.000389	0.000258	1026322	926972.2	1325.589	34297973
Statewide	2032	Light Comn	Aggregate	Aggregate	Diesel	0.090328	0.10829	0.129917	0.829106	0.91614	144.4852	0.016956	0.020878	0.001645	0.001201	4776104	1865836	16274.69	61572595
Statewide	2032	Light Comn	Aggregate	Aggregate	Diesel	0.000426	0.000511	0.000613	0.004144	0.004692	0.748157	8.84E-05	0.000111	8.42E-06	6.06E-06	24117.8	18830.35	485.4609	715553.3
Statewide	2032	Light Comn	Aggregate	Aggregate	Diesel	0.051558	0.061783	0.07416	0.483252	0.502231	79.79623	0.009101	0.01107	0.000918	0.000664	2640569	973998.9	8474.44	36037957
Statewide	2032	Light Comn	Aggregate	Aggregate	Diesel	0.096724	0.115486	0.139209	1.142457	0.958274	159.7669	0.013505	0.014795	0.001965	0.001337	5314082	3654997	9654.501	1.68E+08
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.018368	0.022225	0.02645	0.316692	0.182346	108.8983	0.005257	0.004836	0.001006	0.000889	3533086	615648.5	1617.346	1.36E+08
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.079834	0.0966	0.114962	0.938995	0.775307	257.5125	0.033835	0.031128	0.002378	0.002102	8354709	2426013	4865.646	5.61E+08
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.187106	0.226398	0.269433	2.333881	1.73425	635.9704	0.078968	0.072651	0.005874	0.005191	20633359	4382094	8962.451	9.3E+08
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.224426	0.271555	0.323173	3.934393	1.729102	1145.842	0.051427	0.047313	0.010587	0.009352	37175594	11867983	17419.66	1.87E+09
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.133428	0.161448	0.192137	1.546335	1.074324	430.4607	0.046505	0.042785	0.003976	0.003513	13965824	3505992	5631.468	6.6E+08
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.00218	0.002623	0.003134	0.009613	0.016552	3.84E-05	0.00056	0.000423	2.37E-07	2.04E-07	812.9751	0	132.7579	0
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.002652	0.00319	0.003812	0.015537	0.020012	4.79E-05	0.000697	0.000527	3.46E-07	2.98E-07	1184.695	0	915.99	0
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.001012	0.001209	0.001457	0.011659	0.010427	1.380376	0.00016	0.000131	1.79E-05	1.15E-05	45858.45	33058.05	83.93043	1090916
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.000268	0.000322	0.000385	0.001099	0.002035	4.7E-06	6.84E-05	5.17E-05	2.79E-08	2.41E-08	95.70537	0	38.68354	0
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.001912	0.0023	0.002748	0.007849	0.014531	3.35E-05	0.000489	0.000369	1.99E-07	1.72E-07	683.3001	0	60.74	0
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.005692	0.006847	0.008183	0.033687	0.042945	0.000103	0.001498	0.001132	7.47E-07	6.43E-07	2560.083	0	588.0756	0
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.000507	0.00061	0.000729	0.002083	0.003857	8.9E-06	0.00013	9.8E-05	5.29E-08	4.56E-08	181.3476	0	24.15	0

Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.00085	0.001023	0.001222	0.003491	0.006464	1.49E-05	0.000217	0.000164	8.87E-08	7.64E-08	303.9317	0	59.23024	0
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.001815	0.002183	0.002609	0.011452	0.013672	3.3E-05	0.000481	0.000363	2.49E-07	2.14E-07	852.5327	0	529.94	0
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.012556	0.015102	0.018049	0.065999	0.094984	0.000224	0.00327	0.002471	1.52E-06	1.31E-06	5223.731	0	1599.806	0
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.000342	0.000411	0.000491	0.001403	0.002598	6E-06	8.74E-05	6.6E-05	3.57E-08	3.07E-08	122.1827	0	15.38563	0
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.028649	0.034455	0.041184	0.18341	0.217096	0.610672	0.007545	0.005705	1.18E-05	8.37E-06	33282.67	11957.4	4655.918	442423.8
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.096533	0.116108	0.138768	0.396293	0.733712	0.001694	0.024671	0.01864	1.01E-05	8.67E-06	34500.74	0	6118.163	0
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.009171	0.011031	0.013184	0.037649	0.069706	0.000161	0.002344	0.001771	9.56E-07	8.24E-07	3277.709	0	447.4871	0
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.011245	0.013526	0.016165	0.051766	0.085299	0.000199	0.002898	0.00219	1.26E-06	1.08E-06	4304.392	0	679.0513	0
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.062186	0.075245	0.089547	1.003373	0.500034	242.5038	0.013526	0.012444	0.00224	0.001979	7867770	2782130	3965.532	3.45E+08
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.382335	0.462625	0.550562	3.534392	3.358934	1457.717	0.082622	0.076012	0.013466	0.011898	47294022	5921664	4150.448	2.4E+09
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.084621	0.102391	0.121854	1.172708	0.804669	324.8474	0.031945	0.029389	0.003001	0.002651	10539317	2829184	6001.466	4.87E+08
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.018035	0.021822	0.02597	0.356049	0.167415	76.38163	0.007395	0.006803	0.000706	0.000623	2478118	888953.1	2130.021	1.15E+08
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.01003	0.012136	0.014443	0.196479	0.09802	44.45232	0.003417	0.003143	0.000411	0.000363	1442207	593340.3	1206.855	78061447
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.059497	0.071992	0.085676	1.15913	0.627135	198.1396	0.022059	0.020295	0.00183	0.001617	6428422	4032033	11103.69	3.24E+08
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.03497	0.042314	0.050357	1.264754	0.560816	215.1498	0.011492	0.010572	0.001988	0.001756	6980298	3333149	11186.14	3.35E+08
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.060022	0.072626	0.086431	0.591021	0.57683	126.7128	0.026221	0.024123	0.00117	0.001034	4111057	804063.9	988.9942	1.99E+08
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.474027	0.573572	0.682599	6.04495	3.003344	1750.31	0.115943	0.106668	0.016168	0.014286	56786879	15016876	14497.93	3.04E+09
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.316161	0.382555	0.455272	3.423251	2.661542	1139.193	0.114471	0.105314	0.010523	0.009298	36959861	4029049	8145.631	1.48E+09
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.041999	0.050819	0.060478	1.262872	0.6843	208.6229	0.012568	0.011562	0.001928	0.001703	6768541	5332472	14505.77	3.49E+08
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.003838	0.004644	0.005527	0.063657	0.045062	23.94575	0.001384	0.001273	0.000221	0.000195	776893.4	189138.7	666.1213	49785653
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.415491	0.502744	0.598307	9.142948	4.451387	1598.981	0.114986	0.105787	0.014771	0.013051	51877172	27639238	43752.61	2.71E+09
Statewide	2033	Constructic	Aggregate	Aggregate	Diesel	0.028013	0.033895	0.040338	0.350369	0.311637	65.80481	0.012453	0.011456	0.000608	0.000537	2134965	1006407	2628.436	79128401
Statewide	2033	Industrial -	Aggregate	Aggregate	Diesel	0.016442	0.019895	0.023676	0.575389	0.343236	101.2828	0.00341	0.003137	0.000936	0.000827	3286007	3162841	9858.831	1.99E+08
Statewide	2033	Industrial -	Aggregate	Aggregate	Diesel	0.129283	0.156432	0.186167	2.741635	1.283728	426.4413	0.040783	0.03752	0.003939	0.003481	13835417	14802072	18494.54	1.32E+09
Statewide	2033	Industrial -	Aggregate	Aggregate	Diesel	0.007653	0.009205	0.011001	0.037376	0.057981	0.000136	0.001981	0.001497	8.87E-07	7.64E-07	3038.69	0	1416.967	0
Statewide	2033	Industrial -	Aggregate	Aggregate	Diesel	0.006034	0.007258	0.008675	0.029361	0.047182	0.00011	0.001607	0.001214	6.98E-07	6.01E-07	2390.537	0	293.244	0
Statewide	2033	Industrial -	Aggregate	Aggregate	Diesel	0.001499	0.001803	0.002154	0.007979	0.011915	2.81E-05	0.000409	0.000309	1.83E-07	1.58E-07	628.7189	0	117.6965	0
Statewide	2033	Industrial -	Aggregate	Aggregate	Diesel	0.060348	0.073021	0.086901	0.986492	0.563561	205.9589	0.013128	0.012077	0.001902	0.001681	6682109	4175500	4708.274	3.68E+08
Statewide	2033	Industrial -	Aggregate	Aggregate	Diesel	0.028362	0.034318	0.040841	0.464341	0.229562	120.7542	0.006526	0.006004	0.001116	0.000986	3917737	1141287	1416.246	1.91E+08
Statewide	2033	Light Comn	Aggregate	Aggregate	Diesel	0.018888	0.02251	0.027192	0.245476	0.181827	30.95372	0.001995	0.002035	0.000392	0.00026	1032540	932447.2	1333.679	34500548
Statewide	2033	Light Comn	Aggregate	Aggregate	Diesel	0.090117	0.108044	0.129612	0.833265	0.918031	145.3515	0.01645	0.020415	0.001655	0.001208	4804475	1877016	16372.19	61941533
Statewide	2033	Light Comn	Aggregate	Aggregate	Diesel	0.000426	0.000511	0.000612	0.004166	0.004704	0.75266	8.65E-05	0.000109	8.48E-06	6.11E-06	24311.98	18910.65	488.3606	718604.7
Statewide	2033	Light Comn	Aggregate	Aggregate	Diesel	0.051393	0.06159	0.073923	0.485634	0.503121	80.27556	0.008787	0.010786	0.000923	0.000668	2656279	979809.7	8525.406	36252957
Statewide	2033	Light Comn	Aggregate	Aggregate	Diesel	0.095962	0.114581	0.138111	1.14785	0.95806	160.7214	0.012507	0.01388	0.001977	0.001345	5345437	3676915	9711.769	1.69E+08
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.01822	0.022046	0.026237	0.319892	0.178452	110.0569	0.004813	0.004428	0.001017	0.000898	3570676	622198.7	1628.158	1.38E+08
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.078521	0.09501	0.11307	0.944859	0.74943	260.2523	0.03226	0.029679	0.002404	0.002124	8443598	2451825	4898.173	5.67E+08
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.183602	0.222159	0.264387	2.345234	1.675402	642.7367	0.073919	0.068006	0.005937	0.005246	20852886	4428716	9022.365	9.39E+08
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.223356	0.27026	0.321632	3.97128	1.693955	1158.033	0.048316	0.044451	0.0107	0.009452	37571121	11994251	17536.11	1.89E+09
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.129744	0.15699	0.186831	1.558805	1.002688	435.0406	0.042859	0.03943	0.004018	0.003551	14114412	3543294	5669.114	6.67E+08
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.002202	0.002648	0.003165	0.009706	0.016712	3.88E-05	0.000566	0.000427	2.4E-07	2.06E-07	820.8608	0	134.0518	0
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.002684	0.003228	0.003858	0.015725	0.020254	4.85E-05	0.000706	0.000533	3.5E-07	3.01E-07	1199.037	0	927.04	0
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.001017	0.001215	0.001464	0.011791	0.010504	1.396794	0.000153	0.000126	1.81E-05	1.17E-05	46414.85	33466.85	84.95385	1104406
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.000271	0.000326	0.000389	0.001112	0.002059	4.75E-06	6.93E-05	5.23E-05	2.83E-08	2.43E-08	96.83591	0	39.1405	0
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.001932	0.002324	0.002777	0.007931	0.014685	3.39E-05	0.000494	0.000373	2.01E-07	1.74E-07	690.4998	0	61.38	0
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.005767	0.006936	0.00829	0.034126	0.043507	0.000104	0.001518	0.001147	7.57E-07	6.52E-07	2593.46	0	595.7408	0
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.000512	0.000616	0.000737	0.002104	0.003895	8.99E-06	0.000131	9.9E-05	5.34E-08	4.6E-08	183.1498	0	24.39	0
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.000861	0.001035	0.001237	0.003533	0.00654	1.51E-05	0.00022	0.000166	8.97E-08	7.73E-08	307.5446	0	59.93432	0
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.001837	0.00221	0.002641	0.011591	0.013839	3.34E-05	0.000487	0.000368	2.52E-07	2.17E-07	862.893	0	536.38	0
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.012696	0.01527	0.01825	0.066738	0.096042	0.000227	0.003307	0.002498	1.54E-06	1.33E-06	5282.12	0	1617.785	0
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.000346	0.000417	0.000498	0.001422	0.002632	6.08E-06	8.85E-05	6.69E-05	3.61E-08	3.11E-08	123.7802	0	15.5868	0
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.028986	0.03486	0.041668	0.185585	0.219654	0.617935	0.007631	0.00577	1.19E-05	8.48E-06	33725.65	12088.8	4711.259	447285.6
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.097498	0.117269	0.140155	0.400255	0.741046	0.00171	0.024919	0.018828	1.02E-05	8.76E-06	34845.58	0	6179.316	0
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.009285	0.011167	0.013347	0.038115	0.070568	0.000163	0.002373	0.001793	9.68E-07	8.34E-07	3318.27	0	453.0246	0
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.011342	0.013642	0.016305	0.052223	0.086034	0.000201	0.002923	0.002208	1.27E-06	1.09E-06	4342.066	0	685.4336	0
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.06104	0.073859	0.087898	1.013002	0.488914	245.0839	0.012119	0.01115	0.002264	0.002	7951479	2811731	3992.041	3.49E+08

Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.381052	0.461074	0.548716	3.549189	3.282252	1473.226	0.077833	0.071606	0.013609	0.012024	47797202	5984667	4178.194	2.42E+09
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.083055	0.100497	0.119599	1.182263	0.780631	328.3036	0.029901	0.027509	0.003033	0.00268	10651449	2859284	6041.586	4.92E+08
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.017371	0.021019	0.025014	0.359393	0.160274	77.19428	0.006672	0.006138	0.000713	0.00063	2504483	898411	2144.26	1.16E+08
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.009909	0.01199	0.014269	0.198211	0.096824	44.92527	0.003266	0.003005	0.000415	0.000367	1457551	599653.1	1214.923	78891974
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.057632	0.069735	0.082991	1.168347	0.620183	200.2477	0.020966	0.019289	0.00185	0.001634	6496816	4074931	11177.92	3.27E+08
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.03468	0.041963	0.049939	1.277698	0.562878	217.4388	0.010915	0.010042	0.002009	0.001775	7054564	3368612	11260.92	3.39E+08
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.059389	0.071861	0.085521	0.590321	0.56519	128.061	0.02522	0.023202	0.001182	0.001045	4154797	812618.7	995.6057	2.01E+08
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.470346	0.569118	0.677298	6.094311	2.868901	1768.932	0.107205	0.098629	0.016341	0.014438	57391057	15176647	14594.85	3.07E+09
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.310694	0.37594	0.4474	3.437167	2.536346	1151.313	0.106205	0.097709	0.010635	0.009397	37353092	4071915	8200.084	1.5E+09
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.041089	0.049717	0.059168	1.274751	0.684494	210.8426	0.011805	0.010861	0.001948	0.001721	6840555	5389207	14602.74	3.53E+08
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.003811	0.004611	0.005488	0.064168	0.044494	24.20052	0.001359	0.00125	0.000224	0.000198	785159.1	191151	670.5743	50315343
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.413558	0.500406	0.595524	9.234146	4.43153	1615.993	0.110042	0.101239	0.014928	0.01319	52429114	27933303	44045.1	2.74E+09
Statewide	2034	Constructic	Aggregate	Aggregate	Diesel	0.026972	0.032636	0.03884	0.351222	0.307913	66.50494	0.011919	0.010965	0.000614	0.000543	2157679	1017115	2646.007	79970280
Statewide	2034	Industrial -	Aggregate	Aggregate	Diesel	0.016162	0.019557	0.023274	0.581038	0.345437	102.3603	0.003176	0.002922	0.000946	0.000835	3320969	3196492	9924.738	2.01E+08
Statewide	2034	Industrial -	Aggregate	Aggregate	Diesel	0.127532	0.154314	0.183646	2.768538	1.267953	430.9783	0.037849	0.034821	0.003981	0.003518	13982618	14959557	18618.18	1.34E+09
Statewide	2034	Industrial -	Aggregate	Aggregate	Diesel	0.007697	0.009258	0.011065	0.037572	0.058319	0.000137	0.001992	0.001505	8.91E-07	7.68E-07	3055.265	0	1424.698	0
Statewide	2034	Industrial -	Aggregate	Aggregate	Diesel	0.006085	0.007318	0.008747	0.029605	0.047573	0.000111	0.00162	0.001224	7.03E-07	6.06E-07	2410.366	0	295.6728	0
Statewide	2034	Industrial -	Aggregate	Aggregate	Diesel	0.00155	0.001865	0.002229	0.008271	0.01233	2.9E-05	0.000423	0.00032	1.9E-07	1.64E-07	651.2499	0	122.0489	0
Statewide	2034	Industrial -	Aggregate	Aggregate	Diesel	0.059949	0.072538	0.086326	0.994995	0.556966	208.1502	0.012106	0.011137	0.001923	0.001699	6753203	4219925	4739.749	3.72E+08
Statewide	2034	Industrial -	Aggregate	Aggregate	Diesel	0.028323	0.03427	0.040785	0.468935	0.225507	122.039	0.006361	0.005852	0.001127	0.000996	3959420	1153429	1425.714	1.93E+08
Statewide	2034	Light Comn	Aggregate	Aggregate	Diesel	0.018821	0.022431	0.027096	0.246854	0.1819	31.14127	0.001825	0.001878	0.000394	0.000261	1038649	938071.9	1341.919	34708660
Statewide	2034	Light Comn	Aggregate	Aggregate	Diesel	0.090176	0.108118	0.129696	0.837932	0.920749	146.2441	0.016065	0.020072	0.001665	0.001216	4833801	1888536	16472.97	62321673
Statewide	2034	Light Comn	Aggregate	Aggregate	Diesel	0.000427	0.000512	0.000614	0.00419	0.00472	0.757287	8.51E-05	0.000108	8.53E-06	6.15E-06	24467.99	19031.1	491.3004	723181.8
Statewide	2034	Light Comn	Aggregate	Aggregate	Diesel	0.051398	0.061598	0.073929	0.488334	0.504471	80.7672	0.008547	0.010571	0.000929	0.000672	2672495	985843.1	8577.681	36476195
Statewide	2034	Light Comn	Aggregate	Aggregate	Diesel	0.095695	0.114265	0.137726	1.15419	0.959117	161.7088	0.011732	0.013174	0.001989	0.001353	5378132	3699425	9771.356	1.7E+08
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.016632	0.020125	0.02395	0.322589	0.172746	111.2155	0.003972	0.003654	0.001028	0.000908	3608266	628748.8	1638.917	1.39E+08
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.076942	0.0931	0.110797	0.940927	0.718822	262.9921	0.030901	0.028429	0.002429	0.002147	8532488	2477636	4930.541	5.73E+08
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.18005	0.217861	0.259272	2.359017	1.61664	649.5031	0.06945	0.063894	0.006	0.005301	21072412	4475339	9081.986	9.49E+08
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.222495	0.269219	0.320393	4.007683	1.660107	1170.225	0.044991	0.041391	0.010813	0.009551	37966647	12120519	17651.99	1.91E+09
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.125201	0.151493	0.18029	1.573117	0.923482	439.6204	0.03892	0.035806	0.004061	0.003588	14263001	3580595	5706.576	6.74E+08
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.002224	0.002675	0.003197	0.009808	0.016882	3.92E-05	0.000571	0.000432	2.42E-07	2.08E-07	829.3511	0	135.4576	0
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.002715	0.003265	0.003902	0.015905	0.020485	4.9E-05	0.000714	0.000539	3.54E-07	3.05E-07	1212.731	0	937.72	0
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.001026	0.001226	0.001476	0.011929	0.010593	1.413212	0.000149	0.000121	1.83E-05	1.18E-05	46964.2	33857.4	86.05157	1117294
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.000274	0.00033	0.000394	0.001126	0.002084	4.81E-06	7.01E-05	5.3E-05	2.86E-08	2.46E-08	98.0059	0	39.6134	0
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.001954	0.002351	0.002809	0.008023	0.014854	3.43E-05	0.0005	0.000377	2.04E-07	1.76E-07	698.487	0	62.09	0
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.00584	0.007025	0.008396	0.034559	0.044062	0.000106	0.001537	0.001162	7.66E-07	6.6E-07	2626.444	0	603.3145	0
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.000518	0.000623	0.000745	0.002128	0.00394	9.09E-06	0.000132	0.0001	5.41E-08	4.66E-08	185.2524	0	24.67	0
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.00087	0.001046	0.001251	0.003572	0.006613	1.53E-05	0.000222	0.000168	9.07E-08	7.82E-08	310.9453	0	60.59704	0
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.001859	0.002235	0.002672	0.011726	0.013999	3.38E-05	0.000492	0.000372	2.55E-07	2.19E-07	872.9153	0	542.61	0
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.012832	0.015434	0.018446	0.067463	0.097073	0.000229	0.003342	0.002525	1.56E-06	1.34E-06	5339.259	0	1635.51	0
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.000352	0.000423	0.000506	0.001445	0.002674	6.17E-06	8.99E-05	6.8E-05	3.67E-08	3.16E-08	125.7586	0	15.83592	0
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.029325	0.035268	0.042156	0.187766	0.222221	0.625198	0.007718	0.005835	1.21E-05	8.57E-06	34070.42	12260.35	4766.651	453632.9
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.098472	0.11844	0.141555	0.404254	0.748451	0.001728	0.025169	0.019017	1.03E-05	8.85E-06	35193.79	0	6241.065	0
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.009395	0.0113	0.013505	0.038567	0.071405	0.000165	0.002401	0.001814	9.8E-07	8.44E-07	3357.607	0	458.395	0
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.011451	0.013773	0.016461	0.052727	0.086856	0.000203	0.002951	0.00223	1.28E-06	1.1E-06	4383.811	0	692.24	0
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.060598	0.073324	0.087262	1.022261	0.481313	247.664	0.011373	0.010463	0.002288	0.002021	8035187	2841331	4018.421	3.52E+08
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.381761	0.46193	0.549735	3.581256	3.256491	1488.735	0.075785	0.069722	0.013753	0.012151	48300383	6047670	4205.804	2.45E+09
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.081233	0.098292	0.116976	1.189395	0.75497	331.7598	0.027558	0.025354	0.003065	0.002708	10763582	2889385	6081.509	4.98E+08
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.01677	0.020292	0.024149	0.362581	0.155048	78.00694	0.005996	0.005516	0.000721	0.000637	2530849	907868.9	2158.43	1.18E+08
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.009624	0.011645	0.013859	0.199579	0.093439	45.39822	0.00298	0.002741	0.000419	0.000371	1472895	605965.8	1222.951	79722502
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.056368	0.068206	0.081171	1.178637	0.616414	202.3558	0.019878	0.018288	0.001869	0.001652	6565211	4117830	11251.78	3.31E+08
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.034341	0.041552	0.049451	1.290664	0.561582	219.7279	0.010303	0.009478	0.00203	0.001793	7128830	3404074	11335.33	3.42E+08
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.057722	0.069844	0.08312	0.567767	0.534331	129.4091	0.023454	0.021578	0.001195	0.001056	4198536	821173.5	1002.185	2.04E+08
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.465708	0.563507	0.67062	6.147407	2.745583	1787.554	0.098769	0.090867	0.016513	0.01459	57995236	15336417	14691.3	3.11E+09
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.306349	0.370682	0.441143	3.454761	2.436056	1163.434	0.100537	0.092494	0.010747	0.009496	37746323	4114782	8254.271	1.51E+09

Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.040532	0.049044	0.058367	1.287114	0.685518	213.0622	0.010866	0.009996	0.001969	0.001739	6912568	5445941	14699.24	3.56E+08
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.003789	0.004584	0.005456	0.06468	0.043689	24.45528	0.00133	0.001224	0.000226	0.0002	793424.8	193163.3	675.0055	50845032
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.411209	0.497563	0.592142	9.320786	4.413955	1633.005	0.102908	0.094675	0.015086	0.013328	52981056	28227368	44336.15	2.77E+09
Statewide	2035	Constructic	Aggregate	Aggregate	Diesel	0.026264	0.03178	0.037821	0.352777	0.304959	67.20506	0.011413	0.0105	0.000621	0.000549	2180394	1027823	2663.492	80812159
Statewide	2035	Industrial -	Aggregate	Aggregate	Diesel	0.016065	0.019439	0.023134	0.58689	0.348024	103.4379	0.003025	0.002783	0.000956	0.000844	3355930	3230143	9990.321	2.03E+08
Statewide	2035	Industrial -	Aggregate	Aggregate	Diesel	0.125928	0.152373	0.181337	2.794603	1.255976	435.5154	0.034447	0.031691	0.004023	0.003555	14129818	15117042	18741.21	1.35E+09
Statewide	2035	Industrial -	Aggregate	Aggregate	Diesel	0.00775	0.009321	0.01114	0.037816	0.058716	0.000138	0.002006	0.001516	8.97E-07	7.73E-07	3075.436	0	1434.105	0
Statewide	2035	Industrial -	Aggregate	Aggregate	Diesel	0.006134	0.007377	0.008817	0.029843	0.047957	0.000112	0.001633	0.001234	7.09E-07	6.11E-07	2429.762	0	298.0402	0
Statewide	2035	Industrial -	Aggregate	Aggregate	Diesel	0.001586	0.001907	0.00228	0.008461	0.012613	2.97E-05	0.000433	0.000327	1.94E-07	1.67E-07	666.1799	0	124.8506	0
Statewide	2035	Industrial -	Aggregate	Aggregate	Diesel	0.059773	0.072325	0.086073	1.004444	0.552779	210.3415	0.011117	0.010228	0.001943	0.001717	6824297	4264349	4771.07	3.76E+08
Statewide	2035	Industrial -	Aggregate	Aggregate	Diesel	0.02744	0.033202	0.039513	0.473732	0.209657	123.3237	0.005776	0.005313	0.001139	0.001007	4001102	1165572	1435.135	1.95E+08
Statewide	2035	Light Comn	Aggregate	Aggregate	Diesel	0.018838	0.022451	0.02712	0.248296	0.182163	31.33948	0.001694	0.001759	0.000397	0.000263	1045251	943955.7	1350.519	34926361
Statewide	2035	Light Comn	Aggregate	Aggregate	Diesel	0.09047	0.108473	0.130118	0.84292	0.924056	147.1582	0.015784	0.019828	0.001676	0.001223	4863934	1900409	16575.87	62713497
Statewide	2035	Light Comn	Aggregate	Aggregate	Diesel	0.000428	0.000514	0.000616	0.004214	0.004737	0.761878	8.41E-05	0.000107	8.58E-06	6.2E-06	24650.2	19115.05	494.3001	726371.9
Statewide	2035	Light Comn	Aggregate	Aggregate	Diesel	0.051552	0.061784	0.074151	0.491237	0.506172	81.27286	0.008371	0.01042	0.000935	0.000676	2689130	991935	8631.277	36701593
Statewide	2035	Light Comn	Aggregate	Aggregate	Diesel	0.095823	0.11442	0.13791	1.160976	0.960948	162.7195	0.01114	0.012638	0.002001	0.001361	5411645	3722657	9832.623	1.71E+08
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.016456	0.019912	0.023697	0.32553	0.167958	112.3742	0.003793	0.00349	0.001038	0.000917	3645856	635299	1649.624	1.4E+08
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.075064	0.090828	0.108092	0.935567	0.679937	265.7318	0.029741	0.027362	0.002455	0.002169	8621377	2503447	4962.751	5.79E+08
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.175881	0.212817	0.253269	2.363361	1.551319	656.2694	0.064108	0.058979	0.006062	0.005356	21291939	4521962	9141.317	9.59E+08
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.221652	0.268199	0.319179	4.045335	1.626727	1182.416	0.041782	0.038439	0.010925	0.009651	38362173	12246787	17767.31	1.93E+09
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.121998	0.147618	0.175677	1.583471	0.858286	444.2003	0.035126	0.032316	0.004103	0.003626	14411589	3617897	5743.856	6.81E+08
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.002244	0.002699	0.003226	0.009899	0.017036	3.96E-05	0.000577	0.000436	2.44E-07	2.1E-07	837.0238	0	136.7227	0
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.002746	0.003303	0.003948	0.01609	0.020724	4.96E-05	0.000722	0.000546	3.58E-07	3.08E-07	1226.856	0	948.61	0
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.001036	0.001238	0.001491	0.012068	0.010682	1.429631	0.000146	0.000118	1.85E-05	1.2E-05	47531.63	34266.2	87.07212	1130785
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.000277	0.000333	0.000398	0.001137	0.002105	4.86E-06	7.08E-05	5.35E-05	2.89E-08	2.49E-08	98.99264	0	40.01223	0
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.00198	0.002382	0.002847	0.008129	0.015051	3.47E-05	0.000506	0.000382	2.06E-07	1.78E-07	707.7116	0	62.91	0
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.005913	0.007112	0.008499	0.034987	0.044607	0.000107	0.001556	0.001176	7.76E-07	6.68E-07	2658.948	0	610.7811	0
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.000525	0.000632	0.000755	0.002156	0.003991	9.21E-06	0.000134	0.000101	5.48E-08	4.72E-08	187.6553	0	24.99	0
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.000879	0.001057	0.001264	0.003609	0.006682	1.54E-05	0.000225	0.00017	9.17E-08	7.9E-08	314.1874	0	61.22886	0
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.00188	0.002262	0.002703	0.011863	0.014162	3.42E-05	0.000498	0.000376	2.58E-07	2.22E-07	883.0825	0	548.93	0
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.01297	0.0156	0.018645	0.068196	0.098118	0.000232	0.003378	0.002552	1.57E-06	1.36E-06	5397.123	0	1653.42	0
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.00036	0.000433	0.000518	0.001478	0.002737	6.32E-06	9.2E-05	6.95E-05	3.76E-08	3.23E-08	128.699	0	16.20619	0
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.029664	0.035676	0.042644	0.189944	0.224783	0.632462	0.007806	0.005901	1.22E-05	8.67E-06	34495.12	12395.4	4821.893	458629.8
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.099459	0.119627	0.142974	0.408305	0.755951	0.001745	0.025422	0.019208	1.04E-05	8.93E-06	35546.46	0	6303.607	0
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.00951	0.011438	0.01367	0.03904	0.07228	0.000167	0.002431	0.001837	9.92E-07	8.54E-07	3398.753	0	464.0124	0
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.011565	0.013911	0.016625	0.053257	0.087725	0.000205	0.00298	0.002252	1.29E-06	1.11E-06	4427.793	0	699.2637	0
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.06023	0.072878	0.086731	1.031815	0.470856	250.2441	0.010602	0.009754	0.002312	0.002042	8118895	2870931	4044.673	3.56E+08
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.379736	0.459481	0.54682	3.604812	3.193418	1504.245	0.072648	0.066836	0.013896	0.012277	48803563	6110673	4233.28	2.48E+09
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.079762	0.096512	0.114858	1.199432	0.727395	335.216	0.025937	0.023862	0.003097	0.002736	10875714	2919486	6121.239	5.03E+08
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.016393	0.019836	0.023606	0.365963	0.150651	78.81959	0.005558	0.005113	0.000728	0.000643	2557215	917326.9	2172.53	1.19E+08
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.009533	0.011535	0.013727	0.201555	0.091241	45.87116	0.002837	0.00261	0.000424	0.000374	1488239	612278.6	1230.941	80553029
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.055461	0.067108	0.079864	1.189362	0.610378	204.4639	0.018644	0.017152	0.001889	0.001669	6633605	4160728	11325.29	3.34E+08
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.034179	0.041356	0.049218	1.303845	0.560285	222.017	0.00972	0.008942	0.002052	0.001812	7203096	3439537	11409.38	3.46E+08
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.055948	0.067697	0.080565	0.545708	0.504207	130.7572	0.02167	0.019937	0.001207	0.001067	4242275	829728.2	1008.732	2.06E+08
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.46037	0.557048	0.662933	6.199466	2.609742	1806.177	0.090021	0.082819	0.016685	0.014742	58599415	15496188	14787.27	3.14E+09
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.300802	0.363971	0.433155	3.46377	2.322477	1175.554	0.096485	0.088766	0.01086	0.009595	38139554	4157649	8308.195	1.53E+09
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.04009	0.048508	0.057729	1.299675	0.685459	215.2818	0.010005	0.009205	0.001989	0.001757	6984581	5502675	14795.27	3.6E+08
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.003678	0.004451	0.005297	0.06496	0.041611	24.71005	0.001239	0.00114	0.000228	0.000202	801690.4	195175.7	679.4153	51374722
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.408964	0.494847	0.588909	9.410797	4.386252	1650.017	0.096998	0.089238	0.015243	0.013467	53532999	28521433	44625.79	2.79E+09
Statewide	2036	Constructic	Aggregate	Aggregate	Diesel	0.025605	0.030982	0.036871	0.352085	0.300198	67.90518	0.010778	0.009916	0.000627	0.000554	2203109	1038530	2680.893	81654038
Statewide	2036	Industrial -	Aggregate	Aggregate	Diesel	0.016069	0.019443	0.023139	0.592825	0.350846	104.5155	0.002922	0.002688	0.000966	0.000853	3390891	3263793	10055.59	2.05E+08
Statewide	2036	Industrial -	Aggregate	Aggregate	Diesel	0.12492	0.151153	0.179884	2.821946	1.244786	440.0525	0.031714	0.029177	0.004065	0.003592	14277019	15274527	18863.64	1.37E+09
Statewide	2036	Industrial -	Aggregate	Aggregate	Diesel	0.007857	0.00945	0.011294	0.038339	0.059526	0.00014	0.002034	0.001537	9.1E-07	7.84E-07	3117.964	0	1453.936	0
Statewide	2036	Industrial -	Aggregate	Aggregate	Diesel	0.006229	0.007492	0.008955	0.030306	0.048705	0.000114	0.001659	0.001253	7.2E-07	6.2E-07	2467.57	0	302.6493	0
Statewide	2036	Industrial -	Aggregate	Aggregate	Diesel	0.001617	0.001945	0.002324	0.008604	0.012853	3.03E-05	0.000441	0.000333	1.98E-07	1.7E-07	678.0459	0	126.8944	0

Statewide	2036	Industrial -	Aggregate	Aggregate	Diesel	0.059427	0.071907	0.085575	1.01389	0.546223	212.5327	0.010278	0.009456	0.001963	0.001735	6895390	4308774	4802.238	3.8E+08
Statewide	2036	Industrial -	Aggregate	Aggregate	Diesel	0.027394	0.033147	0.039448	0.478451	0.206356	124.6085	0.005675	0.005221	0.001151	0.001017	4042784	1177714	1444.511	1.97E+08
Statewide	2036	Light Comn	Aggregate	Aggregate	Diesel	0.018881	0.022503	0.027183	0.249597	0.182477	31.5357	0.001589	0.001663	0.000399	0.000265	1051731	949949	1359.109	35148113
Statewide	2036	Light Comn	Aggregate	Aggregate	Diesel	0.090908	0.108999	0.130748	0.848058	0.927804	148.0866	0.015578	0.01966	0.001686	0.001231	4894670	1912414	16680.16	63109657
Statewide	2036	Light Comn	Aggregate	Aggregate	Diesel	0.000431	0.000517	0.000619	0.00424	0.004758	0.766719	8.35E-05	0.000107	8.63E-06	6.24E-06	24835.33	19220.9	497.4	730394.2
Statewide	2036	Light Comn	Aggregate	Aggregate	Diesel	0.051793	0.062073	0.074496	0.494212	0.508106	81.78402	0.008238	0.010309	0.00094	0.00068	2706036	998202	8685.073	36933474
Statewide	2036	Light Comn	Aggregate	Aggregate	Diesel	0.09618	0.114848	0.138424	1.167853	0.963376	163.7489	0.010675	0.012221	0.002014	0.00137	5445816	3746181	9895.051	1.72E+08
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.016157	0.01955	0.023266	0.327949	0.161613	113.5328	0.003577	0.003291	0.001049	0.000927	3683446	641849.1	1660.279	1.42E+08
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.073563	0.089011	0.105931	0.925042	0.65229	268.4716	0.028489	0.02621	0.00248	0.002191	8710266	2529259	4994.807	5.85E+08
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.173014	0.209347	0.249141	2.368554	1.489715	663.0358	0.060945	0.05607	0.006125	0.005412	21511466	4568585	9200.363	9.69E+08
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.220821	0.267193	0.317982	4.081347	1.590076	1194.607	0.038814	0.035709	0.011038	0.00975	38757699	12373056	17882.07	1.95E+09
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.119854	0.145023	0.17259	1.593691	0.801488	448.7801	0.033086	0.030439	0.004146	0.003663	14560177	3655199	5780.957	6.88E+08
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.002266	0.002725	0.003257	0.009996	0.0172	4E-05	0.000582	0.00044	2.47E-07	2.12E-07	845.1609	0	138.067	0
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.002779	0.003342	0.003994	0.016279	0.020968	5.02E-05	0.000731	0.000552	3.62E-07	3.12E-07	1241.27	0	959.65	0
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.001046	0.00125	0.001505	0.012202	0.010766	1.44605	0.000143	0.000115	1.87E-05	1.21E-05	48043.83	34675	88.00354	1144275
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.00028	0.000337	0.000403	0.001151	0.002131	4.92E-06	7.17E-05	5.42E-05	2.92E-08	2.52E-08	100.2189	0	40.50787	0
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.002005	0.002412	0.002882	0.008231	0.01524	3.52E-05	0.000512	0.000387	2.09E-07	1.8E-07	716.5989	0	63.7	0
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.005985	0.007199	0.008604	0.035416	0.045156	0.000108	0.001576	0.00119	7.85E-07	6.77E-07	2691.592	0	618.2787	0
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.000531	0.000638	0.000763	0.002179	0.004034	9.31E-06	0.000136	0.000102	5.53E-08	4.77E-08	189.6828	0	25.26	0
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.00089	0.00107	0.001279	0.003652	0.006762	1.56E-05	0.000227	0.000172	9.28E-08	7.99E-08	317.9535	0	61.9628	0
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.001901	0.002287	0.002733	0.011994	0.01432	3.46E-05	0.000504	0.00038	2.61E-07	2.24E-07	892.8798	0	555.02	0
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.013115	0.015774	0.018853	0.068959	0.099212	0.000234	0.003416	0.002581	1.59E-06	1.37E-06	5457.43	0	1671.976	0
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.000368	0.000443	0.000529	0.001511	0.002798	6.46E-06	9.41E-05	7.11E-05	3.84E-08	3.31E-08	131.5664	0	16.56726	0
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.030005	0.036086	0.043133	0.192127	0.227353	0.639725	0.007894	0.005967	1.23E-05	8.78E-06	34894.61	12559.65	4877.334	464707
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.100455	0.120825	0.144406	0.412394	0.763521	0.001762	0.025676	0.0194	1.05E-05	9.02E-06	35902.43	0	6366.731	0
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.009625	0.011577	0.013836	0.039514	0.073158	0.000169	0.00246	0.001859	1E-06	8.65E-07	3440.029	0	469.6476	0
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.011686	0.014056	0.016799	0.053813	0.088642	0.000207	0.003012	0.002275	1.31E-06	1.12E-06	4474.063	0	706.5831	0
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.059968	0.072561	0.086353	1.039797	0.462925	252.8242	0.010086	0.009279	0.002336	0.002064	8202604	2900531	4070.798	3.6E+08
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.375886	0.454822	0.541276	3.631422	3.134204	1519.754	0.067452	0.062056	0.01404	0.012404	49306743	6173676	4260.623	2.5E+09
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.078192	0.094612	0.112597	1.208069	0.704014	338.6722	0.024044	0.022121	0.003129	0.002764	10987846	2949587	6160.777	5.08E+08
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.01594	0.019288	0.022954	0.369477	0.142868	79.63225	0.00504	0.004637	0.000736	0.00065	2583581	926784.8	2186.563	1.2E+08
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.009494	0.011488	0.013672	0.203364	0.090351	46.34411	0.0027	0.002484	0.000428	0.000378	1503584	618591.4	1238.892	81383557
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.0545	0.065945	0.07848	1.199472	0.603652	206.572	0.01753	0.016128	0.001908	0.001686	6702000	4203626	11398.44	3.38E+08
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.033745	0.040831	0.048593	1.316755	0.555978	224.306	0.009076	0.00835	0.002073	0.001831	7277363	3475000	11483.08	3.49E+08
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.055136	0.066715	0.079396	0.535878	0.486882	132.1054	0.020962	0.019285	0.00122	0.001078	4286014	838283	1015.247	2.08E+08
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.455764	0.551474	0.6563	6.242345	2.478085	1824.799	0.083138	0.076487	0.016857	0.014894	59203593	15655959	14882.79	3.17E+09
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.292134	0.353482	0.420672	3.43601	2.198949	1187.674	0.091512	0.084191	0.010972	0.009694	38532785	4200515	8361.86	1.54E+09
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.039685	0.048019	0.057147	1.31222	0.684746	217.5014	0.009017	0.008295	0.00201	0.001775	7056594	5559410	14890.83	3.64E+08
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.003546	0.004291	0.005106	0.064039	0.040136	24.96482	0.001129	0.001039	0.000231	0.000204	809956.1	197188	683.8038	51904412
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.40704	0.492519	0.586138	9.498645	4.365597	1667.03	0.091073	0.083787	0.0154	0.013606	54084941	28815498	44914.04	2.82E+09
Statewide	2037	Constructic	Aggregate	Aggregate	Diesel	0.024893	0.03012	0.035846	0.351423	0.295531	68.60531	0.01014	0.009329	0.000634	0.00056	2225824	1049238	2698.209	82495918
Statewide	2037	Industrial -	Aggregate	Aggregate	Diesel	0.016126	0.019513	0.023222	0.598842	0.352787	105.5931	0.002824	0.002598	0.000976	0.000862	3425852	3297444	10120.54	2.07E+08
Statewide	2037	Industrial -	Aggregate	Aggregate	Diesel	0.123756	0.149745	0.178209	2.848969	1.228217	444.5896	0.029163	0.02683	0.004107	0.003629	14424219	15432013	18985.48	1.38E+09
Statewide	2037	Industrial -	Aggregate	Aggregate	Diesel	0.007821	0.009407	0.011243	0.038141	0.05926	0.000139	0.002025	0.00153	9.05E-07	7.8E-07	3102.637	0	1446.791	0
Statewide	2037	Industrial -	Aggregate	Aggregate	Diesel	0.006221	0.007482	0.008942	0.030264	0.048637	0.000114	0.001656	0.001251	7.19E-07	6.19E-07	2464.113	0	302.219	0
Statewide	2037	Industrial -	Aggregate	Aggregate	Diesel	0.001607	0.001933	0.00231	0.008545	0.012774	3.01E-05	0.000438	0.000331	1.97E-07	1.69E-07	673.6094	0	126.004	0
Statewide	2037	Industrial -	Aggregate	Aggregate	Diesel	0.059151	0.071573	0.085178	1.023737	0.540569	214.724	0.009513	0.008752	0.001983	0.001753	6966484	4353199	4833.257	3.84E+08
Statewide	2037	Industrial -	Aggregate	Aggregate	Diesel	0.027337	0.033078	0.039366	0.48198	0.20565	125.8932	0.005343	0.004915	0.001163	0.001028	4084467	1189857	1453.841	1.99E+08
Statewide	2037	Light Comn	Aggregate	Aggregate	Diesel	0.018875	0.022496	0.027174	0.250305	0.182823	31.73944	0.001507	0.001589	0.000402	0.000266	1058551	956029.9	1367.889	35373106
Statewide	2037	Light Comn	Aggregate	Aggregate	Diesel	0.091312	0.109486	0.13133	0.852441	0.931839	149.0354	0.015436	0.019554	0.001697	0.001239	4925861	1924641	16787.26	63513165
Statewide	2037	Light Comn	Aggregate	Aggregate	Diesel	0.000433	0.000519	0.000622	0.004264	0.004779	0.77147	8.3E-05	0.000106	8.69E-06	6.28E-06	24983.43	19341.35	500.5096	734971.3
Statewide	2037	Light Comn	Aggregate	Aggregate	Diesel	0.052001	0.062324	0.074796	0.496636	0.51017	82.30488	0.008144	0.010237	0.000946	0.000685	2723197	1004619	8740.329	37170892
Statewide	2037	Light Comn	Aggregate	Aggregate	Diesel	0.096306	0.115	0.138605	1.172028	0.965888	164.7995	0.010316	0.011903	0.002027	0.001378	5480411	3770165	9958.308	1.73E+08
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.016137	0.019526	0.023237	0.331187	0.160112	114.6914	0.003467	0.00319	0.00106	0.000936	3721036	648399.2	1670.884	1.43E+08
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.072995	0.088323	0.105112	0.927307	0.633236	271.2114	0.027833	0.025607	0.002505	0.002214	8799155	2555070	5026.71	5.91E+08

Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.170496	0.2063	0.245514	2.373267	1.43484	669.8021	0.057946	0.053311	0.006188	0.005467	21730993	4615208	9259.128	9.79E+08
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.220573	0.266893	0.317625	4.119999	1.554514	1206.798	0.03703	0.034067	0.011151	0.00985	39153226	12499324	17996.29	1.97E+09
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.117774	0.142506	0.169594	1.607671	0.748952	453.36	0.03197	0.029413	0.004188	0.0037	14708765	3692500	5817.882	6.95E+08
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.002288	0.002752	0.003289	0.010096	0.017369	4.03E-05	0.000588	0.000444	2.49E-07	2.15E-07	853.5684	0	139.4537	0
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.00281	0.00338	0.004039	0.016462	0.021204	5.07E-05	0.000739	0.000558	3.66E-07	3.15E-07	1255.235	0	970.4999	0
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.001058	0.001264	0.001522	0.012342	0.010866	1.462467	0.000142	0.000114	1.89E-05	1.22E-05	48600.31	35050.95	88.99376	1156681
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.000284	0.000341	0.000408	0.001164	0.002155	4.97E-06	7.25E-05	5.48E-05	2.96E-08	2.55E-08	101.3264	0	40.95552	0
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.002026	0.002437	0.002913	0.008318	0.0154	3.55E-05	0.000518	0.000391	2.11E-07	1.82E-07	724.136	0	64.37	0
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.006061	0.00729	0.008713	0.035859	0.045726	0.00011	0.001595	0.001205	7.95E-07	6.85E-07	2725.39	0	626.0375	0
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.000537	0.000646	0.000772	0.002205	0.004082	9.42E-06	0.000137	0.000104	5.6E-08	4.82E-08	191.9356	0	25.56	0
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.000901	0.001084	0.001296	0.0037	0.00685	1.58E-05	0.00023	0.000174	9.4E-08	8.1E-08	322.118	0	62.77439	0
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.001923	0.002313	0.002764	0.012132	0.014485	3.5E-05	0.000509	0.000385	2.64E-07	2.27E-07	903.1757	0	561.42	0
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.013261	0.01595	0.019062	0.069727	0.100315	0.000237	0.003454	0.00261	1.61E-06	1.39E-06	5518.151	0	1690.601	0
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.000376	0.000452	0.000541	0.001544	0.002859	6.6E-06	9.62E-05	7.27E-05	3.92E-08	3.38E-08	134.454	0	16.93088	0
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.030346	0.036496	0.043623	0.194312	0.229926	0.646988	0.007982	0.006034	1.25E-05	8.88E-06	35301.45	12698.35	4932.785	469838.9
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.101452	0.122024	0.145838	0.416486	0.771097	0.00178	0.025931	0.019592	1.06E-05	9.11E-06	36258.64	0	6429.9	0
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.009735	0.011709	0.013994	0.039965	0.073993	0.000171	0.002488	0.00188	1.02E-06	8.75E-07	3479.324	0	475.0123	0
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.011812	0.014207	0.01698	0.054391	0.089597	0.000209	0.003044	0.0023	1.32E-06	1.14E-06	4522.144	0	714.0794	0
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.060154	0.072786	0.086622	1.049909	0.462148	255.4043	0.009808	0.009024	0.00236	0.002085	8286312	2930132	4096.799	3.63E+08
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.37469	0.453375	0.539554	3.656769	3.083939	1535.263	0.063756	0.058655	0.014183	0.012531	49809924	6236679	4287.837	2.53E+09
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.077203	0.093416	0.111172	1.214678	0.685221	342.1284	0.022807	0.020982	0.003161	0.002792	11099978	2979688	6200.128	5.13E+08
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.015611	0.01889	0.022481	0.372866	0.138174	80.4449	0.004629	0.004258	0.000743	0.000657	2609946	936242.7	2200.529	1.21E+08
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.009419	0.011397	0.013563	0.205304	0.088613	46.81706	0.002592	0.002385	0.000433	0.000382	1518928	624904.2	1246.805	82214084
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.053582	0.064834	0.077158	1.209789	0.598054	208.6801	0.016342	0.015035	0.001928	0.001703	6770395	4246525	11471.25	3.41E+08
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.033601	0.040657	0.048386	1.329878	0.556678	226.5951	0.008697	0.008002	0.002094	0.001849	7351629	3510462	11556.42	3.53E+08
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.054255	0.065649	0.078128	0.521928	0.46718	133.4535	0.020314	0.018689	0.001232	0.001089	4329753	846837.8	1021.732	2.1E+08
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.45213	0.547077	0.651067	6.296043	2.378971	1843.421	0.077974	0.071736	0.01703	0.015046	59807772	15815729	14977.85	3.2E+09
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.286806	0.347036	0.413001	3.394901	2.100355	1199.795	0.087488	0.080489	0.011084	0.009793	38926016	4243382	8415.269	1.56E+09
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.0392	0.047432	0.056448	1.324774	0.682496	219.7211	0.008172	0.007518	0.00203	0.001793	7128608	5616144	14985.94	3.67E+08
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.00354	0.004284	0.005098	0.064675	0.040128	25.21959	0.001104	0.001015	0.000233	0.000206	818221.8	199200.3	688.1714	52434102
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.405498	0.490652	0.583917	9.58756	4.342859	1684.042	0.086718	0.07978	0.015558	0.013745	54636883	29109563	45200.92	2.85E+09
Statewide	2038	Constructic	Aggregate	Aggregate	Diesel	0.024519	0.029668	0.035307	0.35419	0.294243	69.30543	0.009768	0.008987	0.00064	0.000566	2248538	1059945	2715.443	83337797
Statewide	2038	Industrial -	Aggregate	Aggregate	Diesel	0.016144	0.019535	0.023248	0.604779	0.354992	106.6707	0.002699	0.002483	0.000986	0.000871	3460813	3331095	10185.18	2.09E+08
Statewide	2038	Industrial -	Aggregate	Aggregate	Diesel	0.122965	0.148788	0.17707	2.876685	1.211777	449.1267	0.027271	0.02509	0.004149	0.003666	14571420	15589498	19106.75	1.4E+09
Statewide	2038	Industrial -	Aggregate	Aggregate	Diesel	0.007929	0.009537	0.011398	0.038686	0.060076	0.000141	0.002053	0.001551	9.18E-07	7.91E-07	3146.408	0	1467.201	0
Statewide	2038	Industrial -	Aggregate	Aggregate	Diesel	0.006316	0.007597	0.009079	0.030723	0.049381	0.000115	0.001682	0.001271	7.3E-07	6.29E-07	2501.666	0	306.7672	0
Statewide	2038	Industrial -	Aggregate	Aggregate	Diesel	0.00163	0.00196	0.002343	0.008666	0.012954	3.05E-05	0.000444	0.000336	1.99E-07	1.72E-07	683.16	0	127.8019	0
Statewide	2038	Industrial -	Aggregate	Aggregate	Diesel	0.059207	0.071641	0.085259	1.033728	0.537176	216.9153	0.009037	0.008314	0.002004	0.00177	7037578	4397624	4864.128	3.88E+08
Statewide	2038	Industrial -	Aggregate	Aggregate	Diesel	0.0271	0.032791	0.039024	0.485958	0.198879	127.178	0.00508	0.004674	0.001175	0.001038	4126149	1202000	1463.127	2.01E+08
Statewide	2038	Light Comn	Aggregate	Aggregate	Diesel	0.018955	0.022591	0.027289	0.251629	0.183391	31.93755	0.00145	0.001538	0.000404	0.000268	1065053	962048.8	1376.449	35595804
Statewide	2038	Light Comn	Aggregate	Aggregate	Diesel	0.091823	0.110098	0.132064	0.857463	0.936237	149.9679	0.015358	0.01951	0.001708	0.001246	4956682	1936730	16892.24	63912095
Statewide	2038	Light Comn	Aggregate	Aggregate	Diesel	0.000436	0.000523	0.000626	0.004292	0.004805	0.776508	8.3E-05	0.000107	8.74E-06	6.31E-06	25112.78	19443.55	503.8594	738854.9
Statewide	2038	Light Comn	Aggregate	Aggregate	Diesel	0.052291	0.062672	0.075213	0.499554	0.512535	82.82537	0.008092	0.010205	0.000952	0.000689	2740394	1010864	8795.724	37401962
Statewide	2038	Light Comn	Aggregate	Aggregate	Diesel	0.096743	0.115522	0.139233	1.178344	0.969317	165.8303	0.010076	0.011696	0.00204	0.001387	5514658	3793901	10020.59	1.75E+08
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.016151	0.019542	0.023257	0.334404	0.159837	115.85	0.003411	0.003138	0.001071	0.000946	3758626	654949.4	1681.438	1.45E+08
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.0721	0.087241	0.103824	0.924251	0.611578	273.9512	0.026923	0.024769	0.002531	0.002236	8888044	2580881	5058.462	5.96E+08
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.167137	0.202236	0.240677	2.370549	1.371069	676.5685	0.055296	0.050872	0.00625	0.005522	21950519	4661831	9317.616	9.89E+08
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.220837	0.267213	0.318005	4.156843	1.530698	1218.989	0.036096	0.033208	0.011264	0.009949	39548752	12625592	18109.97	1.99E+09
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.115662	0.139951	0.166553	1.619059	0.697215	457.9398	0.030401	0.027969	0.00423	0.003738	14857353	3729802	5854.632	7.02E+08
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.002314	0.002784	0.003327	0.010214	0.017569	4.08E-05	0.000595	0.000449	2.52E-07	2.17E-07	863.4938	0	141.086	0
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.002841	0.003417	0.004084	0.016647	0.021441	5.13E-05	0.000747	0.000565	3.7E-07	3.19E-07	1269.287	0	981.4	0
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.00107	0.001279	0.00154	0.012484	0.010973	1.478883	0.000141	0.000113	1.92E-05	1.24E-05	49145.92	35496.25	90.03182	1171376
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.000287	0.000345	0.000413	0.001178	0.002182	5.04E-06	7.34E-05	5.54E-05	2.99E-08	2.58E-08	102.5879	0	41.4654	0
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.002049	0.002465	0.002946	0.008412	0.015575	3.59E-05	0.000524	0.000396	2.14E-07	1.84E-07	732.3483	0	65.1	0
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.006132	0.007376	0.008815	0.036283	0.046265	0.000111	0.001614	0.00122	8.05E-07	6.93E-07	2757.589	0	633.4352	0

Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.000543	0.000653	0.000781	0.00223	0.004128	9.53E-06	0.000139	0.000105	5.66E-08	4.88E-08	194.1133	0	25.85	0
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.000911	0.001096	0.00131	0.003742	0.006927	1.6E-05	0.000233	0.000176	9.5E-08	8.19E-08	325.7371	0	63.47968	0
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.001945	0.002339	0.002796	0.01227	0.014649	3.54E-05	0.000515	0.000389	2.67E-07	2.3E-07	913.4394	0	567.8	0
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.013408	0.016127	0.019274	0.070504	0.101431	0.00024	0.003492	0.002639	1.63E-06	1.4E-06	5579.605	0	1709.458	0
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.000383	0.000461	0.000551	0.001573	0.002912	6.72E-06	9.79E-05	7.4E-05	4E-08	3.44E-08	136.9437	0	17.24439	0
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.030687	0.036906	0.044114	0.196497	0.232502	0.654251	0.008071	0.006101	1.26E-05	8.98E-06	35693.7	12844.35	4988.235	475241
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.102441	0.123214	0.147261	0.420549	0.778619	0.001797	0.026184	0.019783	1.07E-05	9.2E-06	36612.36	0	6492.626	0
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.009849	0.011846	0.014158	0.040432	0.074858	0.000173	0.002517	0.001902	1.03E-06	8.85E-07	3519.991	0	480.5644	0
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.011945	0.014367	0.017171	0.054999	0.090603	0.000211	0.003078	0.002326	1.33E-06	1.15E-06	4572.782	0	721.9445	0
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.060495	0.073199	0.087112	1.060065	0.462779	257.9844	0.009633	0.008862	0.002383	0.002106	8370021	2959732	4122.678	3.67E+08
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.373452	0.451877	0.537772	3.678582	3.042571	1550.772	0.060926	0.056052	0.014326	0.012657	50313104	6299682	4314.922	2.55E+09
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.076444	0.092497	0.110079	1.221187	0.667467	345.5845	0.021791	0.020048	0.003193	0.002821	11212110	3009789	6239.293	5.18E+08
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.015538	0.018801	0.022374	0.376385	0.135282	81.25756	0.004451	0.004095	0.000751	0.000663	2636312	945700.7	2214.429	1.22E+08
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.00937	0.011337	0.013492	0.207203	0.087117	47.29	0.002531	0.002329	0.000437	0.000386	1534272	631217	1254.68	83044612
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.052638	0.063692	0.075799	1.219624	0.590167	210.7881	0.015644	0.014393	0.001947	0.00172	6838789	4289423	11543.71	3.45E+08
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.033571	0.040621	0.048342	1.343147	0.555636	228.8842	0.00844	0.007765	0.002115	0.001868	7425895	3545925	11629.42	3.56E+08
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.053634	0.064897	0.077233	0.519098	0.455351	134.8017	0.019743	0.018163	0.001245	0.0011	4373493	855392.5	1028.186	2.12E+08
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.44846	0.542636	0.645782	6.346361	2.268979	1862.043	0.074064	0.068139	0.017202	0.015198	60411951	15975500	15072.46	3.24E+09
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.281639	0.340784	0.405561	3.298368	2.006254	1211.915	0.083042	0.076399	0.011196	0.009891	39319247	4286249	8468.426	1.57E+09
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.038948	0.047127	0.056085	1.33754	0.682382	221.9407	0.007638	0.007027	0.002051	0.001811	7200621	5672879	15080.61	3.71E+08
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.003494	0.004227	0.005031	0.064273	0.039362	25.47436	0.001043	0.000959	0.000235	0.000208	826487.5	201212.6	692.5184	52963791
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.404941	0.489979	0.583115	9.674422	4.324138	1701.054	0.082978	0.076339	0.015715	0.013884	55188826	29403628	45486.44	2.88E+09
Statewide	2039	Constructic	Aggregate	Aggregate	Diesel	0.024107	0.02917	0.034714	0.356526	0.28987	70.00556	0.009388	0.008637	0.000647	0.000571	2271253	1070653	2732.596	84179676
Statewide	2039	Industrial -	Aggregate	Aggregate	Diesel	0.016227	0.019635	0.023367	0.61079	0.357969	107.7483	0.002638	0.002427	0.000996	0.000879	3495774	3364746	10249.52	2.12E+08
Statewide	2039	Industrial -	Aggregate	Aggregate	Diesel	0.122371	0.148069	0.176215	2.904041	1.199343	453.6637	0.02585	0.023782	0.004191	0.003703	14718621	15746983	19227.44	1.41E+09
Statewide	2039	Industrial -	Aggregate	Aggregate	Diesel	0.007967	0.009582	0.011452	0.038876	0.060359	0.000142	0.002062	0.001558	9.23E-07	7.95E-07	3161.622	0	1474.294	0
Statewide	2039	Industrial -	Aggregate	Aggregate	Diesel	0.006361	0.007651	0.009145	0.030934	0.049734	0.000116	0.001694	0.00128	7.35E-07	6.33E-07	2519.154	0	308.7658	0
Statewide	2039	Industrial -	Aggregate	Aggregate	Diesel	0.00164	0.001972	0.002357	0.00872	0.013032	3.07E-05	0.000447	0.000338	2.01E-07	1.73E-07	687.3432	0	128.594	0
Statewide	2039	Industrial -	Aggregate	Aggregate	Diesel	0.059352	0.071816	0.085467	1.042033	0.53627	219.1066	0.00877	0.008068	0.002024	0.001788	7108671	4442049	4894.854	3.92E+08
Statewide	2039	Industrial -	Aggregate	Aggregate	Diesel	0.027153	0.032855	0.0391	0.489005	0.197114	128.4627	0.004909	0.004516	0.001187	0.001048	4167832	1214142	1472.369	2.03E+08
Statewide	2039	Light Comn	Aggregate	Aggregate	Diesel	0.019095	0.022758	0.02749	0.253383	0.184132	32.13154	0.001413	0.001506	0.000407	0.00027	1071570	967943.5	1384.538	35813910
Statewide	2039	Light Comn	Aggregate	Aggregate	Diesel	0.092402	0.110793	0.132897	0.862913	0.940845	150.875	0.015329	0.019513	0.001718	0.001254	4986649	1948472	16994.34	64299583
Statewide	2039	Light Comn	Aggregate	Aggregate	Diesel	0.000438	0.000526	0.000631	0.004319	0.004831	0.781509	8.31E-05	0.000107	8.8E-06	6.35E-06	25265.18	19582.25	507.2892	744125.5
Statewide	2039	Light Comn	Aggregate	Aggregate	Diesel	0.052625	0.063072	0.075694	0.502762	0.515006	83.32652	0.008069	0.0102	0.000958	0.000693	2756943	1017010	8848.94	37629387
Statewide	2039	Light Comn	Aggregate	Aggregate	Diesel	0.097404	0.116311	0.140185	1.186203	0.973404	166.8351	0.009925	0.011572	0.002052	0.001396	5548161	3816798	10081.12	1.76E+08
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.016141	0.019531	0.023243	0.337641	0.158645	117.0086	0.003348	0.00308	0.001081	0.000955	3796216	661499.5	1691.943	1.46E+08
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.071437	0.086439	0.102869	0.928495	0.598641	276.691	0.026362	0.024253	0.002556	0.002258	8976933	2606693	5090.067	6.02E+08
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.164913	0.199545	0.237475	2.36321	1.320837	683.3348	0.053074	0.048828	0.006313	0.005577	22170046	4708454	9375.831	9.99E+08
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.221362	0.267848	0.318762	4.196261	1.513565	1231.18	0.035463	0.032626	0.011376	0.010049	39944278	12751861	18223.11	2.01E+09
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.114919	0.139052	0.165483	1.632124	0.673356	462.5197	0.029796	0.027412	0.004273	0.003775	15005941	3767104	5891.211	7.09E+08
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.002343	0.002818	0.003368	0.010343	0.017787	4.13E-05	0.000602	0.000455	2.55E-07	2.2E-07	874.3098	0	142.8648	0
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.002872	0.003455	0.004129	0.016829	0.021675	5.18E-05	0.000755	0.000571	3.74E-07	3.23E-07	1283.153	0	992.13	0
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.001082	0.001293	0.001557	0.012622	0.011077	1.495301	0.000141	0.000113	1.94E-05	1.25E-05	49669.3	35875.85	91.0914	1183903
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.00029	0.000349	0.000417	0.001191	0.002205	5.09E-06	7.42E-05	5.6E-05	3.03E-08	2.61E-08	103.6976	0	41.91393	0
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.00207	0.00249	0.002976	0.008499	0.015735	3.63E-05	0.000529	0.0004	2.16E-07	1.86E-07	739.8855	0	65.77	0
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.006204	0.007463	0.008919	0.036711	0.046809	0.000112	0.001633	0.001234	8.14E-07	7.01E-07	2790.033	0	640.8889	0
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.000549	0.00066	0.000789	0.002253	0.004171	9.63E-06	0.00014	0.000106	5.72E-08	4.93E-08	196.1407	0	26.12	0
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.000922	0.001109	0.001325	0.003784	0.007005	1.62E-05	0.000236	0.000178	9.61E-08	8.28E-08	329.4134	0	64.1961	0
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.001966	0.002365	0.002827	0.012406	0.014811	3.58E-05	0.000521	0.000394	2.69E-07	2.32E-07	923.5422	0	574.08	0
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.013555	0.016303	0.019485	0.071274	0.102539	0.000242	0.00353	0.002667	1.65E-06	1.42E-06	5640.569	0	1728.125	0
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.000389	0.000468	0.00056	0.001598	0.002959	6.83E-06	9.95E-05	7.52E-05	4.06E-08	3.5E-08	139.1553	0	17.52288	0
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.031027	0.037316	0.044603	0.198678	0.235073	0.661514	0.00816	0.006168	1.28E-05	9.08E-06	36118.4	13004.95	5043.478	481183.1
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.103422	0.124394	0.14867	0.424573	0.78607	0.001814	0.026435	0.019973	1.08E-05	9.29E-06	36962.74	0	6554.761	0
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.009965	0.011985	0.014324	0.040907	0.075737	0.000175	0.002547	0.001924	1.04E-06	8.95E-07	3561.332	0	486.2084	0
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.012079	0.014528	0.017364	0.055611	0.09162	0.000214	0.003113	0.002352	1.35E-06	1.16E-06	4623.866	0	729.8216	0

Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.060721	0.073472	0.087438	1.067148	0.461495	260.5645	0.009479	0.008721	0.002407	0.002127	8453729	2989332	4148.436	3.71E+08
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.373524	0.451964	0.537875	3.711248	3.006493	1566.282	0.060228	0.055409	0.01447	0.012784	50816284	6362685	4341.881	2.58E+09
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.075745	0.091652	0.109073	1.230726	0.651549	349.0407	0.020973	0.019295	0.003225	0.002849	11324242	3039889	6278.274	5.24E+08
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.015459	0.018706	0.022262	0.379942	0.131951	82.07021	0.004342	0.003994	0.000758	0.00067	2662678	955158.6	2228.265	1.24E+08
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.009382	0.011352	0.01351	0.209237	0.086547	47.76295	0.002442	0.002247	0.000441	0.00039	1549616	637529.8	1262.519	83875139
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.052239	0.063209	0.075224	1.23039	0.585919	212.8962	0.015223	0.014006	0.001967	0.001738	6907184	4332322	11615.83	3.48E+08
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.033734	0.040819	0.048577	1.356488	0.557966	231.1732	0.008249	0.007589	0.002136	0.001887	7500161	3581388	11702.08	3.6E+08
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.05235	0.063344	0.075384	0.499222	0.43581	136.1498	0.018598	0.01711	0.001257	0.001111	4417232	863947.3	1034.61	2.14E+08
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.446739	0.540554	0.643304	6.398057	2.189604	1880.666	0.071627	0.065896	0.017374	0.01535	61016129	16135271	15166.63	3.27E+09
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.279838	0.338604	0.402967	3.28059	1.950351	1224.035	0.080896	0.074424	0.011308	0.00999	39712478	4329116	8521.335	1.59E+09
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.038785	0.04693	0.05585	1.350403	0.68279	224.1603	0.007283	0.006701	0.002071	0.00183	7272634	5729613	15174.83	3.75E+08
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.003507	0.004243	0.00505	0.064912	0.038473	25.72913	0.001034	0.000951	0.000238	0.00021	834753.2	203225	696.8451	53493481
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.405179	0.490267	0.583458	9.767665	4.316721	1718.066	0.081067	0.074581	0.015872	0.014023	55740768	29697694	45770.63	2.91E+09
Statewide	2040	Constructic	Aggregate	Aggregate	Diesel	0.023797	0.028795	0.034268	0.359007	0.286467	70.70568	0.009042	0.008318	0.000653	0.000577	2293968	1081360	2749.669	85021555
Statewide	2040	Industrial -	Aggregate	Aggregate	Diesel	0.016353	0.019787	0.023549	0.616874	0.360916	108.8259	0.002632	0.002421	0.001006	0.000888	3530736	3398396	10313.55	2.14E+08
Statewide	2040	Industrial -	Aggregate	Aggregate	Diesel	0.122335	0.148025	0.176162	2.93208	1.194453	458.2008	0.024992	0.022992	0.004233	0.00374	14865821	15904468	19347.57	1.42E+09
Statewide	2040	Industrial -	Aggregate	Aggregate	Diesel	0.007996	0.009618	0.011494	0.039025	0.060583	0.000142	0.00207	0.001564	9.26E-07	7.98E-07	3173.588	0	1479.874	0
Statewide	2040	Industrial -	Aggregate	Aggregate	Diesel	0.006402	0.0077	0.009203	0.031126	0.050049	0.000117	0.001704	0.001288	7.4E-07	6.37E-07	2534.943	0	310.632	0
Statewide	2040	Industrial -	Aggregate	Aggregate	Diesel	0.001653	0.001988	0.002376	0.008789	0.013138	3.09E-05	0.000451	0.00034	2.02E-07	1.74E-07	692.8684	0	129.6162	0
Statewide	2040	Industrial -	Aggregate	Aggregate	Diesel	0.05922	0.071656	0.085277	1.05159	0.532694	221.2979	0.008468	0.007791	0.002044	0.001806	7179765	4486474	4925.436	3.96E+08
Statewide	2040	Industrial -	Aggregate	Aggregate	Diesel	0.027192	0.032902	0.039156	0.493462	0.195795	129.7475	0.004777	0.004395	0.001199	0.001059	4209514	1226285	1481.569	2.05E+08
Statewide	2040	Light Comn	Aggregate	Aggregate	Diesel	0.019248	0.022941	0.027711	0.255194	0.184952	32.31584	0.001391	0.001487	0.000409	0.000271	1077766	973393	1392.638	36015539
Statewide	2040	Light Comn	Aggregate	Aggregate	Diesel	0.092977	0.111482	0.133725	0.868239	0.945462	151.7344	0.015337	0.019551	0.001728	0.001261	5015107	1959583	17091.1	64666232
Statewide	2040	Light Comn	Aggregate	Aggregate	Diesel	0.000441	0.000529	0.000634	0.004344	0.004854	0.785798	8.32E-05	0.000107	8.85E-06	6.38E-06	25376.21	19658.9	509.9087	747038.2
Statewide	2040	Light Comn	Aggregate	Aggregate	Diesel	0.052959	0.063472	0.076174	0.505909	0.517497	83.80092	0.008067	0.010214	0.000964	0.000697	2772723	1022818	8899.206	37844251
Statewide	2040	Light Comn	Aggregate	Aggregate	Diesel	0.098091	0.117131	0.141174	1.194069	0.97774	167.7854	0.00984	0.011507	0.002064	0.001403	5579766	3838687	10138.74	1.77E+08
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.016157	0.01955	0.023266	0.340557	0.157281	118.1672	0.003245	0.002985	0.001092	0.000964	3833806	668049.6	1702.4	1.48E+08
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.070908	0.085798	0.102107	0.927272	0.585173	279.4307	0.025557	0.023513	0.002581	0.002281	9065823	2632504	5121.525	6.08E+08
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.164298	0.198801	0.236589	2.37314	1.293945	690.1012	0.051877	0.047727	0.006375	0.005633	22389573	4755077	9433.776	1.01E+09
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.22206	0.268693	0.319767	4.235598	1.503663	1243.371	0.03458	0.031814	0.011489	0.010148	40339804	12878129	18335.74	2.03E+09
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.114528	0.138579	0.16492	1.64624	0.649704	467.0995	0.028312	0.026047	0.004315	0.003812	15154529	3804405	5927.62	7.16E+08
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.002345	0.00282	0.003371	0.010348	0.017801	4.13E-05	0.000602	0.000455	2.55E-07	2.2E-07	874.8487	0	142.9365	0
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.002872	0.003455	0.004129	0.016828	0.021674	5.18E-05	0.000755	0.000571	3.74E-07	3.22E-07	1283.099	0	992.06	0
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.001076	0.001286	0.001549	0.012598	0.011033	1.495301	0.00014	0.000112	1.94E-05	1.25E-05	49667.22	35875.85	90.65707	1183903
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.00029	0.000349	0.000417	0.00119	0.002203	5.08E-06	7.41E-05	5.6E-05	3.02E-08	2.6E-08	103.5788	0	41.86592	0
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.002071	0.00249	0.002976	0.0085	0.015737	3.63E-05	0.000529	0.0004	2.16E-07	1.86E-07	739.998	0	65.78	0
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.006205	0.007463	0.008919	0.036709	0.046811	0.000112	0.001633	0.001234	8.14E-07	7.01E-07	2790.009	0	640.8805	0
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.00055	0.000661	0.00079	0.002257	0.004179	9.65E-06	0.000141	0.000106	5.73E-08	4.94E-08	196.5162	0	26.17	0
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.000919	0.001105	0.001321	0.003773	0.006986	1.61E-05	0.000235	0.000177	9.58E-08	8.26E-08	328.4894	0	64.01604	0
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.001966	0.002365	0.002827	0.012406	0.014811	3.58E-05	0.000521	0.000394	2.69E-07	2.32E-07	923.51	0	574.06	0
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.013505	0.016243	0.019413	0.070992	0.102162	0.000241	0.003517	0.002658	1.64E-06	1.41E-06	5618.799	0	1720.933	0
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.000387	0.000465	0.000556	0.001589	0.002941	6.79E-06	9.89E-05	7.47E-05	4.04E-08	3.48E-08	138.3096	0	17.41638	0
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.031028	0.037316	0.044603	0.198679	0.235074	0.661514	0.00816	0.006168	1.28E-05	9.08E-06	36118.49	13004.95	5043.51	481183.1
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.103054	0.123951	0.148141	0.423062	0.783272	0.001808	0.02634	0.019902	1.07E-05	9.26E-06	36831.15	0	6531.426	0
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.009962	0.011982	0.01432	0.040895	0.075715	0.000175	0.002546	0.001924	1.04E-06	8.95E-07	3560.295	0	486.0668	0
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.011589	0.013939	0.01666	0.053223	0.08791	0.000205	0.002986	0.002256	1.29E-06	1.11E-06	4429.595	0	693.6566	0
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.061155	0.073998	0.088063	1.077553	0.463575	263.1446	0.00944	0.008685	0.002431	0.002148	8537438	3018932	4174.074	3.74E+08
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.374682	0.453365	0.539542	3.743941	2.993132	1581.791	0.059496	0.054736	0.014613	0.01291	51319465	6425688	4368.715	2.6E+09
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.075231	0.091029	0.108332	1.23754	0.639818	352.4969	0.020097	0.018489	0.003257	0.002877	11436374	3069990	6317.076	5.29E+08
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.015439	0.018682	0.022233	0.383623	0.129115	82.88287	0.004252	0.003912	0.000766	0.000676	2689043	964616.5	2242.036	1.25E+08
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.009397	0.011371	0.013532	0.211266	0.086309	48.23589	0.002363	0.002174	0.000446	0.000394	1564960	643842.6	1270.322	84705667
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.051919	0.062822	0.074763	1.240921	0.583751	215.0043	0.014798	0.013614	0.001986	0.001755	6975578	4375220	11687.62	3.51E+08
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.033861	0.040971	0.048759	1.369824	0.558743	233.4623	0.007839	0.007212	0.002157	0.001905	7574428	3616851	11774.4	3.63E+08
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.050895	0.061582	0.073288	0.489419	0.416531	137.498	0.017032	0.01567	0.00127	0.001122	4460971	872502.1	1041.004	2.16E+08
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.446937	0.540794	0.643589	6.45248	2.135739	1899.288	0.069275	0.063733	0.017546	0.015502	61620308	16295041	15260.36	3.3E+09

Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.278342	0.336794	0.400813	3.25425	1.912166	1236.156	0.078577	0.072291	0.011421	0.010089	40105709	4371982	8573.999	1.61E+09
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.038885	0.047051	0.055994	1.36348	0.686061	226.3799	0.007035	0.006472	0.002092	0.001848	7344647	5786347	15268.61	3.78E+08
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.003506	0.004243	0.005049	0.065554	0.037664	25.9839	0.00099	0.000911	0.00024	0.000212	843018.9	205237.3	701.1518	54023171
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.406364	0.491701	0.585165	9.857434	4.323713	1735.078	0.079274	0.072932	0.016029	0.014161	56292710	29991759	46053.5	2.94E+09
Statewide	2041	Constructic	Aggregate	Aggregate	Diesel	0.023504	0.02844	0.033845	0.36109	0.284309	71.4058	0.008687	0.007992	0.000659	0.000583	2316683	1092068	2766.663	85863434
Statewide	2041	Industrial -	Aggregate	Aggregate	Diesel	0.016459	0.019915	0.0237	0.622938	0.36382	109.9035	0.002525	0.002323	0.001016	0.000897	3565697	3432047	10377.3	2.16E+08
Statewide	2041	Industrial -	Aggregate	Aggregate	Diesel	0.122496	0.14822	0.176395	2.960283	1.192061	462.7379	0.024136	0.022205	0.004275	0.003777	15013022	16061954	19467.14	1.44E+09
Statewide	2041	Industrial -	Aggregate	Aggregate	Diesel	0.007951	0.009563	0.011429	0.038806	0.060239	0.000141	0.002058	0.001555	9.21E-07	7.93E-07	3155.674	0	1471.52	0
Statewide	2041	Industrial -	Aggregate	Aggregate	Diesel	0.006365	0.007656	0.00915	0.030948	0.049763	0.000116	0.001695	0.00128	7.35E-07	6.33E-07	2520.422	0	308.8477	0
Statewide	2041	Industrial -	Aggregate	Aggregate	Diesel	0.001627	0.001957	0.002339	0.008643	0.012932	3.04E-05	0.000443	0.000335	1.99E-07	1.71E-07	681.6238	0	127.428	0
Statewide	2041	Industrial -	Aggregate	Aggregate	Diesel	0.05953	0.072031	0.085723	1.061642	0.534346	223.4891	0.008271	0.00761	0.002064	0.001824	7250859	4530899	4955.877	4E+08
Statewide	2041	Industrial -	Aggregate	Aggregate	Diesel	0.027301	0.033034	0.039314	0.498051	0.195223	131.0322	0.004795	0.004412	0.001211	0.001069	4251196	1238427	1490.725	2.07E+08
Statewide	2041	Light Comn	Aggregate	Aggregate	Diesel	0.01925	0.022942	0.027713	0.255199	0.184961	32.31697	0.001392	0.001487	0.000409	0.000271	1077803	973393	1392.738	36015539
Statewide	2041	Light Comn	Aggregate	Aggregate	Diesel	0.092977	0.111482	0.133725	0.86824	0.945461	151.7343	0.015338	0.019551	0.001728	0.001261	5015104	1959583	17091.15	64666232
Statewide	2041	Light Comn	Aggregate	Aggregate	Diesel	0.000441	0.000529	0.000634	0.004344	0.004854	0.785795	8.32E-05	0.000107	8.85E-06	6.38E-06	25376.1	19658.9	509.919	747038.2
Statewide	2041	Light Comn	Aggregate	Aggregate	Diesel	0.052959	0.063472	0.076174	0.505912	0.5175	83.80132	0.008067	0.010215	0.000964	0.000697	2772736	1022818	8899.336	37844251
Statewide	2041	Light Comn	Aggregate	Aggregate	Diesel	0.098091	0.117131	0.141174	1.194068	0.977742	167.7856	0.00984	0.011508	0.002064	0.001403	5579772	3838687	10138.66	1.77E+08
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.016215	0.019621	0.02335	0.343847	0.156926	119.3258	0.003201	0.002945	0.001103	0.000974	3871395	674599.8	1712.809	1.49E+08
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.070594	0.085419	0.101656	0.93243	0.573451	282.1705	0.024945	0.02295	0.002607	0.002303	9154712	2658315	5152.838	6.14E+08
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.163641	0.198005	0.235643	2.386901	1.268391	696.8675	0.050113	0.046104	0.006438	0.005688	22609099	4801699	9491.455	1.02E+09
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.223109	0.269962	0.321277	4.273732	1.500398	1255.562	0.033994	0.031274	0.011602	0.010248	40735331	13004397	18447.85	2.05E+09
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.113974	0.137908	0.164122	1.659673	0.627499	471.6794	0.027157	0.024984	0.004357	0.00385	15303117	3841707	5963.862	7.23E+08
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.002346	0.002822	0.003373	0.01035	0.017812	4.14E-05	0.000603	0.000455	2.55E-07	2.2E-07	875.1546	0	142.9533	0
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.002872	0.003454	0.004129	0.016827	0.021673	5.18E-05	0.000755	0.000571	3.74E-07	3.22E-07	1283.043	0	992.06	0
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.00107	0.001279	0.00154	0.012575	0.01099	1.495301	0.000138	0.000111	1.94E-05	1.25E-05	49665.2	35875.85	90.23331	1183903
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.00029	0.000349	0.000418	0.001192	0.002207	5.1E-06	7.42E-05	5.61E-05	3.03E-08	2.61E-08	103.8004	0	41.95551	0
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.002071	0.002491	0.002977	0.008501	0.01574	3.63E-05	0.000529	0.0004	2.16E-07	1.86E-07	740.1105	0	65.79	0
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.006203	0.007461	0.008917	0.036702	0.0468	0.000112	0.001633	0.001234	8.14E-07	7.01E-07	2789.422	0	640.7463	0
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.00055	0.000661	0.00079	0.002257	0.004179	9.65E-06	0.000141	0.000106	5.73E-08	4.94E-08	196.5162	0	26.17	0
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.000915	0.001101	0.001316	0.003758	0.006957	1.61E-05	0.000234	0.000177	9.55E-08	8.22E-08	327.1294	0	63.75101	0
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.001967	0.002365	0.002827	0.012408	0.014813	3.58E-05	0.000521	0.000394	2.7E-07	2.32E-07	923.6549	0	574.15	0
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.013454	0.016182	0.019341	0.070709	0.10178	0.000241	0.003504	0.002648	1.63E-06	1.41E-06	5596.867	0	1713.756	0
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.000383	0.000461	0.000551	0.001573	0.002912	6.72E-06	9.79E-05	7.4E-05	3.99E-08	3.44E-08	136.9064	0	17.2397	0
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.031027	0.037315	0.044603	0.198676	0.235071	0.661514	0.00816	0.006168	1.28E-05	9.08E-06	36118.28	13004.95	5043.435	481183.1
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.102713	0.123542	0.147652	0.421665	0.780686	0.001802	0.026254	0.019836	1.07E-05	9.23E-06	36709.56	0	6509.864	0
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.009955	0.011974	0.014311	0.040868	0.075664	0.000175	0.002545	0.001923	1.04E-06	8.94E-07	3557.908	0	485.741	0
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.011098	0.013348	0.015953	0.050857	0.084185	0.000196	0.002859	0.00216	1.24E-06	1.06E-06	4236.196	0	658.858	0
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.061481	0.074392	0.088532	1.087366	0.464786	265.7247	0.009276	0.008534	0.002455	0.002169	8621146	3048532	4199.595	3.78E+08
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.37625	0.455262	0.5418	3.774574	2.98665	1597.3	0.058663	0.05397	0.014757	0.013037	51822645	6488691	4395.426	2.63E+09
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.075352	0.091176	0.108507	1.249182	0.63591	355.9531	0.019765	0.018184	0.003289	0.002905	11548506	3100091	6355.699	5.34E+08
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.015494	0.018747	0.022311	0.387345	0.128872	83.69552	0.003997	0.003678	0.000773	0.000683	2715409	974074.5	2255.744	1.26E+08
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.009376	0.011345	0.013502	0.213037	0.085727	48.70884	0.002272	0.00209	0.00045	0.000398	1580305	650155.4	1278.089	85536194
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.051815	0.062696	0.074613	1.250591	0.582238	217.1124	0.014337	0.01319	0.002006	0.001772	7043973	4418119	11759.08	3.55E+08
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.034063	0.041216	0.049051	1.383202	0.560832	235.7514	0.007741	0.007122	0.002179	0.001924	7648694	3652313	11846.39	3.67E+08
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.050606	0.061233	0.072872	0.48296	0.407737	138.8461	0.016539	0.015216	0.001282	0.001133	4504710	881056.8	1047.369	2.18E+08
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.447502	0.541478	0.644403	6.506615	2.095336	1917.91	0.066708	0.061371	0.017719	0.015654	62224487	16454812	15353.67	3.33E+09
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.276691	0.334796	0.398435	3.185865	1.861968	1248.276	0.075652	0.0696	0.011533	0.010188	40498940	4414849	8626.422	1.62E+09
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.038943	0.047121	0.056078	1.376548	0.688985	228.5996	0.006713	0.006176	0.002112	0.001866	7416661	5843082	15361.97	3.82E+08
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.00352	0.004259	0.005069	0.066194	0.037408	26.23866	0.000992	0.000913	0.000242	0.000214	851284.6	207249.6	705.4388	54552861
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.407777	0.49341	0.587198	9.94983	4.334346	1752.091	0.077569	0.071364	0.016187	0.0143	56844652	30285824	46335.08	2.97E+09
Statewide	2042	Constructic	Aggregate	Aggregate	Diesel	0.023052	0.027893	0.033195	0.357069	0.278817	72.10593	0.008149	0.007497	0.000666	0.000589	2339397	1102776	2783.578	86705314
Statewide	2042	Industrial -	Aggregate	Aggregate	Diesel	0.016554	0.02003	0.023837	0.628865	0.366533	110.981	0.002458	0.002262	0.001026	0.000906	3600658	3465698	10440.74	2.18E+08
Statewide	2042	Industrial -	Aggregate	Aggregate	Diesel	0.122617	0.148367	0.176569	2.986149	1.19034	467.275	0.023179	0.021324	0.004317	0.003814	15160223	16219439	19586.17	1.45E+09
Statewide	2042	Industrial -	Aggregate	Aggregate	Diesel	0.007923	0.00953	0.01139	0.038675	0.060031	0.000141	0.002051	0.00155	9.18E-07	7.9E-07	3144.967	0	1466.527	0
Statewide	2042	Industrial -	Aggregate	Aggregate	Diesel	0.006337	0.007622	0.009109	0.03081	0.04954	0.000116	0.001687	0.001275	7.32E-07	6.31E-07	2509.158	0	307.4786	0

Statewide	2042	Industrial -	Aggregate	Aggregate	Diesel	0.001602	0.001927	0.002303	0.008501	0.01273	3E-05	0.000436	0.00033	1.96E-07	1.69E-07	670.6391	0	125.3069	0
Statewide	2042	Industrial -	Aggregate	Aggregate	Diesel	0.059757	0.072306	0.08605	1.071552	0.537878	225.6804	0.008119	0.00747	0.002085	0.001842	7321953	4575323	4986.177	4.04E+08
Statewide	2042	Industrial -	Aggregate	Aggregate	Diesel	0.027322	0.03306	0.039344	0.502409	0.19328	132.317	0.004584	0.004217	0.001223	0.00108	4292879	1250570	1499.84	2.09E+08
Statewide	2042	Light Comn	Aggregate	Aggregate	Diesel	0.019248	0.02294	0.02771	0.25519	0.184947	32.3152	0.001391	0.001486	0.000409	0.000271	1077745	973393	1392.578	36015539
Statewide	2042	Light Comn	Aggregate	Aggregate	Diesel	0.092976	0.111481	0.133723	0.868233	0.945454	151.7334	0.015338	0.019551	0.001728	0.001261	5015072	1959583	17090.93	64666232
Statewide	2042	Light Comn	Aggregate	Aggregate	Diesel	0.000441	0.000529	0.000634	0.004343	0.004853	0.785637	8.32E-05	0.000107	8.85E-06	6.38E-06	25370.94	19658.9	509.7888	747038.2
Statewide	2042	Light Comn	Aggregate	Aggregate	Diesel	0.052961	0.063474	0.076176	0.505918	0.51751	83.8027	0.008067	0.010215	0.000964	0.000697	2772781	1022818	8899.446	37844251
Statewide	2042	Light Comn	Aggregate	Aggregate	Diesel	0.098095	0.117136	0.141179	1.194086	0.977769	167.7893	0.009841	0.011509	0.002064	0.001403	5579892	3838687	10139.15	1.77E+08
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.016278	0.019696	0.02344	0.347143	0.157024	120.4845	0.003132	0.002882	0.001113	0.000983	3908985	681149.9	1723.17	1.51E+08
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.069891	0.084568	0.100642	0.929041	0.560507	284.9103	0.02387	0.021961	0.002632	0.002325	9243601	2684127	5184.01	6.2E+08
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.162727	0.196899	0.234327	2.395382	1.244424	703.6339	0.047813	0.043988	0.006501	0.005743	22828626	4848322	9548.873	1.03E+09
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.224228	0.271315	0.322888	4.314244	1.499734	1267.753	0.033098	0.03045	0.011714	0.010347	41130857	13130665	18559.44	2.07E+09
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.113522	0.137362	0.163472	1.672605	0.61128	476.2592	0.025522	0.02348	0.0044	0.003887	15451705	3879009	5999.94	7.3E+08
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.002348	0.002824	0.003375	0.010352	0.017822	4.14E-05	0.000603	0.000456	2.55E-07	2.2E-07	875.46	0	142.9765	0
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.002873	0.003456	0.00413	0.016833	0.021682	5.19E-05	0.000756	0.000571	3.75E-07	3.23E-07	1283.515	0	992.2699	0
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.001065	0.001272	0.001533	0.012553	0.01095	1.495301	0.000137	0.00011	1.94E-05	1.25E-05	49663.31	35875.85	89.83819	1183903
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.00029	0.000349	0.000418	0.001192	0.002208	5.1E-06	7.42E-05	5.61E-05	3.03E-08	2.61E-08	103.803	0	41.95657	0
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.002071	0.002492	0.002978	0.008504	0.015744	3.63E-05	0.000529	0.0004	2.16E-07	1.86E-07	740.3355	0	65.81	0
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.006202	0.00746	0.008916	0.036694	0.046792	0.000112	0.001633	0.001234	8.14E-07	7.01E-07	2788.858	0	640.6158	0
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.00055	0.000662	0.000791	0.002258	0.004181	9.65E-06	0.000141	0.000106	5.74E-08	4.94E-08	196.5913	0	26.18	0
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.000911	0.001096	0.00131	0.00374	0.006924	1.6E-05	0.000233	0.000176	9.5E-08	8.18E-08	325.5913	0	63.45126	0
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.001967	0.002365	0.002827	0.012407	0.014812	3.58E-05	0.000521	0.000394	2.69E-07	2.32E-07	923.6066	0	574.12	0
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.013408	0.016126	0.019274	0.070445	0.101429	0.00024	0.003492	0.002638	1.63E-06	1.4E-06	5576.518	0	1707.001	0
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.000378	0.000455	0.000544	0.001553	0.002875	6.64E-06	9.67E-05	7.3E-05	3.94E-08	3.4E-08	135.1795	0	17.02223	0
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.031027	0.037316	0.044603	0.198678	0.235073	0.661514	0.00816	0.006168	1.28E-05	9.08E-06	36118.39	13004.95	5043.476	481183.1
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.102402	0.123167	0.147205	0.420388	0.778322	0.001797	0.026174	0.019776	1.07E-05	9.2E-06	36598.38	0	6490.148	0
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.009952	0.01197	0.014306	0.040855	0.07564	0.000175	0.002544	0.001922	1.04E-06	8.94E-07	3556.74	0	485.5815	0
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.010783	0.01297	0.015501	0.049511	0.081798	0.000191	0.002778	0.002099	1.2E-06	1.04E-06	4121.032	0	644.8382	0
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.061629	0.074571	0.088745	1.096743	0.466187	268.3048	0.008961	0.008244	0.002479	0.00219	8704854	3078133	4225	3.82E+08
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.377851	0.4572	0.544106	3.806891	2.972062	1612.809	0.057158	0.052586	0.0149	0.013164	52325825	6551694	4422.016	2.65E+09
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.07506	0.090823	0.108087	1.256275	0.6291	359.4093	0.019021	0.017499	0.003321	0.002933	11660638	3130192	6394.148	5.39E+08
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.015441	0.018684	0.022235	0.390975	0.127919	84.50818	0.003786	0.003483	0.000781	0.00069	2741775	983532.4	2269.39	1.27E+08
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.009354	0.011318	0.01347	0.215056	0.085488	49.18179	0.002175	0.002001	0.000454	0.000401	1595649	656468.1	1285.821	86366722
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.051444	0.062247	0.074079	1.261558	0.580247	219.2205	0.013601	0.012513	0.002025	0.001789	7112368	4461017	11830.21	3.58E+08
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.034005	0.041146	0.048967	1.396229	0.562277	238.0404	0.00733	0.006744	0.0022	0.001943	7722960	3687776	11918.06	3.71E+08
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.04988	0.060355	0.071827	0.477952	0.400014	140.1943	0.015757	0.014496	0.001295	0.001144	4548449	889611.6	1053.705	2.21E+08
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.449383	0.543754	0.647112	6.566079	2.074506	1936.533	0.065025	0.059823	0.017891	0.015806	62828665	16614582	15446.55	3.36E+09
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.276687	0.334792	0.39843	3.182621	1.832589	1260.396	0.073658	0.067765	0.011645	0.010287	40892171	4457716	8678.607	1.64E+09
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.039011	0.047203	0.056176	1.389554	0.692813	230.8192	0.006398	0.005886	0.002133	0.001884	7488674	5899816	15454.9	3.86E+08
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.00351	0.004248	0.005055	0.066825	0.036998	26.49343	0.000975	0.000897	0.000245	0.000216	859550.2	209261.9	709.7062	55082551
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.408517	0.494305	0.588264	10.04093	4.345929	1769.103	0.074969	0.068972	0.016344	0.014439	57396595	30579889	46615.38	3E+09
Statewide	2043	Constructic	Aggregate	Aggregate	Diesel	0.022887	0.027693	0.032957	0.359866	0.275702	72.80605	0.007812	0.007187	0.000672	0.000594	2362112	1113483	2800.417	87547193
Statewide	2043	Industrial -	Aggregate	Aggregate	Diesel	0.016644	0.020139	0.023967	0.634885	0.369428	112.0586	0.002364	0.002175	0.001036	0.000915	3635619	3499349	10503.9	2.2E+08
Statewide	2043	Industrial -	Aggregate	Aggregate	Diesel	0.122791	0.148578	0.17682	3.013711	1.190397	471.8121	0.022024	0.020262	0.004358	0.003851	15307423	16376924	19704.65	1.47E+09
Statewide	2043	Industrial -	Aggregate	Aggregate	Diesel	0.007906	0.009509	0.011364	0.038591	0.059897	0.00014	0.002047	0.001546	9.16E-07	7.89E-07	3138.067	0	1463.309	0
Statewide	2043	Industrial -	Aggregate	Aggregate	Diesel	0.006321	0.007602	0.009086	0.030745	0.049417	0.000116	0.001683	0.001271	7.3E-07	6.29E-07	2503.465	0	306.977	0
Statewide	2043	Industrial -	Aggregate	Aggregate	Diesel	0.001584	0.001906	0.002278	0.008419	0.012592	2.96E-05	0.000432	0.000326	1.94E-07	1.67E-07	663.8194	0	124.1333	0
Statewide	2043	Industrial -	Aggregate	Aggregate	Diesel	0.060025	0.07263	0.086436	1.081524	0.540262	227.8717	0.007903	0.007271	0.002105	0.00186	7393046	4619748	5016.341	4.07E+08
Statewide	2043	Industrial -	Aggregate	Aggregate	Diesel	0.02746	0.033226	0.039542	0.504764	0.192686	133.6017	0.004497	0.004137	0.001234	0.00109	4334561	1262713	1508.913	2.12E+08
Statewide	2043	Light Comn	Aggregate	Aggregate	Diesel	0.019248	0.022941	0.027711	0.255193	0.184952	32.31584	0.001391	0.001487	0.000409	0.000271	1077766	973393	1392.608	36015539
Statewide	2043	Light Comn	Aggregate	Aggregate	Diesel	0.092978	0.111483	0.133726	0.86824	0.945466	151.735	0.015338	0.019552	0.001728	0.001261	5015124	1959583	17091.13	64666232
Statewide	2043	Light Comn	Aggregate	Aggregate	Diesel	0.000441	0.000529	0.000634	0.004343	0.004853	0.785631	8.32E-05	0.000107	8.85E-06	6.38E-06	25370.74	19658.9	509.7689	747038.2
Statewide	2043	Light Comn	Aggregate	Aggregate	Diesel	0.05296	0.063472	0.076174	0.505913	0.517501	83.80151	0.008067	0.010215	0.000964	0.000697	2772742	1022818	8899.366	37844251
Statewide	2043	Light Comn	Aggregate	Aggregate	Diesel	0.098093	0.117133	0.141176	1.194074	0.977752	167.7869	0.00984	0.011508	0.002064	0.001403	5579815	3838687	10138.82	1.77E+08
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.016359	0.019795	0.023557	0.350452	0.156528	121.6431	0.003095	0.002848	0.001124	0.000993	3946575	687700	1733.485	1.52E+08

Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.068978	0.083464	0.099329	0.928894	0.545878	287.6501	0.022825	0.020999	0.002657	0.002348	9332490	2709938	5215.041	6.26E+08
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.161439	0.195342	0.232473	2.408592	1.220351	710.4002	0.0457	0.042044	0.006563	0.005798	23048153	4894945	9606.032	1.04E+09
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.225507	0.272863	0.324729	4.351054	1.499758	1279.944	0.032749	0.030129	0.011827	0.010447	41526383	13256934	18670.54	2.09E+09
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.11328	0.137068	0.163123	1.686076	0.595724	480.839	0.024925	0.022931	0.004442	0.003925	15600293	3916310	6035.855	7.37E+08
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.002347	0.002823	0.003374	0.010353	0.017819	4.14E-05	0.000603	0.000456	2.55E-07	2.2E-07	875.4315	0	142.9912	0
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.002873	0.003456	0.00413	0.016833	0.021681	5.19E-05	0.000756	0.000571	3.74E-07	3.23E-07	1283.476	0	992.32	0
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.00106	0.001266	0.001525	0.012531	0.010908	1.495301	0.000135	0.000109	1.94E-05	1.25E-05	49661.34	35875.85	89.42644	1183903
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.00029	0.000349	0.000417	0.001191	0.002205	5.09E-06	7.42E-05	5.6E-05	3.03E-08	2.61E-08	103.6857	0	41.90914	0
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.002072	0.002492	0.002979	0.008506	0.015749	3.64E-05	0.00053	0.0004	2.16E-07	1.86E-07	740.5605	0	65.83001	0
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.006201	0.007459	0.008915	0.036689	0.046786	0.000112	0.001632	0.001233	8.14E-07	7.01E-07	2788.469	0	640.5249	0
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.000551	0.000663	0.000792	0.002262	0.004189	9.67E-06	0.000141	0.000106	5.75E-08	4.95E-08	196.9668	0	26.23	0
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.000908	0.001093	0.001306	0.003729	0.006905	1.59E-05	0.000232	0.000175	9.47E-08	8.16E-08	324.6743	0	63.27256	0
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.001966	0.002365	0.002827	0.012406	0.014811	3.58E-05	0.000521	0.000394	2.69E-07	2.32E-07	923.5262	0	574.07	0
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.013369	0.01608	0.019218	0.070258	0.101134	0.000239	0.003482	0.002631	1.62E-06	1.4E-06	5561.226	0	1702.791	0
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.000374	0.00045	0.000537	0.001535	0.002842	6.56E-06	9.56E-05	7.22E-05	3.9E-08	3.36E-08	133.6205	0	16.82592	0
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.031028	0.037316	0.044604	0.198679	0.235075	0.661514	0.00816	0.006168	1.28E-05	9.08E-06	36118.51	13004.95	5043.515	481183.1
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.102146	0.122859	0.146837	0.419337	0.776376	0.001792	0.026109	0.019726	1.07E-05	9.18E-06	36506.9	0	6473.924	0
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.009949	0.011967	0.014302	0.040844	0.07562	0.000175	0.002543	0.001921	1.04E-06	8.94E-07	3555.805	0	485.4538	0
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.010725	0.0129	0.015418	0.049288	0.081357	0.00019	0.002764	0.002088	1.2E-06	1.03E-06	4101.071	0	643.5077	0
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.061913	0.074914	0.089154	1.106821	0.468531	270.8849	0.008751	0.008051	0.002503	0.002211	8788563	3107733	4250.291	3.85E+08
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.379831	0.459596	0.546957	3.835614	2.968255	1628.319	0.056431	0.051917	0.015043	0.01329	52829006	6614697	4448.486	2.68E+09
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.074837	0.090553	0.107766	1.264185	0.621642	362.8655	0.018329	0.016863	0.003353	0.002962	11772770	3160293	6432.422	5.44E+08
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.015404	0.018638	0.022181	0.394663	0.127384	85.32083	0.003547	0.003263	0.000788	0.000696	2768140	992990.3	2282.974	1.29E+08
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.009291	0.011242	0.013378	0.217048	0.084769	49.65473	0.002067	0.001902	0.000459	0.000405	1610993	662780.9	1293.518	87197249
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.051143	0.061883	0.073645	1.272399	0.581116	221.3286	0.013109	0.01206	0.002045	0.001806	7180762	4503916	11901.03	3.62E+08
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.034067	0.041221	0.049057	1.409547	0.563804	240.3295	0.007199	0.006624	0.002221	0.001962	7797226	3723239	11989.4	3.74E+08
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.048684	0.058908	0.070105	0.467437	0.382781	141.5424	0.014783	0.0136	0.001307	0.001155	4592189	898166.3	1060.012	2.23E+08
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.451137	0.545876	0.649637	6.626575	2.047985	1955.155	0.06338	0.05831	0.018063	0.015958	63432844	16774353	15539.01	3.4E+09
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.275716	0.333617	0.397031	3.139054	1.78718	1272.517	0.071173	0.065479	0.011757	0.010386	41285402	4500582	8730.556	1.65E+09
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.039101	0.047312	0.056305	1.40262	0.697388	233.0388	0.006166	0.005673	0.002153	0.001902	7560687	5956550	15547.41	3.9E+08
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.003506	0.004242	0.005048	0.067464	0.036519	26.7482	0.000961	0.000884	0.000247	0.000218	867815.9	211274.2	713.9545	55612240
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.409499	0.495493	0.589678	10.12322	4.360282	1786.115	0.072713	0.066896	0.016501	0.014578	57948537	30873954	46894.42	3.03E+09
Statewide	2044	Constructic	Aggregate	Aggregate	Diesel	0.022499	0.027224	0.032399	0.361647	0.273106	73.50618	0.007459	0.006862	0.000679	0.0006	2384827	1124191	2817.18	88389072
Statewide	2044	Industrial -	Aggregate	Aggregate	Diesel	0.016706	0.020214	0.024057	0.640908	0.372051	113.1362	0.002317	0.002132	0.001045	0.000923	3670580	3532999	10566.78	2.22E+08
Statewide	2044	Industrial -	Aggregate	Aggregate	Diesel	0.122772	0.148554	0.176791	3.041204	1.191938	476.3492	0.021122	0.019432	0.0044	0.003888	15454624	16534409	19822.6	1.48E+09
Statewide	2044	Industrial -	Aggregate	Aggregate	Diesel	0.007893	0.009494	0.011346	0.038538	0.059802	0.00014	0.002043	0.001544	9.14E-07	7.88E-07	3133.472	0	1461.166	0
Statewide	2044	Industrial -	Aggregate	Aggregate	Diesel	0.006321	0.007602	0.009086	0.030752	0.04942	0.000116	0.001683	0.001272	7.31E-07	6.29E-07	2503.834	0	307.1115	0
Statewide	2044	Industrial -	Aggregate	Aggregate	Diesel	0.00158	0.0019	0.002271	0.0084	0.012556	2.96E-05	0.000431	0.000325	1.93E-07	1.66E-07	662.1644	0	123.875	0
Statewide	2044	Industrial -	Aggregate	Aggregate	Diesel	0.060327	0.072996	0.086871	1.091426	0.543815	230.063	0.007778	0.007156	0.002125	0.001878	7464140	4664173	5046.368	4.11E+08
Statewide	2044	Industrial -	Aggregate	Aggregate	Diesel	0.027611	0.033409	0.039759	0.507617	0.192655	134.8865	0.004393	0.004042	0.001246	0.001101	4376244	1274855	1517.945	2.14E+08
Statewide	2044	Light Comn	Aggregate	Aggregate	Diesel	0.019248	0.02294	0.02771	0.25519	0.184947	32.31511	0.001391	0.001486	0.000409	0.000271	1077742	973393	1392.568	36015539
Statewide	2044	Light Comn	Aggregate	Aggregate	Diesel	0.092979	0.111485	0.133728	0.868247	0.945476	151.7363	0.015339	0.019552	0.001728	0.001261	5015169	1959583	17091.34	64666232
Statewide	2044	Light Comn	Aggregate	Aggregate	Diesel	0.000441	0.000529	0.000634	0.004343	0.004853	0.785685	8.32E-05	0.000107	8.85E-06	6.38E-06	25372.48	19658.9	509.7687	747038.2
Statewide	2044	Light Comn	Aggregate	Aggregate	Diesel	0.052963	0.063476	0.076179	0.505928	0.517524	83.80457	0.008068	0.010216	0.000964	0.000697	2772843	1022818	8899.806	37844251
Statewide	2044	Light Comn	Aggregate	Aggregate	Diesel	0.098092	0.117132	0.141175	1.19407	0.977745	167.786	0.00984	0.011508	0.002064	0.001403	5579785	3838687	10138.74	1.77E+08
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.016459	0.019915	0.023701	0.353753	0.157311	122.8017	0.003061	0.002816	0.001135	0.001002	3984165	694250.2	1743.754	1.54E+08
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.067589	0.081783	0.097328	0.921124	0.531592	290.3899	0.021848	0.020101	0.002683	0.00237	9421379	2735749	5245.934	6.32E+08
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.159718	0.193259	0.229994	2.41579	1.194326	717.1666	0.04386	0.040351	0.006626	0.005853	23267679	4941568	9662.935	1.05E+09
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.226734	0.274348	0.326497	4.388457	1.500523	1292.135	0.032322	0.029736	0.01194	0.010546	41921909	13383202	18781.14	2.11E+09
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.112433	0.136045	0.161904	1.69964	0.579442	485.4189	0.024035	0.022112	0.004485	0.003962	15748881	3953612	6071.61	7.44E+08
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.002346	0.002822	0.003373	0.010345	0.017812	4.14E-05	0.000603	0.000455	2.55E-07	2.2E-07	874.8824	0	142.8765	0
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.002873	0.003456	0.00413	0.016833	0.021681	5.19E-05	0.000756	0.000571	3.75E-07	3.23E-07	1283.501	0	992.33	0
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.001053	0.001258	0.001515	0.012503	0.010856	1.495301	0.000134	0.000107	1.94E-05	1.25E-05	49658.91	35875.85	88.91917	1183903
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.000291	0.00035	0.000418	0.001193	0.002209	5.1E-06	7.43E-05	5.61E-05	3.03E-08	2.61E-08	103.8568	0	41.97831	0
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.002071	0.002491	0.002977	0.008501	0.01574	3.63E-05	0.000529	0.0004	2.16E-07	1.86E-07	740.1105	0	65.79	0

Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.0062	0.007458	0.008913	0.036684	0.046779	0.000112	0.001632	0.001233	8.14E-07	7.01E-07	2788.068	0	640.4335	0
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.000551	0.000663	0.000793	0.002263	0.00419	9.67E-06	0.000141	0.000106	5.75E-08	4.95E-08	197.0419	0	26.24	0
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.000904	0.001087	0.0013	0.003711	0.006871	1.59E-05	0.000231	0.000175	9.43E-08	8.12E-08	323.1083	0	62.96738	0
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.001966	0.002365	0.002827	0.012405	0.014811	3.58E-05	0.000521	0.000394	2.69E-07	2.32E-07	923.494	0	574.05	0
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.013342	0.016047	0.019179	0.07014	0.100927	0.000239	0.003475	0.002625	1.62E-06	1.4E-06	5551.232	0	1700.416	0
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.000369	0.000444	0.00053	0.001514	0.002804	6.47E-06	9.43E-05	7.12E-05	3.85E-08	3.31E-08	131.8299	0	16.60044	0
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.031027	0.037316	0.044603	0.198678	0.235073	0.661514	0.00816	0.006168	1.28E-05	9.08E-06	36118.4	13004.95	5043.479	481183.1
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.102192	0.122915	0.146903	0.419526	0.776725	0.001793	0.02612	0.019735	1.07E-05	9.18E-06	36523.29	0	6476.832	0
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.009944	0.011961	0.014295	0.040824	0.075583	0.000174	0.002542	0.00192	1.04E-06	8.93E-07	3554.098	0	485.2208	0
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.010773	0.012958	0.015487	0.049499	0.081719	0.000191	0.002776	0.002097	1.2E-06	1.04E-06	4118.904	0	645.9854	0
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.062215	0.07528	0.08959	1.116729	0.471142	273.465	0.008639	0.007948	0.002526	0.002232	8872271	3137333	4275.468	3.89E+08
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.38227	0.462546	0.550469	3.870428	2.971307	1643.828	0.056224	0.051726	0.015187	0.013417	53332186	6677700	4474.837	2.71E+09
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.074543	0.090197	0.107342	1.272194	0.618297	366.3216	0.017803	0.016378	0.003385	0.00299	11884902	3190394	6470.527	5.49E+08
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.015225	0.018422	0.021924	0.398159	0.125787	86.13349	0.0034	0.003128	0.000796	0.000703	2794506	1002448	2296.498	1.3E+08
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.009214	0.011149	0.013269	0.21876	0.084279	50.12768	0.001942	0.001787	0.000463	0.000409	1626337	669093.7	1301.18	88027776
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.050821	0.061494	0.073183	1.283325	0.581763	223.4367	0.012743	0.011723	0.002064	0.001824	7249157	4546814	11971.53	3.65E+08
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.034153	0.041325	0.049181	1.422829	0.567255	242.6186	0.006905	0.006353	0.002242	0.00198	7871492	3758701	12060.42	3.78E+08
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.047719	0.05774	0.068716	0.459087	0.364779	142.8906	0.01378	0.012678	0.00132	0.001166	4635928	906721.1	1066.292	2.25E+08
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.452381	0.547381	0.651429	6.683242	2.024951	1973.777	0.062205	0.057229	0.018235	0.01611	64037023	16934124	15631.06	3.43E+09
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.274313	0.331918	0.39501	3.119231	1.7492	1284.637	0.068949	0.063433	0.011869	0.010485	41678633	4543449	8782.274	1.67E+09
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.039263	0.047508	0.056539	1.415821	0.70182	235.2584	0.005987	0.005508	0.002174	0.00192	7632701	6013285	15639.51	3.93E+08
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.003467	0.004195	0.004992	0.067851	0.035828	27.00297	0.000894	0.000822	0.00025	0.00022	876081.6	213286.6	718.1838	56141930
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.410521	0.496731	0.59115	10.21321	4.377467	1803.127	0.070696	0.06504	0.016658	0.014717	58500479	31168019	47172.21	3.05E+09
Statewide	2045	Constructic	Aggregate	Aggregate	Diesel	0.022065	0.026699	0.031773	0.363569	0.270596	74.2063	0.007096	0.006528	0.000685	0.000606	2407542	1134898	2833.869	89230951
Statewide	2045	Industrial -	Aggregate	Aggregate	Diesel	0.016813	0.020344	0.024211	0.646966	0.375072	114.2138	0.00231	0.002125	0.001055	0.000932	3705541	3566650	10629.37	2.24E+08
Statewide	2045	Industrial -	Aggregate	Aggregate	Diesel	0.122832	0.148627	0.176878	3.069025	1.19348	480.8862	0.020197	0.018581	0.004442	0.003925	15601824	16691895	19940.03	1.49E+09
Statewide	2045	Industrial -	Aggregate	Aggregate	Diesel	0.007897	0.009498	0.011352	0.03856	0.059829	0.00014	0.002044	0.001545	9.15E-07	7.88E-07	3135.168	0	1461.956	0
Statewide	2045	Industrial -	Aggregate	Aggregate	Diesel	0.006327	0.00761	0.009095	0.030786	0.049471	0.000116	0.001685	0.001273	7.31E-07	6.3E-07	2506.5	0	307.4693	0
Statewide	2045	Industrial -	Aggregate	Aggregate	Diesel	0.001581	0.001902	0.002273	0.008411	0.012569	2.96E-05	0.000431	0.000326	1.93E-07	1.67E-07	662.943	0	124.0421	0
Statewide	2045	Industrial -	Aggregate	Aggregate	Diesel	0.060617	0.073346	0.087288	1.101248	0.546706	232.2543	0.007601	0.006993	0.002145	0.001896	7535234	4708598	5076.262	4.15E+08
Statewide	2045	Industrial -	Aggregate	Aggregate	Diesel	0.027747	0.033573	0.039955	0.512419	0.192578	136.1712	0.004388	0.004037	0.001258	0.001111	4417926	1286998	1526.937	2.16E+08
Statewide	2045	Light Comn	Aggregate	Aggregate	Diesel	0.019248	0.022941	0.027711	0.255192	0.184952	32.31576	0.001391	0.001487	0.000409	0.000271	1077763	973393	1392.608	36015539
Statewide	2045	Light Comn	Aggregate	Aggregate	Diesel	0.09298	0.111486	0.133729	0.868253	0.945484	151.7374	0.015339	0.019552	0.001728	0.001261	5015205	1959583	17091.54	64666232
Statewide	2045	Light Comn	Aggregate	Aggregate	Diesel	0.000441	0.000529	0.000634	0.004343	0.004851	0.785447	8.31E-05	0.000107	8.85E-06	6.38E-06	25364.72	19658.9	509.6487	747038.2
Statewide	2045	Light Comn	Aggregate	Aggregate	Diesel	0.052963	0.063477	0.07618	0.505929	0.51753	83.80532	0.008068	0.010216	0.000964	0.000697	2772867	1022818	8899.746	37844251
Statewide	2045	Light Comn	Aggregate	Aggregate	Diesel	0.098091	0.11713	0.141173	1.194065	0.977736	167.7849	0.00984	0.011508	0.002064	0.001403	5579747	3838687	10138.61	1.77E+08
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.016539	0.020012	0.023816	0.357031	0.157047	123.9603	0.003045	0.002801	0.001146	0.001012	4021755	700800.3	1753.977	1.55E+08
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.06737	0.081517	0.097012	0.92403	0.520615	293.1296	0.021597	0.01987	0.002708	0.002392	9510268	2761561	5276.69	6.38E+08
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.158721	0.192052	0.228558	2.430426	1.168484	723.9329	0.042467	0.03907	0.006688	0.005909	23487206	4988191	9719.588	1.06E+09
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.227944	0.275812	0.328239	4.42901	1.497545	1304.326	0.032052	0.029488	0.012052	0.010646	42317436	13509470	18891.25	2.13E+09
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.112068	0.135603	0.161378	1.714662	0.561933	489.9987	0.023542	0.021659	0.004527	0.003999	15897469	3990914	6107.207	7.51E+08
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.002343	0.002818	0.003368	0.01033	0.017786	4.13E-05	0.000602	0.000455	2.55E-07	2.2E-07	873.6314	0	142.6709	0
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.002874	0.003457	0.004131	0.016836	0.021688	5.19E-05	0.000756	0.000571	3.75E-07	3.23E-07	1283.788	0	992.43	0
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.001047	0.001251	0.001507	0.012479	0.010813	1.495301	0.000132	0.000106	1.94E-05	1.25E-05	49656.89	35875.85	88.49592	1183903
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.00029	0.000349	0.000417	0.001192	0.002207	5.09E-06	7.42E-05	5.61E-05	3.03E-08	2.61E-08	103.7858	0	41.94958	0
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.002071	0.002491	0.002977	0.008501	0.01574	3.63E-05	0.000529	0.0004	2.16E-07	1.86E-07	740.1105	0	65.79	0
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.0062	0.007457	0.008912	0.036682	0.046775	0.000112	0.001632	0.001233	8.13E-07	7.01E-07	2787.908	0	640.3991	0
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.00055	0.000662	0.000791	0.00226	0.004184	9.66E-06	0.000141	0.000106	5.74E-08	4.94E-08	196.7415	0	26.2	0
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.000901	0.001084	0.001295	0.0037	0.00685	1.58E-05	0.00023	0.000174	9.4E-08	8.1E-08	322.0845	0	62.76784	0
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.001966	0.002365	0.002826	0.012405	0.01481	3.57E-05	0.000521	0.000394	2.69E-07	2.32E-07	923.4457	0	574.02	0
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.013336	0.016041	0.019171	0.070126	0.100888	0.000238	0.003474	0.002625	1.62E-06	1.39E-06	5549.734	0	1700.307	0
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.000367	0.000441	0.000527	0.001505	0.002786	6.43E-06	9.37E-05	7.08E-05	3.82E-08	3.29E-08	131.013	0	16.49757	0
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.031028	0.037316	0.044604	0.198679	0.235075	0.661514	0.00816	0.006168	1.28E-05	9.08E-06	36118.5	13004.95	5043.514	481183.1
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.102277	0.123016	0.147024	0.419873	0.777367	0.001794	0.026142	0.019752	1.07E-05	9.19E-06	36553.51	0	6482.191	0
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.009941	0.011957	0.01429	0.040811	0.075559	0.000174	0.002541	0.00192	1.04E-06	8.93E-07	3552.933	0	485.0618	0

Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.0108	0.01299	0.015525	0.049638	0.081923	0.000191	0.002783	0.002103	1.21E-06	1.04E-06	4129.988	0	648.3484	0
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.062645	0.0758	0.090209	1.127155	0.473607	276.0451	0.008601	0.007913	0.00255	0.002253	8955980	3166933	4300.535	3.93E+08
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.384015	0.464658	0.552981	3.901946	2.963812	1659.337	0.055912	0.051439	0.01533	0.013543	53835366	6740703	4501.073	2.73E+09
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.074687	0.090371	0.107549	1.283114	0.617359	369.7778	0.017515	0.016114	0.003417	0.003018	11997034	3220494	6508.462	5.55E+08
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.015071	0.018236	0.021702	0.401773	0.123891	86.94614	0.003184	0.002929	0.000803	0.00071	2820872	1011906	2309.962	1.31E+08
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.009185	0.011114	0.013227	0.220625	0.083753	50.60063	0.001861	0.001712	0.000468	0.000413	1641682	675406.5	1308.809	88858304
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.050359	0.060934	0.072517	1.292804	0.579411	225.5448	0.012208	0.011231	0.002084	0.001841	7317551	4589712	12041.72	3.69E+08
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.03423	0.041418	0.049291	1.43598	0.570819	244.9076	0.006738	0.006199	0.002263	0.001999	7945759	3794164	12131.13	3.81E+08
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.0472	0.057112	0.067968	0.455267	0.349427	144.2387	0.013136	0.012085	0.001332	0.001177	4679667	915275.9	1072.543	2.27E+08
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.454975	0.55052	0.655164	6.743332	2.010391	1992.399	0.06147	0.056553	0.018407	0.016262	64641201	17093894	15722.7	3.46E+09
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.272724	0.329996	0.392722	3.115818	1.716161	1296.757	0.066832	0.061485	0.011981	0.010584	42071864	4586316	8833.763	1.68E+09
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.039449	0.047733	0.056806	1.428968	0.70645	237.478	0.0058	0.005336	0.002194	0.001938	7704714	6070019	15731.2	3.97E+08
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.00348	0.004211	0.005012	0.068491	0.035288	27.25774	0.000858	0.000789	0.000252	0.000222	884347.3	215298.9	722.3944	56671620
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.411721	0.498182	0.592878	10.3051	4.393328	1820.14	0.069044	0.06352	0.016816	0.014856	59052422	31462084	47448.77	3.08E+09
Statewide	2046	Constructic	Aggregate	Aggregate	Diesel	0.02184	0.026426	0.031449	0.366565	0.269615	74.90643	0.006875	0.006325	0.000692	0.000611	2430256	1145606	2850.483	90072830
Statewide	2046	Industrial -	Aggregate	Aggregate	Diesel	0.016952	0.020512	0.024411	0.653056	0.378394	115.2914	0.002301	0.002117	0.001065	0.000941	3740503	3600301	10691.69	2.26E+08
Statewide	2046	Industrial -	Aggregate	Aggregate	Diesel	0.122918	0.148731	0.177002	3.097186	1.195152	485.4233	0.019541	0.017977	0.004484	0.003962	15749025	16849380	20056.93	1.51E+09
Statewide	2046	Industrial -	Aggregate	Aggregate	Diesel	0.007905	0.009508	0.011363	0.0386	0.059892	0.00014	0.002046	0.001546	9.16E-07	7.89E-07	3138.426	0	1463.476	0
Statewide	2046	Industrial -	Aggregate	Aggregate	Diesel	0.006333	0.007617	0.009103	0.030815	0.049515	0.000116	0.001686	0.001274	7.32E-07	6.31E-07	2508.831	0	307.7817	0
Statewide	2046	Industrial -	Aggregate	Aggregate	Diesel	0.001589	0.001911	0.002284	0.008458	0.012633	2.97E-05	0.000433	0.000327	1.94E-07	1.68E-07	666.5307	0	124.7628	0
Statewide	2046	Industrial -	Aggregate	Aggregate	Diesel	0.060922	0.073716	0.087728	1.111533	0.548876	234.4455	0.007494	0.006894	0.002166	0.001914	7606327	4753023	5106.023	4.19E+08
Statewide	2046	Industrial -	Aggregate	Aggregate	Diesel	0.027776	0.033609	0.039998	0.516834	0.192992	137.456	0.004275	0.003933	0.00127	0.001122	4459608	1299140	1535.889	2.18E+08
Statewide	2046	Light Comn	Aggregate	Aggregate	Diesel	0.019248	0.02294	0.02771	0.25519	0.184946	32.31503	0.001391	0.001486	0.000409	0.000271	1077740	973393	1392.588	36015539
Statewide	2046	Light Comn	Aggregate	Aggregate	Diesel	0.092978	0.111483	0.133725	0.868242	0.945465	151.7349	0.015338	0.019552	0.001728	0.001261	5015123	1959583	17091.23	64666232
Statewide	2046	Light Comn	Aggregate	Aggregate	Diesel	0.000441	0.000529	0.000634	0.004343	0.004852	0.785571	8.32E-05	0.000107	8.85E-06	6.38E-06	25368.79	19658.9	509.7489	747038.2
Statewide	2046	Light Comn	Aggregate	Aggregate	Diesel	0.052963	0.063476	0.076179	0.505928	0.517527	83.80495	0.008068	0.010216	0.000964	0.000697	2772855	1022818	8899.736	37844251
Statewide	2046	Light Comn	Aggregate	Aggregate	Diesel	0.098093	0.117133	0.141176	1.194073	0.977752	167.7869	0.00984	0.011508	0.002064	0.001403	5579814	3838687	10138.78	1.77E+08
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.016636	0.020129	0.023956	0.360178	0.156729	125.1189	0.003022	0.00278	0.001156	0.001021	4059345	707350.4	1764.156	1.56E+08
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.066655	0.080652	0.095983	0.924958	0.509431	295.8694	0.020862	0.019193	0.002733	0.002415	9599157	2787372	5307.311	6.44E+08
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.157612	0.19071	0.226961	2.434806	1.146239	730.6993	0.04077	0.037509	0.006751	0.005964	23706733	5034814	9775.991	1.07E+09
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.229331	0.277491	0.330237	4.468842	1.500053	1316.518	0.031781	0.029238	0.012165	0.010745	42712962	13635739	19000.88	2.15E+09
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.11219	0.13575	0.161554	1.729266	0.547029	494.5786	0.023047	0.021203	0.004569	0.004037	16046058	4028215	6142.648	7.58E+08
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.00234	0.002815	0.003364	0.010322	0.017765	4.13E-05	0.000601	0.000454	2.55E-07	2.19E-07	872.798	0	142.5605	0
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.002874	0.003456	0.004131	0.016835	0.021684	5.19E-05	0.000756	0.000571	3.75E-07	3.23E-07	1283.644	0	992.3799	0
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.00105	0.001254	0.001511	0.012491	0.010835	1.495301	0.000133	0.000107	1.94E-05	1.25E-05	49657.9	35875.85	88.70782	1183903
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.00029	0.000349	0.000417	0.001192	0.002207	5.09E-06	7.42E-05	5.61E-05	3.03E-08	2.61E-08	103.7881	0	41.95054	0
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.002072	0.002493	0.002979	0.008508	0.015752	3.64E-05	0.00053	0.0004	2.16E-07	1.86E-07	740.6729	0	65.84	0
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.006198	0.007455	0.00891	0.036675	0.046763	0.000112	0.001632	0.001233	8.13E-07	7.01E-07	2787.332	0	640.2694	0
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.00055	0.000662	0.000791	0.002259	0.004182	9.65E-06	0.000141	0.000106	5.74E-08	4.94E-08	196.6664	0	26.19	0
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.000898	0.00108	0.001291	0.003688	0.006828	1.58E-05	0.00023	0.000173	9.37E-08	8.07E-08	321.0449	0	62.56525	0
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.001966	0.002365	0.002827	0.012406	0.014811	3.58E-05	0.000521	0.000394	2.69E-07	2.32E-07	923.5261	0	574.07	0
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.013346	0.016053	0.019185	0.070177	0.100963	0.000239	0.003476	0.002626	1.62E-06	1.4E-06	5553.805	0	1701.516	0
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.000367	0.000441	0.000527	0.001506	0.002788	6.43E-06	9.37E-05	7.08E-05	3.82E-08	3.29E-08	131.0855	0	16.5067	0
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.031028	0.037316	0.044604	0.19868	0.235075	0.661514	0.00816	0.006168	1.28E-05	9.08E-06	36118.55	13004.95	5043.529	481183.1
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.102384	0.123146	0.147179	0.420314	0.778184	0.001796	0.026169	0.019772	1.07E-05	9.2E-06	36591.9	0	6488.998	0
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.00994	0.011956	0.014289	0.040808	0.075553	0.000174	0.002541	0.00192	1.04E-06	8.93E-07	3552.685	0	485.0279	0
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.010826	0.013022	0.015563	0.049773	0.082122	0.000191	0.00279	0.002108	1.21E-06	1.04E-06	4140.735	0	650.6054	0
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.063047	0.076287	0.090788	1.137514	0.475871	278.6252	0.00857	0.007885	0.002574	0.002274	9039688	3196533	4325.491	3.96E+08
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.3867	0.467907	0.556847	3.935523	2.970141	1674.846	0.0558	0.051336	0.015473	0.01367	54338547	6803706	4527.193	2.76E+09
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.074383	0.090003	0.107111	1.291609	0.610424	373.234	0.016958	0.015601	0.003449	0.003046	12109167	3250595	6546.231	5.6E+08
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.014969	0.018112	0.021555	0.405422	0.122256	87.7588	0.003042	0.002798	0.000811	0.000716	2847238	1021364	2323.367	1.32E+08
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.009198	0.011129	0.013245	0.22254	0.08342	51.07357	0.00179	0.001647	0.000472	0.000417	1657026	681719.3	1316.404	89688831
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.050128	0.060655	0.072185	1.303862	0.579215	227.6528	0.011835	0.010888	0.002103	0.001858	7385946	4632611	12111.59	3.72E+08
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.034183	0.041361	0.049223	1.448986	0.572634	247.1967	0.006443	0.005927	0.002284	0.002018	8020025	3829627	12201.52	3.85E+08
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.04711	0.057003	0.067838	0.455941	0.341724	145.5869	0.01284	0.011813	0.001345	0.001188	4723406	923830.6	1078.767	2.29E+08

Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.457301	0.553334	0.658514	6.80409	1.995621	2011.022	0.060647	0.055795	0.018579	0.016414	65245380	17253665	15813.94	3.49E+09
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.26995	0.32664	0.388729	3.097802	1.664313	1308.878	0.063802	0.058698	0.012093	0.010683	42465095	4629182	8885.026	1.7E+09
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.039689	0.048023	0.057152	1.442172	0.711468	239.6977	0.005724	0.005266	0.002215	0.001956	7776727	6126753	15822.49	4.01E+08
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.003461	0.004188	0.004984	0.068886	0.035064	27.51251	0.000833	0.000767	0.000254	0.000225	892613	217311.2	726.5865	57201310
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.413123	0.499879	0.594897	10.39785	4.408195	1837.152	0.067403	0.06201	0.016973	0.014995	59604364	31756149	47724.12	3.11E+09
Statewide	2047	Constructic	Aggregate	Aggregate	Diesel	0.021556	0.026082	0.03104	0.369259	0.267162	75.60655	0.006493	0.005973	0.000698	0.000617	2452971	1156313	2867.025	90914710
Statewide	2047	Industrial -	Aggregate	Aggregate	Diesel	0.017096	0.020686	0.024618	0.659148	0.381795	116.369	0.002302	0.002118	0.001075	0.00095	3775464	3633952	10753.74	2.29E+08
Statewide	2047	Industrial -	Aggregate	Aggregate	Diesel	0.123218	0.149093	0.177434	3.124469	1.197421	489.9604	0.018899	0.017388	0.004526	0.003999	15896226	17006865	20173.33	1.52E+09
Statewide	2047	Industrial -	Aggregate	Aggregate	Diesel	0.007912	0.009517	0.011374	0.038627	0.059948	0.000141	0.002048	0.001548	9.16E-07	7.89E-07	3140.864	0	1464.613	0
Statewide	2047	Industrial -	Aggregate	Aggregate	Diesel	0.006342	0.007628	0.009117	0.030858	0.049589	0.000116	0.001689	0.001276	7.33E-07	6.31E-07	2512.427	0	308.176	0
Statewide	2047	Industrial -	Aggregate	Aggregate	Diesel	0.001605	0.00193	0.002307	0.008548	0.012759	3E-05	0.000438	0.000331	1.96E-07	1.69E-07	673.4029	0	126.0949	0
Statewide	2047	Industrial -	Aggregate	Aggregate	Diesel	0.061235	0.074095	0.088179	1.121359	0.552101	236.6368	0.007354	0.006765	0.002186	0.001931	7677421	4797448	5135.654	4.23E+08
Statewide	2047	Industrial -	Aggregate	Aggregate	Diesel	0.027811	0.033652	0.040048	0.521185	0.191699	138.7407	0.004172	0.003838	0.001282	0.001132	4501291	1311283	1544.802	2.2E+08
Statewide	2047	Light Comn	Aggregate	Aggregate	Diesel	0.019251	0.022944	0.027715	0.255206	0.184974	32.31874	0.001392	0.001487	0.000409	0.000271	1077861	973393	1392.838	36015539
Statewide	2047	Light Comn	Aggregate	Aggregate	Diesel	0.092978	0.111483	0.133726	0.868245	0.94547	151.7356	0.015338	0.019552	0.001728	0.001261	5015144	1959583	17091.33	64666232
Statewide	2047	Light Comn	Aggregate	Aggregate	Diesel	0.000441	0.000529	0.000634	0.004344	0.004853	0.785679	8.32E-05	0.000107	8.85E-06	6.38E-06	25372.31	19658.9	509.809	747038.2
Statewide	2047	Light Comn	Aggregate	Aggregate	Diesel	0.052961	0.063474	0.076177	0.50592	0.517514	83.80325	0.008068	0.010215	0.000964	0.000697	2772799	1022818	8899.516	37844251
Statewide	2047	Light Comn	Aggregate	Aggregate	Diesel	0.098091	0.117131	0.141174	1.194066	0.977742	167.7856	0.00984	0.011508	0.002064	0.001403	5579771	3838687	10138.59	1.77E+08
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.016718	0.020228	0.024074	0.363405	0.156877	126.2775	0.002994	0.002754	0.001167	0.001031	4096935	713900.6	1774.29	1.58E+08
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.065018	0.078672	0.093626	0.884674	0.47825	298.6092	0.018951	0.017435	0.002759	0.002437	9688047	2813183	5337.799	6.5E+08
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.154346	0.186759	0.222258	2.394405	1.09558	737.4656	0.037319	0.034333	0.006814	0.006019	23926259	5081437	9832.15	1.08E+09
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.230544	0.278958	0.331983	4.502859	1.49859	1328.709	0.031379	0.028868	0.012278	0.010845	43108488	13762007	19110.03	2.17E+09
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.110772	0.134034	0.159512	1.732043	0.52057	499.1584	0.021799	0.020055	0.004612	0.004074	16194646	4065517	6177.934	7.65E+08
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.002339	0.002813	0.003362	0.010316	0.017756	4.12E-05	0.000601	0.000454	2.55E-07	2.19E-07	872.3005	0	142.4771	0
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.002874	0.003456	0.004131	0.016834	0.021684	5.19E-05	0.000756	0.000571	3.75E-07	3.23E-07	1283.597	0	992.28	0
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.001052	0.001257	0.001515	0.012501	0.010853	1.495301	0.000134	0.000107	1.94E-05	1.25E-05	49658.76	35875.85	88.88767	1183903
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.000291	0.00035	0.000418	0.001194	0.00221	5.1E-06	7.43E-05	5.62E-05	3.03E-08	2.61E-08	103.9345	0	42.00969	0
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.002071	0.00249	0.002976	0.0085	0.015737	3.63E-05	0.000529	0.0004	2.16E-07	1.86E-07	739.9979	0	65.78	0
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.006199	0.007456	0.008911	0.036681	0.046769	0.000112	0.001632	0.001233	8.13E-07	7.01E-07	2787.722	0	640.3597	0
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.00055	0.000662	0.000791	0.00226	0.004184	9.66E-06	0.000141	0.000106	5.74E-08	4.94E-08	196.7415	0	26.2	0
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.000895	0.001077	0.001287	0.003676	0.006806	1.57E-05	0.000229	0.000173	9.34E-08	8.04E-08	320.0251	0	62.36653	0
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.001966	0.002365	0.002827	0.012406	0.014811	3.58E-05	0.000521	0.000394	2.69E-07	2.32E-07	923.5422	0	574.08	0
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.013353	0.016061	0.019196	0.070216	0.101016	0.000239	0.003478	0.002628	1.62E-06	1.4E-06	5556.838	0	1702.513	0
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.000366	0.000441	0.000527	0.001504	0.002784	6.43E-06	9.36E-05	7.07E-05	3.82E-08	3.29E-08	130.9203	0	16.48591	0
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.031028	0.037316	0.044604	0.198679	0.235074	0.661514	0.00816	0.006168	1.28E-05	9.08E-06	36118.5	13004.95	5043.511	481183.1
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.102494	0.123278	0.147337	0.420767	0.779022	0.001798	0.026198	0.019794	1.07E-05	9.21E-06	36631.33	0	6495.991	0
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.009934	0.011949	0.014281	0.040782	0.075506	0.000174	0.002539	0.001918	1.04E-06	8.92E-07	3550.449	0	484.7227	0
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.010855	0.013056	0.015604	0.049913	0.082337	0.000192	0.002797	0.002113	1.21E-06	1.04E-06	4152.089	0	652.8017	0
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.063181	0.076449	0.090981	1.146282	0.476791	281.2053	0.008363	0.007694	0.002598	0.002295	9123396	3226134	4350.339	4E+08
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.389071	0.470776	0.560263	3.950003	2.972482	1690.356	0.055018	0.050617	0.015617	0.013796	54841727	6866709	4553.199	2.78E+09
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.073364	0.088771	0.105644	1.26129	0.590587	376.6902	0.015635	0.014384	0.00348	0.003074	12221299	3280696	6583.836	5.65E+08
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.014813	0.017923	0.02133	0.4083	0.119859	88.57145	0.002913	0.00268	0.000818	0.000723	2873603	1030822	2336.714	1.33E+08
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.009189	0.011119	0.013233	0.224394	0.082951	51.54652	0.001722	0.001584	0.000476	0.000421	1672370	688032.1	1323.966	90519359
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.049065	0.059369	0.070654	1.307275	0.572389	229.7609	0.011023	0.010141	0.002123	0.001875	7454341	4675509	12181.17	3.76E+08
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.034039	0.041187	0.049016	1.46179	0.574151	249.4858	0.006167	0.005674	0.002306	0.002036	8094291	3865090	12271.62	3.88E+08
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.045905	0.055545	0.066103	0.435467	0.319554	146.935	0.01169	0.010755	0.001357	0.001199	4767145	932385.4	1084.964	2.31E+08
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.459366	0.555833	0.661487	6.836441	1.976656	2029.644	0.059224	0.054486	0.018751	0.016566	65849559	17413436	15904.79	3.53E+09
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.268317	0.324664	0.386377	3.053302	1.614175	1320.998	0.06121	0.056313	0.012205	0.010782	42858326	4672049	8936.066	1.72E+09
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.039884	0.04826	0.057433	1.455224	0.715895	241.9173	0.005608	0.00516	0.002235	0.001974	7848740	6183488	15913.38	4.04E+08
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.003392	0.004104	0.004884	0.069365	0.033672	27.76728	0.000786	0.000723	0.000257	0.000227	900878.7	219323.5	730.7604	57731000
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.412824	0.499518	0.594467	10.47721	4.40766	1854.164	0.064961	0.059764	0.01713	0.015133	60156306	32050214	47998.27	3.14E+09
Statewide	2048	Constructic	Aggregate	Aggregate	Diesel	0.020837	0.025213	0.030005	0.369376	0.259664	76.30667	0.00592	0.005446	0.000705	0.000623	2475686	1167021	2883.495	91756589
Statewide	2048	Industrial -	Aggregate	Aggregate	Diesel	0.017176	0.020782	0.024733	0.664932	0.38473	117.4466	0.002273	0.002091	0.001085	0.000959	3810425	3667602	10815.51	2.31E+08
Statewide	2048	Industrial -	Aggregate	Aggregate	Diesel	0.123417	0.149335	0.177721	3.151602	1.198287	494.4975	0.018356	0.016887	0.004568	0.004036	16043426	17164350	20289.21	1.54E+09
Statewide	2048	Industrial -	Aggregate	Aggregate	Diesel	0.007921	0.009527	0.011386	0.038658	0.060013	0.000141	0.00205	0.001549	9.17E-07	7.9E-07	3143.733	0	1465.952	0

Statewide	2048	Industrial -	Aggregate	Aggregate	Diesel	0.006347	0.007634	0.009124	0.030879	0.049627	0.000116	0.00169	0.001277	7.34E-07	6.32E-07	2514.238	0	308.3518	0
Statewide	2048	Industrial -	Aggregate	Aggregate	Diesel	0.001616	0.001943	0.002323	0.008606	0.012847	3.02E-05	0.000441	0.000333	1.98E-07	1.7E-07	678.0252	0	126.9569	0
Statewide	2048	Industrial -	Aggregate	Aggregate	Diesel	0.061408	0.074303	0.088427	1.124951	0.552583	238.8281	0.007104	0.006535	0.002206	0.001949	7748515	4841872	5165.156	4.27E+08
Statewide	2048	Industrial -	Aggregate	Aggregate	Diesel	0.027889	0.033745	0.040159	0.525431	0.191043	140.0255	0.004046	0.003723	0.001294	0.001143	4542973	1323426	1553.676	2.22E+08
Statewide	2048	Light Comn	Aggregate	Aggregate	Diesel	0.019249	0.022941	0.027712	0.255194	0.184954	32.31608	0.001391	0.001487	0.000409	0.000271	1077774	973393	1392.638	36015539
Statewide	2048	Light Comn	Aggregate	Aggregate	Diesel	0.09298	0.111485	0.133729	0.868252	0.945482	151.7372	0.015339	0.019552	0.001728	0.001261	5015197	1959583	17091.53	64666232
Statewide	2048	Light Comn	Aggregate	Aggregate	Diesel	0.000441	0.000529	0.000634	0.004345	0.004855	0.785942	8.32E-05	0.000107	8.85E-06	6.38E-06	25380.94	19658.9	510.0388	747038.2
Statewide	2048	Light Comn	Aggregate	Aggregate	Diesel	0.052962	0.063475	0.076178	0.505924	0.517518	83.80382	0.008068	0.010215	0.000964	0.000697	2772818	1022818	8899.686	37844251
Statewide	2048	Light Comn	Aggregate	Aggregate	Diesel	0.098092	0.117133	0.141176	1.194072	0.977749	167.7866	0.00984	0.011508	0.002064	0.001403	5579803	3838687	10138.76	1.77E+08
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.016817	0.020348	0.024216	0.366462	0.157922	127.4361	0.002957	0.002721	0.001178	0.00104	4134525	720450.7	1784.38	1.59E+08
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.064497	0.078041	0.092875	0.888689	0.469791	301.349	0.018245	0.016786	0.002784	0.00246	9776936	2838995	5368.155	6.56E+08
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.154323	0.186731	0.222226	2.411627	1.082308	744.232	0.036466	0.033549	0.006876	0.006074	24145786	5128060	9888.066	1.09E+09
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.232295	0.281077	0.334505	4.544131	1.505549	1340.9	0.031457	0.02894	0.01239	0.010944	43504014	13888275	19218.71	2.19E+09
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.111006	0.134317	0.159848	1.747358	0.513529	503.7383	0.021467	0.01975	0.004654	0.004111	16343234	4102819	6213.069	7.72E+08
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.002339	0.002813	0.003362	0.010316	0.017754	4.12E-05	0.000601	0.000454	2.55E-07	2.19E-07	872.302	0	142.4873	0
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.002873	0.003456	0.00413	0.016833	0.021682	5.19E-05	0.000756	0.000571	3.75E-07	3.23E-07	1283.503	0	992.2599	0
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.001055	0.00126	0.001518	0.012511	0.010871	1.495301	0.000134	0.000108	1.94E-05	1.25E-05	49659.6	35875.85	89.06348	1183903
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.000291	0.00035	0.000418	0.001194	0.00221	5.1E-06	7.43E-05	5.61E-05	3.03E-08	2.61E-08	103.9074	0	41.99875	0
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.002071	0.002492	0.002978	0.008504	0.015744	3.63E-05	0.000529	0.0004	2.16E-07	1.86E-07	740.3354	0	65.81	0
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.006199	0.007456	0.008911	0.036679	0.046767	0.000112	0.001632	0.001233	8.13E-07	7.01E-07	2787.591	0	640.3288	0
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.000549	0.000661	0.00079	0.002255	0.004174	9.64E-06	0.00014	0.000106	5.73E-08	4.93E-08	196.2909	0	26.14	0
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.000893	0.001074	0.001284	0.003666	0.006788	1.57E-05	0.000228	0.000172	9.31E-08	8.02E-08	319.1715	0	62.20016	0
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.001966	0.002365	0.002827	0.012406	0.014811	3.58E-05	0.000521	0.000394	2.69E-07	2.32E-07	923.51	0	574.06	0
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.01336	0.016069	0.019205	0.070256	0.101066	0.000239	0.00348	0.002629	1.62E-06	1.4E-06	5559.849	0	1703.552	0
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.000367	0.000442	0.000528	0.001508	0.002792	6.45E-06	9.39E-05	7.09E-05	3.83E-08	3.3E-08	131.2992	0	16.53362	0
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.031028	0.037316	0.044604	0.19868	0.235076	0.661514	0.00816	0.006168	1.28E-05	9.08E-06	36118.56	13004.95	5043.534	481183.1
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.102607	0.123413	0.147499	0.421228	0.779877	0.0018	0.026226	0.019815	1.07E-05	9.22E-06	36671.51	0	6503.116	0
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.009939	0.011954	0.014287	0.0408	0.075539	0.000174	0.00254	0.001919	1.04E-06	8.93E-07	3552.025	0	484.9378	0
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.010895	0.013104	0.015662	0.0501	0.082643	0.000193	0.002807	0.002121	1.22E-06	1.05E-06	4167.58	0	655.2667	0
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.063666	0.077036	0.09168	1.156652	0.48039	283.7854	0.008392	0.00772	0.002622	0.002316	9207105	3255734	4375.08	4.04E+08
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.392018	0.474341	0.564506	3.985563	2.976657	1705.865	0.05498	0.050581	0.01576	0.013923	55344907	6929712	4579.094	2.81E+09
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.07337	0.088777	0.105652	1.271615	0.589326	380.1464	0.015252	0.014032	0.003512	0.003103	12333431	3310797	6621.28	5.7E+08
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.014799	0.017907	0.021311	0.411966	0.119351	89.38411	0.002844	0.002616	0.000826	0.00073	2899969	1040280	2350.003	1.35E+08
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.009193	0.011124	0.013238	0.226419	0.082606	52.01946	0.001676	0.001542	0.000481	0.000425	1687714	694344.9	1331.495	91349886
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.048701	0.058929	0.07013	1.31822	0.572729	231.869	0.010597	0.009749	0.002142	0.001892	7522735	4718408	12250.45	3.79E+08
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.034137	0.041306	0.049158	1.475068	0.577552	251.7748	0.006027	0.005545	0.002327	0.002055	8168557	3900552	12341.41	3.92E+08
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.045814	0.055435	0.065972	0.437762	0.310125	148.2832	0.011252	0.010352	0.00137	0.00121	4810885	940940.2	1091.135	2.33E+08
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.462334	0.559424	0.665761	6.897704	1.972734	2048.266	0.058708	0.054011	0.018923	0.016718	66453737	17573206	15995.24	3.56E+09
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.268061	0.324354	0.386008	3.06635	1.596385	1333.118	0.059701	0.054924	0.012317	0.010881	43251557	4714916	8986.887	1.73E+09
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.04009	0.048509	0.05773	1.468369	0.720694	244.1369	0.005579	0.005132	0.002256	0.001993	7920754	6240222	16003.88	4.08E+08
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.003394	0.004106	0.004887	0.069996	0.033422	28.02204	0.000779	0.000717	0.000259	0.000229	909144.3	221335.9	734.9163	58260689
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.414439	0.501471	0.596792	10.57019	4.431843	1871.176	0.063906	0.058793	0.017288	0.015272	60708249	32344279	48271.25	3.17E+09
Statewide	2049	Constructic	Aggregate	Aggregate	Diesel	0.020729	0.025082	0.029849	0.37251	0.258617	77.0068	0.005664	0.005211	0.000711	0.000629	2498401	1177729	2899.893	92598468
Statewide	2049	Industrial -	Aggregate	Aggregate	Diesel	0.017326	0.020964	0.024949	0.671033	0.388097	118.5242	0.002284	0.002102	0.001095	0.000967	3845386	3701253	10877.02	2.33E+08
Statewide	2049	Industrial -	Aggregate	Aggregate	Diesel	0.124062	0.150115	0.178649	3.180109	1.203187	499.0346	0.018105	0.016657	0.00461	0.004073	16190627	17321836	20404.6	1.55E+09
Statewide	2049	Industrial -	Aggregate	Aggregate	Diesel	0.007928	0.009536	0.011397	0.038686	0.060069	0.000141	0.002052	0.001551	9.18E-07	7.91E-07	3146.267	0	1467.134	0
Statewide	2049	Industrial -	Aggregate	Aggregate	Diesel	0.006347	0.007634	0.009124	0.030877	0.049625	0.000116	0.00169	0.001277	7.34E-07	6.32E-07	2514.111	0	308.3224	0
Statewide	2049	Industrial -	Aggregate	Aggregate	Diesel	0.001621	0.00195	0.002331	0.008629	0.012889	3.03E-05	0.000442	0.000334	1.98E-07	1.71E-07	679.988	0	127.2686	0
Statewide	2049	Industrial -	Aggregate	Aggregate	Diesel	0.061838	0.074823	0.089046	1.135156	0.556585	241.0194	0.007016	0.006454	0.002226	0.001967	7819608	4886297	5194.531	4.31E+08
Statewide	2049	Industrial -	Aggregate	Aggregate	Diesel	0.028074	0.033969	0.040426	0.530196	0.191763	141.3103	0.004052	0.003728	0.001306	0.001153	4584656	1335568	1562.512	2.24E+08
Statewide	2049	Light Comn	Aggregate	Aggregate	Diesel	0.019249	0.022941	0.027712	0.255192	0.184954	32.31608	0.001391	0.001487	0.000409	0.000271	1077774	973393	1392.588	36015539
Statewide	2049	Light Comn	Aggregate	Aggregate	Diesel	0.092979	0.111485	0.133728	0.868251	0.945478	151.7366	0.015339	0.019552	0.001728	0.001261	5015179	1959583	17091.5	64666232
Statewide	2049	Light Comn	Aggregate	Aggregate	Diesel	0.000441	0.000529	0.000634	0.004345	0.004855	0.785923	8.32E-05	0.000107	8.85E-06	6.38E-06	25380.31	19658.9	510.0189	747038.2
Statewide	2049	Light Comn	Aggregate	Aggregate	Diesel	0.052963	0.063476	0.076179	0.505928	0.517526	83.80486	0.008068	0.010216	0.000964	0.000697	2772852	1022818	8899.746	37844251
Statewide	2049	Light Comn	Aggregate	Aggregate	Diesel	0.098091	0.117131	0.141173	1.194063	0.977737	167.7849	0.00984	0.011508	0.002064	0.001403	5579747	3838687	10138.54	1.77E+08

Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.016945	0.020503	0.0244	0.369794	0.158578	128.5947	0.002958	0.002721	0.001188	0.00105	4172115	727000.8	1794.428	1.61E+08
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.064509	0.078055	0.092892	0.895843	0.463503	304.0888	0.017891	0.01646	0.00281	0.002482	9865825	2864806	5398.382	6.62E+08
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.154365	0.186782	0.222286	2.429565	1.070231	750.9983	0.035668	0.032814	0.006939	0.00613	24365313	5174682	9943.744	1.1E+09
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.234025	0.28317	0.336996	4.584878	1.512965	1353.091	0.031395	0.028884	0.012503	0.011044	43899541	14014543	19326.93	2.21E+09
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.111361	0.134747	0.16036	1.762227	0.508179	508.3181	0.021112	0.019423	0.004696	0.004149	16491822	4140120	6248.054	7.79E+08
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.00234	0.002815	0.003364	0.010324	0.017765	4.13E-05	0.000601	0.000454	2.55E-07	2.19E-07	872.9009	0	142.5927	0
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.002873	0.003456	0.00413	0.016832	0.021681	5.19E-05	0.000756	0.000571	3.74E-07	3.23E-07	1283.437	0	992.24	0
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.001057	0.001262	0.001521	0.012519	0.010887	1.495301	0.000135	0.000108	1.94E-05	1.25E-05	49660.33	35875.85	89.21496	1183903
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.00029	0.000349	0.000418	0.001192	0.002208	5.1E-06	7.42E-05	5.61E-05	3.03E-08	2.61E-08	103.8022	0	41.95622	0
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.002071	0.002491	0.002977	0.008503	0.015742	3.63E-05	0.000529	0.0004	2.16E-07	1.86E-07	740.2229	0	65.8	0
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.006199	0.007456	0.008912	0.036681	0.046771	0.000112	0.001632	0.001233	8.13E-07	7.01E-07	2787.778	0	640.3717	0
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.00055	0.000662	0.000791	0.002258	0.004181	9.65E-06	0.000141	0.000106	5.74E-08	4.94E-08	196.5913	0	26.18	0
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.000889	0.00107	0.001278	0.003651	0.006759	1.56E-05	0.000227	0.000172	9.27E-08	7.99E-08	317.8218	0	61.93714	0
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.001966	0.002365	0.002826	0.012405	0.014809	3.57E-05	0.000521	0.000394	2.69E-07	2.32E-07	923.4296	0	574.01	0
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.01337	0.016081	0.019219	0.070311	0.101141	0.000239	0.003482	0.002631	1.62E-06	1.4E-06	5564.125	0	1704.961	0
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.000368	0.000443	0.000529	0.001511	0.002798	6.46E-06	9.41E-05	7.11E-05	3.84E-08	3.31E-08	131.5802	0	16.569	0
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.031028	0.037316	0.044603	0.198679	0.235074	0.661514	0.00816	0.006168	1.28E-05	9.08E-06	36118.45	13004.95	5043.495	481183.1
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.10271	0.123538	0.147647	0.421652	0.780662	0.001802	0.026253	0.019835	1.07E-05	9.23E-06	36708.43	0	6509.663	0
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.00994	0.011956	0.014289	0.040807	0.075552	0.000174	0.002541	0.00192	1.04E-06	8.93E-07	3552.614	0	485.0181	0
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.010933	0.01315	0.015716	0.050279	0.082929	0.000193	0.002817	0.002129	1.22E-06	1.05E-06	4182.285	0	657.8178	0
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.064087	0.077545	0.092285	1.16671	0.482683	286.3655	0.008327	0.007661	0.002646	0.002337	9290813	3285334	4399.715	4.07E+08
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.395088	0.478057	0.568927	4.021077	2.994085	1721.374	0.055175	0.050761	0.015903	0.01405	55848087	6992715	4604.878	2.83E+09
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.073639	0.089103	0.10604	1.282946	0.589812	383.6026	0.015016	0.013814	0.003544	0.003131	12445563	3340898	6658.563	5.75E+08
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.014842	0.017959	0.021372	0.415647	0.11918	90.19676	0.002803	0.002578	0.000833	0.000736	2926335	1049738	2363.235	1.36E+08
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.009205	0.011138	0.013255	0.228466	0.082466	52.49241	0.001619	0.001489	0.000485	0.000428	1703058	700657.7	1338.993	92180414
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.048577	0.058778	0.069951	1.329322	0.574423	233.9771	0.010269	0.009447	0.002162	0.00191	7591130	4761306	12319.43	3.82E+08
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.034338	0.041549	0.049447	1.488405	0.581826	254.0639	0.005981	0.005502	0.002348	0.002074	8242824	3936015	12410.9	3.96E+08
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.045624	0.055206	0.065699	0.439276	0.29795	149.6313	0.010823	0.009957	0.001382	0.001221	4854624	949494.9	1097.279	2.35E+08
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.465465	0.563213	0.67027	6.959239	1.967768	2066.888	0.058385	0.053714	0.019095	0.01687	67057916	17732977	16085.3	3.59E+09
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.267295	0.323427	0.384905	3.079905	1.572924	1345.239	0.057819	0.053194	0.012429	0.01098	43644788	4757782	9037.49	1.75E+09
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.040385	0.048866	0.058155	1.481623	0.726793	246.3565	0.00556	0.005115	0.002276	0.002011	7992767	6296956	16094	4.12E+08
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.003391	0.004103	0.004882	0.070563	0.033029	28.27681	0.000763	0.000702	0.000261	0.000231	917410	223348.2	739.0545	58790379
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.416514	0.503982	0.59978	10.66461	4.454986	1888.188	0.063203	0.058147	0.017445	0.015411	61260191	32638344	48543.05	3.2E+09
Statewide	2050	Constructic	Aggregate	Aggregate	Diesel	0.0206	0.024926	0.029664	0.375712	0.257098	77.70692	0.005502	0.005062	0.000718	0.000634	2521115	1188436	2916.222	93440347
Statewide	2050	Industrial -	Aggregate	Aggregate	Diesel	0.017481	0.021152	0.025172	0.677134	0.391528	119.6018	0.002302	0.002118	0.001105	0.000976	3880347	3734904	10938.27	2.35E+08
Statewide	2050	Industrial -	Aggregate	Aggregate	Diesel	0.124518	0.150667	0.179306	3.207014	1.208165	503.5716	0.017701	0.016285	0.004652	0.00411	16337828	17479321	20519.49	1.56E+09
Statewide	2050	Industrial -	Aggregate	Aggregate	Diesel	0.007932	0.009541	0.011403	0.038702	0.060102	0.000141	0.002053	0.001551	9.18E-07	7.91E-07	3147.705	0	1467.805	0
Statewide	2050	Industrial -	Aggregate	Aggregate	Diesel	0.006348	0.007635	0.009125	0.03088	0.049629	0.000116	0.00169	0.001277	7.34E-07	6.32E-07	2514.339	0	308.3601	0
Statewide	2050	Industrial -	Aggregate	Aggregate	Diesel	0.001624	0.001953	0.002334	0.008637	0.012905	3.04E-05	0.000443	0.000334	1.99E-07	1.71E-07	680.7273	0	127.3758	0
Statewide	2050	Industrial -	Aggregate	Aggregate	Diesel	0.062313	0.075399	0.089731	1.14543	0.560255	243.2107	0.006995	0.006435	0.002247	0.001985	7890702	4930722	5223.78	4.35E+08
Statewide	2050	Industrial -	Aggregate	Aggregate	Diesel	0.028243	0.034173	0.040669	0.534717	0.19266	142.595	0.004018	0.003696	0.001318	0.001164	4626338	1347711	1571.31	2.26E+08
Statewide	2050	Light Comn	Aggregate	Aggregate	Diesel	0.019249	0.022941	0.027712	0.255192	0.184956	32.31624	0.001391	0.001487	0.000409	0.000271	1077779	973393	1392.558	36015539
Statewide	2050	Light Comn	Aggregate	Aggregate	Diesel	0.09298	0.111485	0.133728	0.86825	0.945479	151.7368	0.015339	0.019552	0.001728	0.001261	5015184	1959583	17091.44	64666232
Statewide	2050	Light Comn	Aggregate	Aggregate	Diesel	0.000441	0.000529	0.000634	0.004344	0.004854	0.785719	8.32E-05	0.000107	8.85E-06	6.38E-06	25373.63	19658.9	509.8688	747038.2
Statewide	2050	Light Comn	Aggregate	Aggregate	Diesel	0.052962	0.063475	0.076178	0.505923	0.517519	83.80394	0.008068	0.010215	0.000964	0.000697	2772822	1022818	8899.586	37844251
Statewide	2050	Light Comn	Aggregate	Aggregate	Diesel	0.098092	0.117132	0.141175	1.19407	0.977745	167.786	0.00984	0.011508	0.002064	0.001403	5579784	3838687	10138.72	1.77E+08

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Marin (SF)
Calendar Year: 2027
Season: Annual
Vehicle Classification: EMFAC202x Categories
Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Region	Calendar Y	Vehicle Cat	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Con	NOx_RUNE	NOx_IDLEX	NOx_STREX	NOx_TOTEX	PM2.5_RUN	PM2.5_IDLI	PM2.5_STR	PM2.5_TOT	PM2.5_PMT	PM2.5_PME	PM2.5_TOT	PM10_RUN
Marin (SF)	2027	All Other Bu	Aggregate	Aggregate	Diesel	34.6672	486580.8	486580.8	0	90093.11	0	1.212962	0.040907	0.123805	1.377674	0.026289	0.000143	0	0.026432	0.001609	0.008661	0.036702	0.027478
Marin (SF)	2027	LDA	Aggregate	Aggregate	Gasoline	102763.9	1.21E+09	1.21E+09	0	1.65E+08	0	49.12835	0	43.1976	92.32595	1.407173	0	0.328685	1.735859	2.677949	3.105113	7.51892	1.530429
Marin (SF)	2027	LDA	Aggregate	Aggregate	Diesel	612.96	5447415	5447415	0	896493.9	0	0.99268	0	0	0.99268	0.084506	0	0	0.084506	0.012009	0.014352	0.110868	0.088327
Marin (SF)	2027	LDT1	Aggregate	Aggregate	Gasoline	11079.61	1.15E+08	1.15E+08	0	16796044	0	12.28774	0	6.824059	19.1118	0.183232	0	0.04641	0.229642	0.254631	0.358708	0.842981	0.199282
Marin (SF)	2027	LDT1	Aggregate	Aggregate	Diesel	2.388514	7181.251	7181.251	0	2296.213	0	0.010496	0	0	0.010496	0.001556	0	0	0.001556	1.58E-05	2.51E-05	0.001597	0.001626
Marin (SF)	2027	LDT2	Aggregate	Aggregate	Gasoline	61844.67	7.55E+08	7.55E+08	0	99748005	0	39.89061	0	31.97137	71.86198	0.927462	0	0.205289	1.132751	1.664855	2.264194	5.061801	1.0087
Marin (SF)	2027	LDT2	Aggregate	Aggregate	Diesel	400.4402	4626450	4626450	0	637956.2	0	0.191071	0	0	0.191071	0.023324	0	0	0.023324	0.0102	0.014351	0.047874	0.024379
Marin (SF)	2027	LHD1	Aggregate	Aggregate	Gasoline	4082.733	50497334	50497334	0	19890308	0	8.053322	0.049771	12.88245	20.98554	0.083759	0	0.006074	0.089833	0.111328	1.519621	1.720781	0.091096
Marin (SF)	2027	LHD1	Aggregate	Aggregate	Diesel	2593.331	32070719	32070719	0	10667016	0	49.3081	1.713216	0	51.02132	1.226773	0.024981	0	1.251754	0.106056	0.965107	2.322917	1.282242
Marin (SF)	2027	LHD2	Aggregate	Aggregate	Gasoline	507.5103	6079015	6079015	0	2472495	0	0.870594	0.006097	1.626611	2.503302	0.008572	0	0.000528	0.0091	0.013402	0.213426	0.235927	0.009322
Marin (SF)	2027	LHD2	Aggregate	Aggregate	Diesel	1026.595	13204149	13204149	0	4222639	0	13.8135	0.625262	0	14.43877	0.410329	0.00997	0	0.420299	0.043665	0.463579	0.927544	0.428882
Marin (SF)	2027	MCY	Aggregate	Aggregate	Gasoline	6320.421	12238768	12238768	0	4386372	0	7.799719	0	0.659612	8.459331	0.024876	0	0.016555	0.041431	0.013491	0.056662	0.111584	0.026592
Marin (SF)	2027	MDV	Aggregate	Aggregate	Gasoline	31618.52	3.77E+08	3.77E+08	0	50780256	0	26.84605	0	19.01357	45.85963	0.441223	0	0.102599	0.543823	0.830297	1.139783	2.513903	0.479871
Marin (SF)	2027	MDV	Aggregate	Aggregate	Diesel	788.3264	8817314	8817314	0	1248312	0	0.439148	0	0	0.439148	0.048177	0	0	0.048177	0.019439	0.02799	0.095606	0.050356
Marin (SF)	2027	MH	Aggregate	Aggregate	Gasoline	399.0666	1290168	1290168	0	13054.7	0	0.416364	0	0.006319	0.422683	0.002076	0	5.06E-06	0.002081	0.004266	0.022408	0.028755	0.002258
Marin (SF)	2027	MH	Aggregate	Aggregate	Diesel	256.5989	810626.2	810626.2	0	8390.784	0	3.200385	0	0	3.200385	0.068706	0	0	0.068706	0.003574	0.014006	0.086287	0.071813
Marin (SF)	2027	Motor Coac	Aggregate	Aggregate	Diesel	11.9616	436631.3	436631.3	0	80264.26	0	0.751721	0.160031	0.178802	1.090554	0.013375	6.26E-05	0	0.013438	0.001444	0.012683	0.027565	0.01398
Marin (SF)	2027	OBUS	Aggregate	Aggregate	Gasoline	110.6875	1658237	1658237	0	724185.7	0	0.588864	0.002498	0.321018	0.91238	0.001788	0	0.000202	0.00199	0.005484	0.028661	0.036135	0.001945
Marin (SF)	2027	PTO	Aggregate	Aggregate	Diesel	0	655086.1	655086.1	0	0	0	2.079054	0	0	2.079054	0.003206	0	0	0.003206	0	0	0.003206	0.003351
Marin (SF)	2027	SBUS	Aggregate	Aggregate	Gasoline	44.34846	761675.7	761675.7	0	58007.79	0	0.331844	0.014126	0.049074	0.395043	0.000783	0	4.00E-05	0.000823	0.001679	0.013199	0.015702	0.000852
Marin (SF)	2027	SBUS	Aggregate	Aggregate	Diesel	105.6494	742044.9	742044.9	0	500245.8	0	3.730571	0.974617	0.22833	4.933517	0.020497	0.000886	0	0.021384	0.002454	0.012859	0.036697	0.021424
Marin (SF)	2027	T6 CAIRP C	Aggregate	Aggregate	Diesel	0.198599	3992.355	3992.355	0	1423.909	0	0.001483	0.000177	0.000888	0.002548	3.06E-05	1.09E-07	0	3.07E-05	1.32E-05	6.52E-05	0.000109	3.20E-05
Marin (SF)	2027	T6 CAIRP C	Aggregate	Aggregate	Diesel	0.260099	5495.931	5495.931	0	1864.85	0	0.001979	0.000232	0.001174	0.003386	3.76E-05	7.17E-08	0	3.77E-05	1.82E-05	8.97E-05	0.000146	3.93E-05
Marin (SF)	2027	T6 CAIRP C	Aggregate	Aggregate	Diesel	0.924449	14174.26	14174.26	0	6628.078	0	0.004386	0.000787	0.004099	0.009272	9.55E-05	3.64E-07	0	9.59E-05	4.69E-05	0.000231	0.000374	9.99E-05
Marin (SF)	2027	T6 CAIRP C	Aggregate	Aggregate	Diesel	1.484775	90908.8	90908.8	0	10645.48	0	0.033184	0.001275	0.006594	0.041053	0.000625	3.48E-07	0	0.000626	0.000301	0.001484	0.00241	0.000654
Marin (SF)	2027	T6 Instate D	Aggregate	Aggregate	Diesel	97.15079	1003967	1003967	0	432538.6	0	1.142712	0.332343	0.709075	2.184129	0.015813	0.000645	0	0.016458	0.00332	0.018423	0.038201	0.016528
Marin (SF)	2027	T6 Instate D	Aggregate	Aggregate	Diesel	63.12831	657415.1	657415.1	0	281062.4	0	0.655563	0.212092	0.471027	1.338682	0.009811	0.000379	0	0.01019	0.002174	0.012064	0.024428	0.010254
Marin (SF)	2027	T6 Instate D	Aggregate	Aggregate	Diesel	104.7903	1088502	1088502	0	466551.4	0	1.100176	0.347911	0.78096	2.229046	0.013968	0.000573	0	0.014541	0.0036	0.019974	0.038114	0.014599
Marin (SF)	2027	T6 Instate D	Aggregate	Aggregate	Diesel	5.596555	86689.27	86689.27	0	24917.21	0	0.173005	0.019883	0.04432	0.237207	0.000553	3.80E-05	0	0.000591	0.000287	0.001591	0.002469	0.000578
Marin (SF)	2027	T6 Instate C	Aggregate	Aggregate	Diesel	167.2385	2113308	2113308	0	603182.5	0	2.599735	0.680352	1.092047	4.372134	0.048996	0.002699	0	0.051695	0.006989	0.036579	0.095262	0.051212
Marin (SF)	2027	T6 Instate C	Aggregate	Aggregate	Diesel	402.3493	5240485	5240485	0	1451161	0	3.182451	1.365499	2.83787	7.385819	0.029946	0.001036	0	0.030982	0.01733	0.090707	0.139018	0.0313
Marin (SF)	2027	T6 Instate C	Aggregate	Aggregate	Diesel	241.7892	3122795	3122795	0	872065.9	0	2.388727	0.859638	1.670278	4.918643	0.033287	0.001568	0	0.034855	0.010327	0.054052	0.099234	0.034792
Marin (SF)	2027	T6 Instate C	Aggregate	Aggregate	Diesel	191.4012	2409463	2409463	0	690330.4	0	2.846443	0.698472	1.392956	4.937871	0.018003	0.001273	0	0.019275	0.007968	0.041705	0.068948	0.018817
Marin (SF)	2027	T6 Instate T	Aggregate	Aggregate	Diesel	9.716065	155804.9	155804.9	0	35043.13	0	0.222246	0.035771	0.068804	0.32682	0.001382	3.06E-05	0	0.001412	0.000515	0.002697	0.004624	0.001444
Marin (SF)	2027	T6 OOS Cla	Aggregate	Aggregate	Diesel	0.280666	5613.535	5613.535	0	2012.305	0	0.002557	0.000286	0.001308	0.004151	5.31E-05	2.73E-07	0	5.34E-05	1.86E-05	9.16E-05	0.000164	5.55E-05
Marin (SF)	2027	T6 OOS Cla	Aggregate	Aggregate	Diesel	0.365173	7700.761	7700.761	0	2618.201	0	0.002975	0.000363	0.001719	0.005057	5.52E-05	1.21E-07	0	5.53E-05	2.55E-05	0.000126	0.000207	5.77E-05
Marin (SF)	2027	T6 OOS Cla	Aggregate	Aggregate	Diesel	1.31583	20122.31	20122.31	0	9434.184	0	0.007384	0.001326	0.006202	0.014912	0.000157	8.01E-07	0	0.000158	6.65E-05	0.000328	0.000553	0.000165
Marin (SF)	2027	T6 OOS Cla	Aggregate	Aggregate	Diesel	1.887804	146314.2	146314.2	0	13535.1	0	0.056881	0.001856	0.008858	0.067595	0.001025	4.43E-07	0	0.001025	0.000484	0.002389	0.003898	0.001071
Marin (SF)	2027	T6 Public C	Aggregate	Aggregate	Diesel	28.95727	314172.6	314172.6	0	46347.84	0	1.210674	0.352067	0.056235	1.618976	0.005779	0.000296	0	0.006076	0.001039	0.005596	0.012711	0.006041
Marin (SF)	2027	T6 Public C	Aggregate	Aggregate	Diesel	59.09007	661654	661654	0	94577.21	0	1.488788	0.52603	0.153901	2.168719	0.007455	0.000328	0	0.007783	0.002188	0.011786	0.021756	0.007792

Marin (SF)	2027	T6 Public C	Aggregate	Aggregate	Diesel	44.88218	495379.3	495379.3	0	71836.62	0	2.381268	0.4941	0.081267	2.956635	0.012391	0.000715	0	0.013106	0.001638	0.008824	0.023568	0.012952
Marin (SF)	2027	T6 Public C	Aggregate	Aggregate	Diesel	80.79213	1127501	1127501	0	129312.7	0	3.8128	0.774821	0.181712	4.769334	0.022198	0.001061	0	0.023258	0.003729	0.020084	0.04707	0.023201
Marin (SF)	2027	T6 Utility Cl	Aggregate	Aggregate	Diesel	7.249976	90781.33	90781.33	0	28953.51	0	0.038599	0.016782	0.042662	0.098044	0.000268	4.67E-06	0	0.000273	0.0003	0.001593	0.002166	0.00028
Marin (SF)	2027	T6 Utility Cl	Aggregate	Aggregate	Diesel	1.373112	17136.71	17136.71	0	5483.662	0	0.0073	0.00316	0.008124	0.018583	4.93E-05	8.85E-07	0	5.02E-05	5.67E-05	0.000301	0.000408	5.15E-05
Marin (SF)	2027	T6 Utility Cl	Aggregate	Aggregate	Diesel	1.536077	23641.17	23641.17	0	6134.477	0	0.008941	0.003543	0.008832	0.021316	6.39E-05	9.90E-07	0	6.49E-05	7.82E-05	0.000415	0.000558	6.68E-05
Marin (SF)	2027	T6TS	Aggregate	Aggregate	Gasoline	347.0625	5779480	5779480	0	2270696	0	2.19845	0.010398	1.031459	3.240307	0.008156	0	0.001151	0.009307	0.019112	0.100379	0.128798	0.008871
Marin (SF)	2027	T7 CAIRP C	Aggregate	Aggregate	Diesel	78.21783	4841981	4841981	0	560803.1	0	7.555432	2.845952	1.329889	11.73127	0.161472	0.001143	0	0.162615	0.048036	0.141031	0.351683	0.168773
Marin (SF)	2027	T7 NNOOS	Aggregate	Aggregate	Diesel	71.33732	5946443	5946443	0	511471.5	0	9.373387	3.756675	1.318275	14.44834	0.192213	0.001294	0	0.193507	0.058993	0.173976	0.426477	0.200904
Marin (SF)	2027	T7 NOOS C	Aggregate	Aggregate	Diesel	30.61533	2160741	2160741	0	219504.6	0	3.508736	1.612337	0.56318	5.684252	0.074145	0.000555	0	0.0747	0.021436	0.063016	0.159152	0.077497
Marin (SF)	2027	T7 Other Pc	Aggregate	Aggregate	Diesel	8.25499	510754.4	510754.4	0	42136.11	0	0.848263	0.107236	0.108597	1.064096	0.010496	3.95E-05	0	0.010536	0.005067	0.016984	0.032586	0.010971
Marin (SF)	2027	T7 POAK Cl	Aggregate	Aggregate	Diesel	52.14595	1668414	1668414	0	266169.6	0	2.903307	0.669769	0.689411	4.262488	0.034755	0.00025	0	0.035004	0.016552	0.055331	0.106887	0.036326
Marin (SF)	2027	T7 Public C	Aggregate	Aggregate	Diesel	165.5161	2175054	2175054	0	264918.4	0	16.49071	1.65314	1.179818	19.32366	0.093559	0.003579	0	0.097139	0.021578	0.093392	0.212109	0.09779
Marin (SF)	2027	T7 Single C	Aggregate	Aggregate	Diesel	4.878114	98750.55	98750.55	0	14336.97	0	0.103939	0.032237	0.05299	0.189166	0.001592	1.27E-05	0	0.001605	0.00098	0.003126	0.00571	0.001664
Marin (SF)	2027	T7 Single D	Aggregate	Aggregate	Diesel	80.66072	1389433	1389433	0	237065.1	0	2.159364	0.57254	0.802415	3.534318	0.02721	0.00034	0	0.027551	0.013784	0.043617	0.084952	0.028441
Marin (SF)	2027	T7 Single O	Aggregate	Aggregate	Diesel	121.382	1629715	1629715	0	356746.6	0	2.079146	0.842354	1.279495	4.200995	0.026877	0.000539	0	0.027416	0.016168	0.051257	0.094842	0.028093
Marin (SF)	2027	T7 SWCV C	Aggregate	Aggregate	Diesel	39.00272	789605	789605	0	55976.7	0	5.971876	0.55799	0.168483	6.69835	0.01378	0.000592	0	0.014371	0.007834	0.063974	0.086178	0.014403
Marin (SF)	2027	T7 Tractor (	Aggregate	Aggregate	Diesel	190.6741	4067278	4067278	0	864394.5	0	6.842222	2.514791	3.723634	13.08065	0.098417	0.000985	0	0.099403	0.040351	0.124108	0.263862	0.102867
Marin (SF)	2027	T7 Utility Cl	Aggregate	Aggregate	Diesel	5.594009	74283.34	74283.34	0	22340.23	0	0.105127	0.013706	0.121671	0.240505	0.000573	4.98E-06	0	0.000578	0.000737	0.002722	0.004037	0.000599
Marin (SF)	2027	T7IS	Aggregate	Aggregate	Gasoline	0.599333	12151.77	12151.77	0	3921.208	0	0.099846	0	0.000181	0.100027	2.67E-05	0	3.40E-06	3.01E-05	6.70E-05	0.000449	0.000546	2.91E-05
Marin (SF)	2027	UBUS	Aggregate	Aggregate	Gasoline	54.48817	1856983	1856983	0	71270.52	0	0.22652	0	0.04736	0.27388	0.002504	0	3.88E-05	0.002543	0.005105	0.071921	0.079569	0.002723
Marin (SF)	2027	UBUS	Aggregate	Aggregate	Diesel	45.64013	1863733	1863733	0	59697.29	0	0.703675	0	0	0.703675	0.012785	0	0	0.012785	0.015345	0.079095	0.107225	0.013363

Total VMT	2.66E+09
Gas VMT	2.54E+09
Diesel VMT	1.13E+08

	HHD	LDA	LDT	LDT2	LHD1	LHD2	MCY	MDV	MH	MHD	OBUS	SBUS	UBUS
	0.396932	48.05919	4.577433	26.02165	2.784111	0.640969	2.589467	13.69953	0.268625	0.787777	0.065115	0.063913	0.04529
Total VMT:	########												
Annual Mot	2596												

	% of Miles	Miles	Gallons
Gas	85.18	########	########
Diesel	14.81984	########	########

PM10_IDLE	PM10_STRE	PM10_TOTA	PM10_PMT	PM10_PMB	PM10_TOTA	CO2_RUNE	CO2_IDLEX	CO2_STRE	CO2_TOTE	CH4_RUNE	CH4_IDLEX	CH4_STRE	CH4_TOTE	N2O_RUNE	N2O_IDLEX	N2O_STRE	N2O_TOTE	ROG_RUNE	ROG_IDLEX	ROG_STRE	ROG_TOTE	ROG_DIURI	ROG_HOTS
0.000149	0	0.027627	0.006436	0.024746	0.058809	611.6621	6.891578	0	618.5537	0.003627	4.20E-05	0	0.003669	0.096368	0.001086	0	0.097453	0.078098	0.000904	0	0.079002	0	0
0	0.357475	1.887905	10.71179	8.871751	21.47145	346184.2	0	12000.71	358184.9	2.576409	0	11.58802	14.16443	5.659751	0	5.620952	11.2807	9.807832	0	53.08224	62.89008	55.99108	15.98839
0	0	0.088327	0.048038	0.041006	0.177371	1405.625	0	0	1405.625	0.006533	0	0	0.006533	0.221457	0	0	0.221457	0.140661	0	0	0.140661	0	0
0	0.050475	0.249757	1.018524	1.02488	2.29316	39934.38	0	1549.634	41484.02	0.554807	0	1.817595	2.372402	0.961086	0	0.695886	1.656972	2.436146	0	9.400657	11.8368	11.267	3.155558
0	0	0.001626	6.33E-05	7.17E-05	0.001761	3.142579	0	0	3.142579	0.000102	0	0	0.000102	0.000495	0	0	0.000495	0.002192	0	0	0.002192	0	0
0	0.223271	1.23197	6.659421	6.469127	14.36052	266280.9	0	9019.561	275300.5	1.746778	0	8.056238	9.803016	3.994359	0	3.836837	7.831196	6.517826	0	36.62318	43.14101	30.48538	8.530554
0	0	0.024379	0.040798	0.041002	0.106179	1596.133	0	0	1596.133	0.002846	0	0	0.002846	0.251471	0	0	0.251471	0.061265	0	0	0.061265	0	0
0	0.006606	0.097701	0.44531	4.341775	4.884786	46687.61	171.6677	565.2974	47424.57	0.399664	0.157252	0.673261	1.230177	0.446782	0.004246	1.065921	1.516948	1.990148	0.57026	3.329826	5.890234	3.883253	0.977975
0.02611	0	1.308353	0.424223	2.757449	4.490025	22179.84	121.1359	0	22300.98	0.273627	0.004766	0	0.278393	3.494443	0.019085	0	3.513528	5.891035	0.102601	0	5.993636	0	0
0	0.000574	0.009897	0.053608	0.609788	0.673292	6377.056	24.76496	68.51543	6470.337	0.030608	0.0193	0.080756	0.130664	0.053136	0.00051	0.130939	0.184585	0.138046	0.069937	0.391809	0.599793	0.45515	0.111528
0.010421	0	0.439303	0.174661	1.324513	1.938477	10833.13	75.58827	0	10908.72	0.095249	0.001887	0	0.097136	1.706764	0.011909	0	1.718673	2.050655	0.040616	0	2.091271	0	0
0	0.017611	0.044204	0.053964	0.161891	0.260059	2550.333	0	235.939	2786.272	2.176567	0	0.895889	3.072456	0.53795	0	0.038469	0.576419	14.2294	0	6.674287	20.90369	10.00092	17.3293
0	0.111586	0.591457	3.321189	3.256522	7.169169	160022.5	0	5542.897	165565.4	1.083044	0	4.648191	5.731235	2.351535	0	2.045453	4.396988	4.325921	0	22.43945	26.76537	18.32897	4.86101
0	0	0.050356	0.077755	0.079972	0.208083	3985.601	0	0	3985.601	0.004864	0	0	0.004864	0.627933	0	0	0.627933	0.104722	0	0	0.104722	0	0
0	5.51E-06	0.002263	0.017066	0.064022	0.083352	2767.641	0	0.447494	2768.089	0.014135	0	0.000522	0.014657	0.029083	0	0.000686	0.029769	0.056865	0	0.00211	0.058976	0.549745	0.139519
0	0	0.071813	0.014297	0.040018	0.126128	967.9529	0	0	967.9529	0.004541	0	0	0.004541	0.152501	0	0	0.152501	0.097765	0	0	0.097765	0	0
6.55E-05	0	0.014045	0.005776	0.036238	0.056059	823.931	38.46363	0	862.3946	0.000308	0.000714	0	0.001022	0.129811	0.00606	0	0.135871	0.006626	0.015379	0	0.022005	0	0
0	0.00022	0.002165	0.021935	0.081887	0.105987	3162.515	14.92341	24.43832	3201.877	0.016246	0.007943	0.027386	0.051575	0.031599	0.000211	0.025196	0.057006	0.076162	0.029837	0.141952	0.247951	0.113964	0.026556
0	0	0.003351	0	0	0.003351	1429.781	0	0	1429.781	0.000663	0	0	0.000663	0.225263	0	0	0.225263	0.014276	0	0	0.014276	0	0
0	4.35E-05	0.000895	0.006717	0.037713	0.045325	669.1277	40.7727	3.579093	713.4795	0.006694	0.039905	0.004489	0.051088	0.019393	0.001329	0.00456	0.025282	0.03204	0.170082	0.02511	0.227232	0.026611	0.007478
0.000927	0	0.022351	0.009816	0.036741	0.068907	935.7957	85.59766	0	1021.393	0.002633	0.000287	0	0.00292	0.147435	0.013486	0	0.160921	0.056684	0.006179	0	0.062864	0	0
1.13E-07	0	3.21E-05	5.28E-05	0.000186	0.000271	4.857597	0.039217	0	4.896814	1.63E-06	1.65E-07	0	1.79E-06	0.000765	6.18E-06	0	0.000771	3.50E-05	3.55E-06	0	3.86E-05	0	0
7.49E-08	0	3.94E-05	7.27E-05	0.000256	0.000368	6.703052	0.051716	0	6.754768	1.80E-06	2.06E-07	0	2.00E-06	0.001056	8.15E-06	0	0.001064	3.86E-05	4.44E-06	0	4.31E-05	0	0
3.80E-07	0	0.0001	0.000187	0.000661	0.000949	16.96984	0.178049	0	17.14789	4.81E-06	7.46E-07	0	5.55E-06	0.002674	2.81E-05	0	0.002702	0.000104	1.61E-05	0	0.00012	0	0
3.64E-07	0	0.000654	0.001203	0.00424	0.006097	100.7284	0.28677	0	101.0152	2.86E-05	1.17E-06	0	2.97E-05	0.01587	4.52E-05	0	0.015915	0.000615	2.52E-05	0	0.00064	0	0
0.000674	0	0.017202	0.01328	0.052637	0.083119	1282.972	67.35736	0	1350.329	0.001951	0.000328	0	0.002279	0.202133	0.010612	0	0.212745	0.042	0.007063	0	0.049063	0	0
0.000396	0	0.010651	0.008696	0.034468	0.053815	840.1361	43.40169	0	883.5377	0.001101	0.000209	0	0.00131	0.132364	0.006838	0	0.139202	0.023712	0.004499	0	0.028211	0	0
0.000599	0	0.015198	0.014398	0.057069	0.086666	1384.752	72.30168	0	1457.054	0.001616	0.00034	0	0.001956	0.218168	0.011391	0	0.229559	0.034785	0.007325	0	0.04211	0	0
3.97E-05	0	0.000618	0.001147	0.004545	0.00631	108.7589	4.133801	0	112.8927	0.000107	1.96E-05	0	0.000127	0.017135	0.000651	0	0.017786	0.002302	0.000423	0	0.002725	0	0
0.002821	0	0.054032	0.027954	0.104511	0.186498	2608.576	125.4767	0	2734.052	0.004784	0.000797	0	0.00558	0.410982	0.019769	0	0.430751	0.102988	0.017158	0	0.120146	0	0
0.001083	0	0.032383	0.06932	0.259162	0.360864	6511.336	299.3989	0	6810.735	0.002608	0.001234	0	0.003843	1.025864	0.04717	0	1.073034	0.056159	0.026573	0	0.082731	0	0
0.001639	0	0.036431	0.041308	0.154434	0.232173	3868.428	180.395	0	4048.823	0.002917	0.000865	0	0.003782	0.609472	0.028421	0	0.637894	0.062795	0.018621	0	0.081416	0	0
0.00133	0	0.020147	0.031872	0.119157	0.171176	2906.568	149.1831	0	3055.751	0.001686	0.000706	0	0.002392	0.457931	0.023504	0	0.481435	0.036299	0.0152	0	0.051499	0	0
3.20E-05	0	0.001476	0.002061	0.007705	0.011242	177.8095	7.651307	0	185.4608	0.000153	3.15E-05	0	0.000185	0.028014	0.001205	0	0.029219	0.003302	0.000677	0	0.003979	0	0
2.85E-07	0	5.58E-05	7.43E-05	0.000262	0.000392	6.654319	0.054384	0	6.708704	3.18E-06	2.48E-07	0	3.43E-06	0.001048	8.57E-06	0	0.001057	6.86E-05	5.35E-06	0	7.39E-05	0	0
1.27E-07	0	5.78E-05	0.000102	0.000359	0.000519	9.168997	0.071333	0	9.24033	2.77E-06	2.92E-07	0	3.06E-06	0.001445	1.12E-05	0	0.001456	5.96E-05	6.29E-06	0	6.59E-05	0	0
8.37E-07	0	0.000165	0.000266	0.000939	0.00137	23.33525	0.246912	0	23.58216	8.69E-06	1.10E-06	0	9.78E-06	0.003676	3.89E-05	0	0.003715	0.000187	2.36E-05	0	0.000211	0	0
4.63E-07	0	0.001072	0.001935	0.006825	0.009832	159.9873	0.360241	0	160.3475	4.61E-05	1.49E-06	0	4.76E-05	0.025206	5.68E-05	0	0.025263	0.000993	3.21E-05	0	0.001025	0	0
0.00031	0	0.00635	0.004156	0.015989	0.026495	414.5437	33.71572	0	448.2594	0.000788	0.000115	0	0.000903	0.065312	0.005312	0	0.070623	0.016961	0.002474	0	0.019434	0	0
0.000343	0	0.008135	0.008752	0.033674	0.05056	873.5117	67.2123	0	940.724	0.00109	0.000239	0	0.001329	0.137622	0.010589	0	0.148211	0.023468	0.005145	0	0.028613	0	0

0.000747	0	0.013699	0.006553	0.025211	0.045463	659.5862	50.51703	0	710.1032	0.001569	0.000218	0	0.001788	0.103918	0.007959	0	0.111877	0.033789	0.004697	0	0.038486	0	0
0.001109	0	0.02431	0.014914	0.057382	0.096606	1485.366	89.2605	0	1574.626	0.002664	0.000385	0	0.003049	0.23402	0.014063	0	0.248083	0.057345	0.00829	0	0.065635	0	0
4.88E-06	0	0.000285	0.001201	0.004553	0.006039	109.3435	3.921917	0	113.2655	3.03E-05	1.58E-05	0	4.61E-05	0.017227	0.000618	0	0.017845	0.000652	0.000339	0	0.000991	0	0
9.25E-07	0	5.24E-05	0.000227	0.000859	0.001139	20.57003	0.741658	0	21.31169	5.33E-06	2.98E-06	0	8.31E-06	0.003241	0.000117	0	0.003358	0.000115	6.42E-05	0	0.000179	0	0
1.03E-06	0	6.78E-05	0.000313	0.001186	0.001566	28.33251	0.831168	0	29.16368	6.59E-06	3.33E-06	0	9.92E-06	0.004464	0.000131	0	0.004595	0.000142	7.17E-05	0	0.000214	0	0
0	0.001252	0.010122	0.076449	0.286796	0.373368	11078.81	65.80514	112.5219	11257.14	0.067654	0.03292	0.113778	0.214352	0.115231	0.000877	0.079987	0.196095	0.32875	0.127492	0.618778	1.07502	0.317941	0.078435
0.001195	0	0.169968	0.192145	0.402947	0.76506	7878.084	619.0789	0	8497.163	0.002991	0.013037	0	0.016028	1.241195	0.097536	0	1.338731	0.064389	0.280684	0	0.345072	0	0
0.001352	0	0.202256	0.235974	0.497075	0.935305	9297.04	672.9562	0	9969.996	0.003624	0.014757	0	0.018382	1.464752	0.106025	0	1.570777	0.078029	0.317723	0	0.395752	0	0
0.00058	0	0.078078	0.085745	0.180045	0.343868	3448.508	294.6943	0	3743.203	0.001358	0.006333	0	0.007691	0.543314	0.046429	0	0.589743	0.029233	0.136355	0	0.165588	0	0
4.13E-05	0	0.011012	0.020268	0.048524	0.079805	913.8412	22.79483	0	936.6361	0.000287	0.000451	0	0.000738	0.143976	0.003591	0	0.147567	0.006188	0.009706	0	0.015894	0	0
0.000261	0	0.036587	0.066208	0.158089	0.260884	2997.042	142.3782	0	3139.42	0.000968	0.002848	0	0.003816	0.472185	0.022432	0	0.494617	0.020844	0.061309	0	0.082153	0	0
0.003741	0	0.101531	0.086313	0.266833	0.454677	4389.246	179.124	0	4568.37	0.011001	0.003044	0	0.014045	0.691527	0.028221	0	0.719749	0.236849	0.065546	0	0.302395	0	0
1.33E-05	0	0.001677	0.003919	0.008932	0.014528	175.2465	7.039553	0	182.286	4.35E-05	0.000145	0	0.000189	0.02761	0.001109	0	0.028719	0.000936	0.003125	0	0.004061	0	0
0.000356	0	0.028796	0.055137	0.124619	0.208553	2523.826	126.792	0	2650.618	0.000941	0.002414	0	0.003355	0.39763	0.019976	0	0.417606	0.020266	0.051973	0	0.072239	0	0
0.000563	0	0.028656	0.064672	0.14645	0.239778	2867.636	178.8704	0	3046.506	0.000983	0.003639	0	0.004622	0.451797	0.028181	0	0.479978	0.021157	0.078344	0	0.0995	0	0
0.000618	0	0.015021	0.031334	0.182782	0.229137	3469.867	50.62794	0	3520.495	0.001118	0.00067	0	0.001788	0.546679	0.007976	0	0.554655	0.024073	0.01442	0	0.038493	0	0
0.00103	0	0.103897	0.161403	0.354595	0.619895	6764.266	529.8351	0	7294.101	0.002822	0.010522	0	0.013344	1.065713	0.083476	0	1.149189	0.060757	0.22654	0	0.287297	0	0
5.20E-06	0	0.000604	0.002948	0.007777	0.011329	138.4889	3.003796	0	141.4927	4.77E-05	5.68E-05	0	0.000104	0.021819	0.000473	0	0.022292	0.001027	0.001222	0	0.002249	0	0
0	3.70E-06	3.28E-05	0.000268	0.001283	0.001583	28.01099	0	0.268399	28.27939	0.001798	0	6.55E-07	0.001798	0.002865	0	6.63E-06	0.002871	0.009334	0	3.55E-06	0.009337	0.001665	0.000544
0	4.22E-05	0.002766	0.020421	0.205488	0.228674	2726.027	0	5.556081	2731.583	0.005796	0	0.005986	0.011783	0.023557	0	0.005467	0.029023	0.017366	0	0.023527	0.040893	0.006283	0.002032
0	0	0.013363	0.06138	0.225986	0.300728	2131.124	0	0	2131.124	0.006023	0	0	0.006023	0.335759	0	0	0.335759	0.129668	0	0	0.129668	0	0

																			Fuel Consumption	
ROG_RUNL	ROG_TOTAI	TOG_RUNE	TOG_IDLEX	TOG_STRE>	TOG_TOTE>	TOG_DIURI	TOG_HOTS	TOG_RUNL	TOG_TOTAI	CO_RUNEX	CO_IDLEX	CO_STREX	CO_TOTEX	SOx_RUNE:	SOx_IDLEX	SOx_STREX	SOx_TOTEX	NH3_RUNE	DSL	GAS
0	0.079002	0.088908	0.001029	0	0.089937	0	0	0	0.089937	0.224515	0.023976	0	0.248491	0.005792	6.53E-05	0	0.005857	0.107319	55.25516	
44.04664	178.9162	14.31157	0	58.11837	72.42994	55.99108	15.98839	44.04664	188.4561	806.5907	0	541.5296	1348.12	3.422383	0	0.118639	3.541022	50.32983		37770.15
0	0.140661	0.160133	0	0	0.160133	0	0	0	0.160133	1.91752	0	0	1.91752	0.013319	0	0	0.013319	0.018615	125.5639	
9.0652	35.32456	3.554818	0	10.29254	13.84735	11.267	3.155558	9.0652	37.33511	133.3465	0	93.50676	226.8532	0.394792	0	0.01532	0.410112	4.68654		4374.438
0	0.002192	0.002495	0	0	0.002495	0	0	0	0.002495	0.016754	0	0	0.016754	2.98E-05	0	0	2.98E-05	2.45E-05	0.280725	
23.61414	105.7711	9.510796	0	40.09778	49.60857	30.48538	8.530554	23.61414	112.2386	537.0276	0	363.4692	900.4968	2.632458	0	0.089168	2.721625	31.64881		29030.09
0	0.061265	0.069747	0	0	0.069747	0	0	0	0.069747	0.68787	0	0	0.68787	0.015124	0	0	0.015124	0.015809	142.5819	
5.708541	16.46	2.904019	0.832121	3.645741	7.381882	3.883253	0.977975	5.708541	17.95165	60.93034	5.529654	71.87611	138.3361	0.461555	0.001697	0.005589	0.46884	2.503004		5000.862
0	5.993636	6.706551	0.116805	0	6.823356	0	0	0	6.823356	16.16831	0.850412	0	17.01873	0.210165	0.001148	0	0.211313	6.314962	1992.137	
0.633374	1.799845	0.201437	0.102053	0.428982	0.732471	0.45515	0.111528	0.633374	1.932523	5.280216	0.689462	8.559182	14.52886	0.063044	0.000245	0.000677	0.063966	0.301416		682.2889
0	2.091271	2.334535	0.046238	0	2.380773	0	0	0	2.380773	5.204018	0.336644	0	5.540661	0.102649	0.000716	0	0.103366	2.837835	974.4713	
18.62663	66.86054	17.13022	0	7.256088	24.38631	10.00092	17.3293	18.62663	70.34316	170.6495	0	39.81484	210.4643	0.025213	0	0.002332	0.027545	0.119178		293.8089
14.29241	64.24775	6.312373	0	24.56837	30.88075	18.32897	4.86101	14.29241	68.36313	294.2152	0	194.9938	489.2091	1.581985	0	0.054797	1.636782	15.78993		17458.66
0	0.104722	0.119219	0	0	0.119219	0	0	0	0.119219	1.998934	0	0	1.998934	0.037766	0	0	0.037766	0.03013	356.0322	
0.003372	0.751612	0.082978	0	0.00231	0.085288	0.549745	0.139519	0.003372	0.777925	1.223632	0	0.045685	1.269317	0.027361	0	4.42E-06	0.027365	0.063974		291.8915
0	0.097765	0.111299	0	0	0.111299	0	0	0	0.111299	0.319256	0	0	0.319256	0.009172	0	0	0.009172	0.151712	86.46685	
0	0.022005	0.007543	0.017508	0	0.025052	0	0	0	0.025052	0.030541	0.22626	0	0.256801	0.007802	0.000364	0	0.008166	0.105887	77.03737	
0.131929	0.5204	0.111135	0.043538	0.15542	0.310093	0.113964	0.026556	0.131929	0.582542	1.665371	0.230768	2.895213	4.791352	0.031265	0.000148	0.000242	0.031654	0.082253		337.6339
0	0.014276	0.016253	0	0	0.016253	0	0	0	0.016253	0.165902	0	0	0.165902	0.013539	0	0	0.013539	0.158796	127.7218	
0.017637	0.278958	0.046753	0.248183	0.027492	0.322428	0.026611	0.007478	0.017637	0.374154	0.820404	1.314491	0.606209	2.741104	0.006615	0.000403	3.54E-05	0.007053	0.037782		75.23552
0	0.062864	0.064531	0.007035	0	0.071566	0	0	0	0.071566	0.174679	0.159765	0	0.334443	0.008861	0.000811	0	0.009672	0.11148	91.24067	
0	3.86E-05	3.99E-05	4.04E-06	0	4.39E-05	0	0	0	4.39E-05	0.000151	0.000143	0	0.000294	4.60E-05	3.71E-07	0	4.64E-05	0.000965	0.43743	
0	4.31E-05	4.40E-05	5.06E-06	0	4.91E-05	0	0	0	4.91E-05	0.000187	0.000187	0	0.000374	6.35E-05	4.90E-07	0	6.40E-05	0.001332	0.603401	
0	0.00012	0.000118	1.83E-05	0	0.000136	0	0	0	0.000136	0.000476	0.000665	0	0.001141	0.000161	1.69E-06	0	0.000162	0.00343	1.531814	
0	0.00064	0.0007	2.87E-05	0	0.000729	0	0	0	0.000729	0.003142	0.001065	0	0.004207	0.000954	2.72E-06	0	0.000957	0.022046	9.02365	
0	0.049063	0.047814	0.008041	0	0.055855	0	0	0	0.055855	0.15912	0.240188	0	0.399308	0.012149	0.000638	0	0.012787	0.237379	120.6244	
0	0.028211	0.026994	0.005122	0	0.032116	0	0	0	0.032116	0.092549	0.156044	0	0.248593	0.007956	0.000411	0	0.008367	0.156139	78.92608	
0	0.04211	0.0396	0.008339	0	0.047939	0	0	0	0.047939	0.145395	0.258271	0	0.403665	0.013113	0.000685	0	0.013797	0.259294	130.1581	
0	0.002725	0.00262	0.000481	0	0.003102	0	0	0	0.003102	0.013899	0.013488	0	0.027386	0.00103	3.91E-05	0	0.001069	0.021005	10.08466	
0	0.120146	0.117244	0.019533	0	0.136777	0	0	0	0.136777	0.346411	0.461682	0	0.808093	0.024702	0.001188	0	0.02589	0.492492	244.2318	
0	0.082731	0.063932	0.030251	0	0.094183	0	0	0	0.094183	0.337141	1.053322	0	1.390463	0.061658	0.002835	0	0.064494	1.265704	608.4003	
0	0.081416	0.071487	0.021199	0	0.092686	0	0	0	0.092686	0.278747	0.642733	0	0.92148	0.036632	0.001708	0	0.03834	0.747972	361.6798	
0	0.051499	0.041323	0.017304	0	0.058628	0	0	0	0.058628	0.217398	0.5009	0	0.718298	0.027523	0.001413	0	0.028936	0.583826	272.969	
0	0.003979	0.003759	0.000771	0	0.00453	0	0	0	0.00453	0.016433	0.024546	0	0.040979	0.001684	7.25E-05	0	0.001756	0.037771	16.56714	
0	7.39E-05	7.80E-05	6.09E-06	0	8.41E-05	0	0	0	8.41E-05	0.00026	0.000203	0	0.000463	6.30E-05	5.15E-07	0	6.35E-05	0.00135	0.599286	
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0	0.000211	0.000213	2.69E-05	0	0.00024	0	0	0	0.00024	0.000773	0.00095	0	0.001723	0.000221	2.34E-06	0	0.000223	0.004855	2.106585	
0	0.001025	0.00113	3.65E-05	0	0.001167	0	0	0	0.001167	0.005116	0.001355	0	0.006471	0.001515	3.41E-06	0	0.001518	0.035482	14.32378	
0	0.019434	0.019308	0.002816	0	0.022124	0	0	0	0.022124	0.046824	0.07063	0	0.117454	0.003925	0.000319	0	0.004245	0.05306	40.04284	
0	0.028613	0.026717	0.005857	0	0.032574	0	0	0	0.032574	0.078043	0.178069	0	0.256113	0.008272	0.000636	0	0.008908	0.133845	84.0345	

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0	0.000214	0.000162	8.16E-05	0	0.000243	0	0	0	0.000243	0.001076	0.00303	0	0.004107	0.000268	7.87E-06	0	0.000276	0.005733	2.60518	
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0	0.345072	0.073302	0.319537	0	0.392839	0	0	0	0.392839	0.251897	4.144435	0	4.396332	0.074601	0.005862	0	0.080463	1.174221	759.0482	
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0	0.302395	0.269635	0.074619	0	0.344254	0	0	0	0.344254	0.813624	0.674393	0	1.488016	0.041564	0.001696	0	0.04326	0.36041	408.0907	
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0	0.002249	0.001169	0.001392	0	0.002561	0	0	0	0.002561	0.010509	0.01803	0	0.028538	0.001311	2.84E-05	0	0.00134	0.018014	12.63948	
0.004887	0.016433	0.01362	0	3.89E-06	0.013624	0.001665	0.000544	0.004887	0.02072	0.37716	0	0.04256	0.419719	0.000277	0	2.65E-06	0.00028	0.000603		2.982026
0.007119	0.056327	0.025341	0	0.025759	0.051099	0.006283	0.002032	0.007119	0.066533	0.890071	0	0.662987	1.553058	0.02695	0	5.49E-05	0.027004	0.092114		288.0421
0	0.129668	0.147617	0	0	0.147617	0	0	0	0.147617	0.144794	0	0	0.144794	0.020193	0	0	0.020193	0.451971	190.3724	

Total DSL F	Total GAS fuel consum	24.7057	0.040476	
10695.21	96793.13	26.26376	0.038075	
		10.60507	0.094295	

Appendix D

Cultural Resources Tech Study
(Confidential)

Appendix E

Historic Resource Evaluation Report

Historical Resource Evaluation Report

for the

North Coast Land Holdings Project

Prepared for:
County of Marin
Community Development Agency
3501 Civic Center Drive, Ste. 308
San Rafael, CA 94903
March 2023

Historical Resource Evaluation Report for the North Coast Land Holdings Project

Prepared By:

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Prepared For:

County of Marin Community Development Agency

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March 2023

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EXECUTIVE SUMMARY

PURPOSE AND SCOPE

North Coast Land Holdings, LLC has applied for entitlements to redevelop property on the Strawberry Peninsula in unincorporated Marin County. The proposed development would include renovation of an existing academic campus, relocation of an existing daycare center, construction of a new fitness center, construction of a new residential care facility, upgrades to existing housing and construction of new housing, retention and access improvements to existing open space and recreation areas, and creation of new bicycle and pedestrian paths throughout the property (project).

Ascent was retained by Marin County (County) to conduct this Historical Resource Evaluation Report for the North Coast Land Holdings Project. The project site is located on privately-owned lands of the former Golden Gate Baptist Theological Seminary (GGBTS) at 201 Seminary Drive, on Assessor's Parcel Number (APN) 043-261-25; 043-261-26; 043-401-05; 043-401-10; 043-401-16; 043-402-03; and 043-402-06. No development is proposed on the Richardson Bay Parcels (APN 043-262-03 and 043-262-06) and, thus, they are not included as part of the project.

Ascent inventoried the built-environment features present within the project site and evaluated the GGBTS at a district level for potential listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR) to determine if the project has the potential to cause a substantial adverse change to historical resource under CEQA. Because the administration and academic buildings are the only features to have the potential to be individually eligible, they were evaluated for individual NRHP- and CRHR-eligibility as well. This analysis complies with Section 15064.5(a)(2)-(3) of the CEQA Guidelines.

CONCLUSION AND RECOMMENDATIONS

This investigation recorded and evaluated the GGBTS at a district level; the property is recommended not eligible for inclusion in the NRHP and CRHR. Similarly, the administration and academic buildings were evaluated for individual eligibility and recommended not eligible. Therefore, the project would have no significant impact on historical resources for the purposes of CEQA. No further investigation or treatment measures are recommended.

PERSONNEL QUALIFICATIONS

Alta Cunningham has over 19 years of experience in the environmental consulting field. Her experience as an architectural historian includes archival research, historic building and structure surveys and evaluations, evaluating project for consistency with the Secretary of the Interior's Standards, and cultural resources documentation for NEPA and CEQA projects ranging from single building evaluations to district-wide surveys for CEQA, PRC 5024, and Section 106 compliance documents. Alta has completed evaluations for higher education facilities, California's correctional facilities, pre- and post-World War II residential and commercial buildings, agricultural properties, and water conveyance systems. Alta received her Bachelor of Science in History from the University of California, Davis, and a Master of Arts in Historic Preservation from the Savannah College of Art and Design. She meets the Secretary of the Interior's Professional Qualification Standards for architectural history and history.

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1 INTRODUCTION

Marin County (County) retained Ascent Environmental (Ascent) to complete a Historical Resource Evaluation Report (HRER) for the North Coast Land Holdings Project (project) to support a draft environmental impact report (Draft EIR) being prepared for the project. Ascent prepared this HRER in compliance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code. This HRER details the methods and results of the study, which consisted of an archival review, field survey, and research of comparative studies, in support of the evaluation of the property.

1.1 PROJECT DESCRIPTION

The project is located on the former GGBTS campus property in the community of Strawberry, a census-designated place in unincorporated Marin County, California, next to the City of Mill Valley. The GGBTS campus address is 201 Seminary Drive on the Strawberry Peninsula, which extends into Richardson Bay. The campus consists of ten Assessor's Parcels, two of which have boundaries that extend into Richardson Bay (the "Richardson Bay Parcels"). The GGBTS campus is approximately 127 acres in size and bound by Richard Drive, Seminary Drive, and East Strawberry Drive (Figure 1-1). The properties composing the project site total approximately 104.8 acres and include APNs 043-261-25, 043-261-26, 043-401-05, 043-401-10, 043-401-16, 043-402-03, 043-402-05, and 043-402-06. No development is proposed on the Richardson Bay Parcels (APN 043-262-03 and 043-262-06) and, thus, they are not included as part of the project.

Regional access to the project site is available from U.S. Highway 101 (U.S. 101) and State Route 131 (SR 131; Tiburon Boulevard). The project site is directly accessible from Seminary Drive, both at Hodges Drive and Gilbert Drive. Other access points to the project site include Mission Drive, East Strawberry Drive, Chapel Drive, and Reed Boulevard.

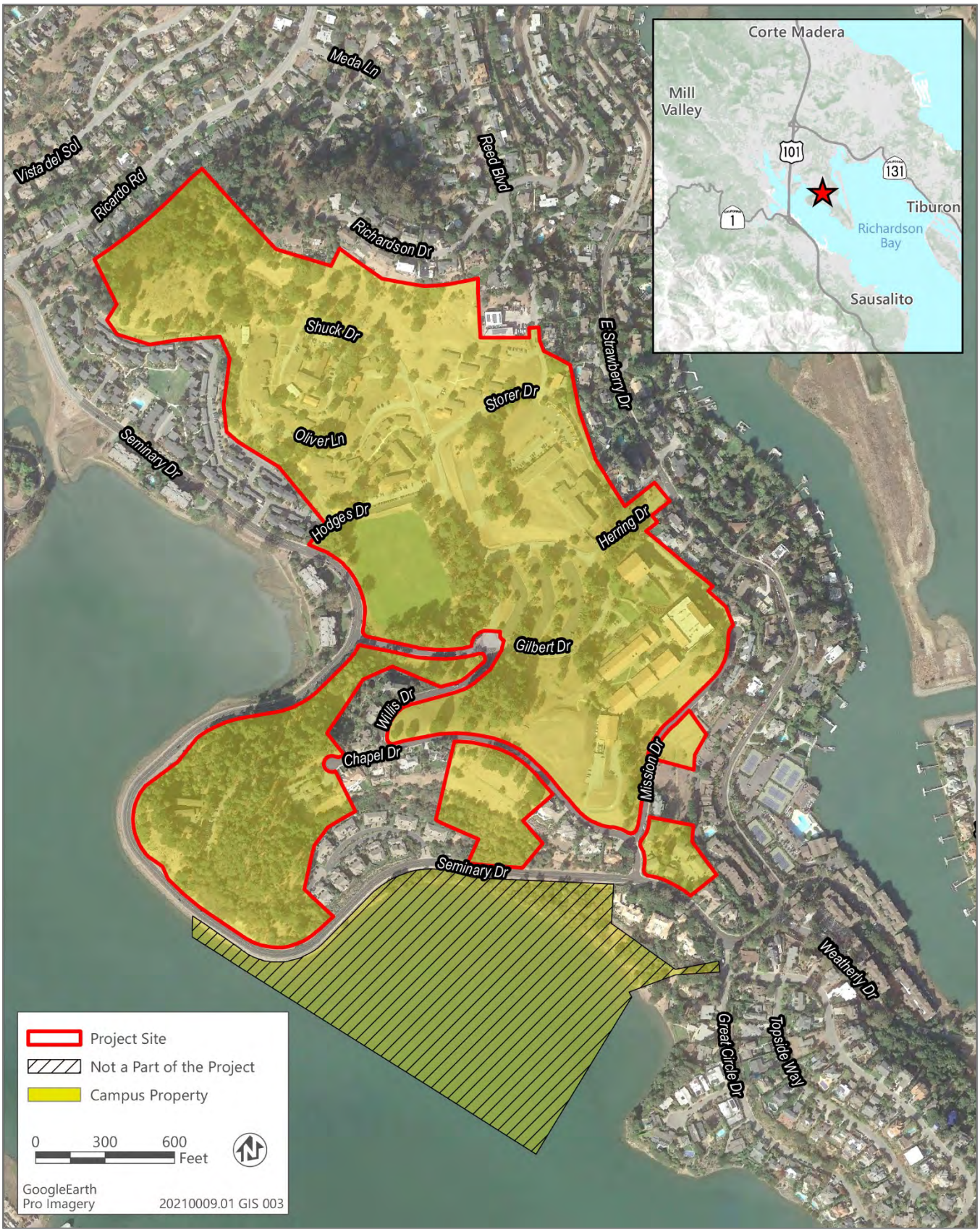
The project would include renovation of an existing academic campus, relocation of an existing daycare center, construction of a new fitness center, construction of a new residential care facility, upgrades to existing housing and construction of new housing, retention and access improvements to existing open space and recreation areas, and creation of new bicycle and pedestrian paths throughout the project site. Two new buildings would be constructed including a new 20,000-square-foot facility for the daycare and fitness center and a 267,354-square foot residential care facility. Renovation of the existing administration building will add 15,800-sqaure feet of floor area resulting in a 41,000-square foot building. Demolition of the existing maintenance building is proposed with the construction of a new 2,200-square-foot maintenance building. The addition of 324 residential units including single and multi-family residences would result in new construction as well as replace existing residences and dorm rooms. To facilitate residential and other activities, landscape and hardscape improvements associated with the school campus and residential development, including parking, playfields and a network of walkways and pedestrian-friendly streets as well as a dedicated open space with a network of trails is proposed.

1.2 REGULATORY CONTEXT

1.2.1 Federal

NATIONAL HISTORIC PRESERVATION ACT

Historic properties are protected through the National Historic Preservation Act (NHPA) of 1966 (16 USC 470f) and its implementing regulations (16 USC 470 et seq., 36 CFR 800, 36 CFR 60, and 36 CFR 63). The NHPA establishes the federal government's policy on historic preservation and the programs, including the NRHP, through which that policy is implemented. Under the NHPA, historic properties include "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places" (16 USC 470w (5)).



Source: adapted by Ascent Environmental in 2020

Figure 1-1 Project Area

The formal criteria (36 CFR 60.4) for determining NRHP eligibility are as follows:

1. The property is at least 50 years old (however, properties under 50 years of age that are of exceptional importance or are contributors to a district can also be included in the NRHP);
2. It retains integrity of location, design, setting, materials, workmanship, feeling, and associations; and
3. It possesses at least one of the following characteristics:

   Criterion A Is associated with events that have made a significant contribution to the broad patterns of history (events).

   Criterion B Is associated with the lives of persons significant in the past (persons).

   Criterion C Embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant, distinguishable entity whose components may lack individual distinction (architecture).

   Criterion D Has yielded, or may be likely to yield, information important in prehistory or history (information potential).

For a property to retain and convey historic integrity it must possess most of the seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. **Location** is the place where the historic property was constructed or the place where a historic event occurred. Integrity of location refers to whether the property has been moved since its construction. **Design** is the combination of elements that create the form, plan, space, structure, and style of a property. **Setting** is the physical environment of a historic property that illustrates the character of the place. **Materials** are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. **Workmanship** is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. **Feeling** is a property's expression of the aesthetic or historic sense of a particular period of time. This is an intangible quality evoked by physical features that reflect a sense of a past time and place. **Association** is the direct link between the important historic event or person and a historic property. Continuation of historic use and occupation help maintain integrity of association.

1.2.2 State

CALIFORNIA REGISTER OF HISTORICAL RESOURCES

All properties in California that are listed in or formally determined eligible for listing in the NRHP are eligible for listing in the California Register of Historical Resources (CRHR). The CRHR is a listing of State of California resources that are significant in the context of California's history. It is a Statewide program with a scope and with criteria for inclusion similar to those used for the NRHP. In addition, properties designated under municipal or county ordinances are also eligible for listing in the CRHR.

A historic resource must be significant at the local, state, or national level under one or more of the criteria defined in the California Code of Regulations Title 15, Chapter 11.5, Section 4850 to be included in the CRHR. The CRHR criteria are tied to CEQA because any resource that meets the criteria below is considered a significant historical resource under CEQA. As noted above, all resources listed in or formally determined eligible for listing in the NRHP are automatically listed in the CRHR.

The CRHR uses four evaluation criteria for significance:

Criterion 1. Is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.

Criterion 2. Is associated with the lives of persons important to local, California, or national history.

Criterion 3. Embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of a master; or possesses high artistic values.

Criterion 4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

A property must have both significance and integrity to be considered eligible for listing in the CRHR. Loss of integrity, if sufficiently great, will overwhelm the historical significance of a resource and render it ineligible. Likewise, a resource can have complete integrity, but if it lacks significance, it must also be considered ineligible. Integrity is evaluated by regarding the property's retention of its location, design, setting, workmanship, materials, feeling, and association to its period of significance. These seven factors can be roughly grouped into three types of integrity considerations. Location and setting relate to the relationship between the property and its environment. Design, materials, and workmanship, as they apply to historic buildings, relate to construction methods and architectural details. Feeling and association are the least objective of the seven factors and pertain to the overall ability of the property to convey a sense of the historical time and place in which it was constructed.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA requires public agencies to consider the effects of their actions on "historical resources". Pursuant to PRC Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment."

Historical Resources

"Historical resource" is a term with a defined statutory meaning (PRC Section 21084.1; State CEQA Guidelines Sections 15064.5[a] and [b]). Under State CEQA Guidelines Section 15064.5(a), historical resources include the following:

1) A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the CRHR (PRC Section 5024.1).

2) A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g), will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

3) Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be historically significant if the resource meets the criteria for listing in the CRHR (PRC Section 5024.1).

4) The fact that a resource is not listed in or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to PRC Section 5020.1[k]), or identified in a historical resources survey (meeting the criteria in PRC Section 5024.1[g]) does not preclude a lead agency from determining that the resource may be a historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

1.2.3 Local

MARIN COUNTYWIDE PLAN

Chapter 4, Socioeconomic Element, of the Marin Countywide Plan 2015, contains the following goals and policies replated to historical resources.

Goal HAR-1. Historical Resource Protection. Identify and protect archaeological and historical resources as major contributors to quality of life and community vitality in Marin.

Policy HAR-1.1 Preserve Historical and Archaeological Resources. Identify archaeological and historical resource sites.

Policy HAR-1.2 Document Historical Information. Provide documents, photographs, and other historical information whenever possible to be catalogued in the Anne T. Kent California Room in the Marin County Free Library.

Policy HAR-1.3 Avoid Impacts to Historical and Archaeological Resources. Ensure that human activity avoids damaging cultural resources, where feasible.

2 HISTORIC CONTEXT

2.1 DEVELOPMENT OF GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY

2.1.1 Early History of the Southern Baptist Convention

The Southern Baptist Convention (SBC) is a Christian denomination based in the United States. It is the world's largest Baptist denomination, descended from Baptists who settled in the American colonies in the 17th century (Fahmy 2019). In the late 1700s as Baptists began to organize and expand, they formed missionary societies to spread the Christian lifestyle to others. These mission societies, such as the American Baptist Home Mission Society, the American Baptist Foreign Mission Society, and the American Baptist Publication Society, led to other organizational structures that would eventually define the denomination of Southern Baptists (Fairchild 2019).

By the 1830's tension began to mount between northern and southern Baptists over the issue of slavery. Northern Baptists (known today as the American Baptist Churches USA) believed God would not condone treating one race as superior to another, while southerners said that God intended for races to be separate (Fairchild 2019). In 1844, Georgia Baptists asked the Home Mission Society to appoint a slaveholder to be a missionary in Georgia. After much discussion, the appointment was declined. A few months later, the Alabama Baptist Convention asked the Foreign Mission Society if they would appoint a slaveholder as a missionary. The society said no (Baker 1979).

Virginia Baptists called for Baptists of the southern states to meet at Augusta, Georgia, in early May 1845, for the purpose of consulting "on the best means of promoting the Foreign Mission cause, and other interests of the Baptist denomination in the South" (Baker 1979). About 293 Baptist leaders of the South gathered at the First Baptist Church, Augusta, Georgia. They concluded that more could be accomplished in Christian work by the organization of a separate Baptist body for missionary work. As a result of this division, the SBC was formed (Fairchild 2019).

2.1.2 Early Attempts in California

The earliest account of Baptist missions in California was the arrival of Osgood Wheeler in February 1849. Wheeler, a pastor from the First Baptist Church of Jersey City, was sent by the American Baptist Home Mission Society of Northern Baptists and the Board of Domestic Missions of the SBC as their pioneer missionary. He and his family arrived in the first steamer to enter San Francisco's harbor, one year before California became a state (Graves 1983:15-16). Wheeler's attempts at establishing churches and congregations was not successful. It was noted that people in northern California were consumed by the Gold Rush and "gold fever." In southern California, the influence of Southern Baptists was made by lay people who migrated to the state for the land, not the gold, and they were therefore more successful (Graves 1983:25).

Southern Baptist in northern California turned to education to further their cause. In 1853, the California Baptist Education Society was organized with the goal of furthering the mission and founding a theological institution (Graves 1983:26). In 1859 Harvey Gilbert, a Southern Baptist home missionary, founded the San Rafael Baptist Institute in Marin County. Many people hoped the fledgling institute would soon become a Baptist theological school, however, the school closed after a few years as the United States was plunged into the Civil War. Soon after, the SBC withdrew all support for California work and the churches and institutes it sponsored either disappeared or found other affiliations (Gateway Seminary 2021; Wood 2019; Graves 1983:27-28).

2.1.3 Isam B. Hodges and the Southern Baptist General Convention of California

When Southern Baptists again began establishing churches in California, the first in 1936 in Kern County by the Mouser family, the need for a theological school was again recognized (Gateway Seminary 2021; Graves 1983:30). The Southern Baptist General Convention of California (Convention) organized in 1940 and included all 14 Southern Baptist churches in California. At its 1942 meeting, a plea for a Baptist school was heard, and the Convention adopted the following resolution, "We recommend that Southern Baptists in California pray, labor, and pay that these institutions which we now have may continue in their work and that we may soon have schools of our own in California to prepare our young people for greater service in the Kingdom" (Graves 1983:32-33). By this time, the Convention had a membership of 40 churches.

Gilbert's dream for a theological school in California was particularly strong in the mind of Isam B. Hodges. While a student at Southwestern Baptist Theological Seminary in Fort Worth, Texas, Hodges came to the conviction that it was God's will for him to begin a seminary in the West. In 1934, Hodges arrived in the Bay Area and within two years he was pastor of Oakland's Golden Gate Baptist Church (Gateway Seminary 2021; Wood 2019). The Golden Gate Baptist Church had been organized in 1892 with the Northern Baptist Convention; Hodges, believing that the Northern Baptists were not doing enough to grow their ministries, sought for affiliation with the Southern Baptist Convention for his church in November 1943 (Graves 1983:38-39). Hodges had established sufficient reputation among Sothern Baptists and was the president of the Convention from 1944 to 1945, providing strong leadership and support for Southern Baptist expansion in California. He urged the Home Mission Board and the Sunday School Board of the SBC to do more to support the California efforts (Graves 1983:40). In less than a decade Hodges had risen from an unemployed preacher to the president of a new Southern Baptist General Convention of California. Hodges also determined that the time was ripe to pursue his dream of a theological seminary.

2.1.4 Founding of the Golden Gate Baptist Theological Seminary

In the spring of 1944, the congregation of Golden Gate Baptist Church authorized its deacons to meet with a committee from the First Southern Baptist Church of San Francisco to formulate plans to establish a theological seminary, with the expressed purpose of training men and women for the ministry (Gateway Seminary 2021; Wood 2019; Graves 1983:31-33). The combined committee met on March 31, 1944, to formally organize GGBTS. Six deacons from each church served as members of the first board of trustees; a few weeks later three additional members were added as representatives of the Golden Gate Baptist Association. By summer of 1944, a state charter had been issued and classes began at the Golden Gate Baptist Church in Oakland (Gateway Seminary 2021; Wood 2019). The curriculum was similar to that of other seminaries of the time. Under the heading for department chairs, the following twelve were listed (Graves 1983:44):

1. Chair of Bible
2. Chair of Missions
3. Chair of Evangelism
4. Chair of Church History
5. Chair of Christian Education
6. Chair of Homiletics
7. Chair of Theology
8. Chair of New Testament Greek
9. Chair of Old Testament Hebrew
10. Chair of Christian Psychology & Christian Sociology
11. Chair of Sacred Music
12. Apologetic & Polemics

Hodges guided the school through that first year as its president, all the while writing letters to people throughout the SBC, working to gain support for his vision. The SBC approved the recommendation that the seminary become an institution of the state convention; in November 1945, the Southern Baptist General Convention of California gained ownership of the school and elected a new board of trustees. Dr. Benjamin O. Herring succeeded Hodges as president in 1946.

Although primarily an educator, Herring was active in growing the GGBTS. He wrote letters thanking the Golden Gate Baptist Church for use of their facilities while also suggesting the GGBTS should acquire housing facilities. He

repeatedly presented the case that the SBC open a Baptist College in California and petitioned Baptist churches for financial support. In early 1947 Herring was successful in moving the GGBTS to larger, more spacious quarters in nearby Berkeley. This property also included dormitories for women (Graves 1983:48,57,88). In 1949 the GGBTS was accredited by the State of California. "An exhaustive and thorough examination of the organization, faculty, program, and facilities was necessary before the coveted approval was procured. Since the State of California maintains high educational standards, the accreditation of the seminary is a noteworthy event" (Graves 1983:91). All of Herring's work contributed to the SBC accepting ownership of the school in May 1950 (Gateway Seminary 2021). Attendance had grown from 31 students in September 1946 to 177 in September 1950. Larger facilities were needed, and the GGBTS board voted to negotiate with Calvary Baptist Church for the adjacent property; plans were drawn up to accommodate 500 students, however, a loan for this work was never secured (Graves 1983:104-105).

Herring resigned his presidency in 1951 and was succeeded by Dr. Harold K. Graves from Oklahoma. Graves continued to expand the faculty and push for academic excellence. He arranged the lease of a house and 12-unit motel complex across the street from the Berkeley property to provide housing and dining facilities for single students; two houses that had been previously used as dorms were converted to office space; and he remodeled the interiors of existing facilities to maximize space (Graves 1983:130). During this time, he also continued Herring's search for a new location. In 1953 he led the acquisition of 148 acres of prime Marin County real estate, at the site of a dairy farm previously considered as a permanent location for the United Nations. Moving the GGBTS was a bold venture that would require the development and construction of all new facilities (Gateway Seminary 2021).

The campus buildings were designed by noted San Francisco architect John Carl Warnecke, known for Bay Area landmarks like Stanford University's Mapes Pavilion and the San Francisco Hilton. The campus landscape was planned and designed by influential landscape architect Lawrence Halprin who gained national attention with his work at the 1962 Seattle World's Fair and the Ghirardelli Square adaptive-reuse project in San Francisco. Halprin was also commissioned to design the landscapes at three residential colleges, Cowell College, Stevenson College, and Crown College, at the University of Santa Cruz in the 1950s. In the early 1970s, Warnecke and Halprin again worked together on the design of the United Nations Plaza at San Francisco's Civic Center (Gateway Seminary 2021; Wood 2019).

The GGBTS campus was opened in September 1959. Graves continued to lead the GGBTS until he retired and became president emeritus in 1977 (Gateway Seminary 2021; Wood 2019). Completed, the campus had nine buildings containing nearly 120,000 square feet of floor space, with 211 student housing units and spectacular views of San Francisco's skyline over the bay. Enrollment peaked in the 1970s at 750 students, most doing graduate work (Wood 2019).

Dr. William M. Pinson Jr., pastor of the First Baptist Church of Wichita Falls, Texas, became president of GGBTS after Graves in 1977. His five-year tenure saw the GGBTS continue to expand its visibility. Pinson led in the establishment of the GGBTS's regional campus in the Pacific Northwest. A steadily growing enrollment brought about the need for a new library and additional student housing at the Mill Valley Campus. They were completed before Pinson became executive director of the Baptist General Convention of Texas in 1982 (Gateway Seminary 2021).

Dr. Franklin D. Pollard, pastor of the First Baptist Church of San Antonio, Texas, was inaugurated as the fifth president of GGBTS in 1983. During his three-year administration, the GGBTS experienced the largest enrollment gain in its history, a 20 percent increase in the fall of 1984 over the previous fall. Pollard also led in a redevelopment of the GGBTS master plan so more students could study at GGBTS. He left in 1986 to become pastor of the First Baptist Church of Jackson, Mississippi (Gateway Seminary 2021).

Beginning in 1973 with the opening of the Orange County seminary, the GGBTS grew to have five campuses, which served Southern Baptist churches throughout the Western United States (Seminaries and Bible Colleges 2022).

- Seminary in Northern California, in Mill Valley, CA (San Francisco Bay Area)
- Seminary in Southern California, in Brea, CA (Orange County, California)
- Seminary in Arizona, in Scottsdale, AZ (Greater Phoenix, Arizona Area)
- Seminary in Washington, in Vancouver, WA (Greater Portland, Washington Area)
- Seminary in Colorado, in Centennial, CO (Denver Metropolitan Area)

In April 2014, the board of trustees voted to move the GGBTS's main campus from Mill Valley 400 miles south to Ontario, California and rename the school Gateway Seminary of the Southern Baptist Convention. The Marin campus was sold to North Coast Land Holdings for $84 million. In 2016, North Coast Land Holdings signed a three-year lease with Olivet University, a private evangelical Christian school. The Marin site is now called the Seminary at Strawberry and, besides having the university tenant, is a setting for weddings, seminars, and special events (Gateway Seminary 2021; Wood 2019).

2.2 SITE DEVELOPMENT HISTORY

Available online historical aerial imagery of the area is sporadic. The 1946 aerial shows the outline of the preliminary road Seminary Drive, and the campus area has been graded by 1956. By 1958, the outlines of interior roads are present, including modern day Shuck Drive, Judson Lane, Rice Lane, Hodges Drive, and Storer Drive, as well as the beginning stages of construction of the campus structures. The terraced parking lot at the GGBTS is also clearly visible. Residential development exponentially increased by 1968 with clusters along Oliver Lane, Race Lane, Lockett Lane, Chapel Drive, and along Seminary Drive and Strawberry Lane. By 1982, three elongated structures are present in the southwest corner of the campus. The 1993 aerial photograph shows a baseball diamond along Seminary Drive and Gilbert Drive; by 2018, the baseball diamond had been covered with grass, leaving what is today known as Seminary Playing Field (NETR 2022).

Historical photographs are also available from the Marin History Museum (Marin History Museum 2022). In the February 1959 photo below (Figure 2-1) the majority of residential apartments are visible, along with the cafeteria and administration building. The three apartment buildings west of Wallace Hall are not visible, nor are the three at south corner of Oliver Land and Shuck Drive (north of Maddox Hall). The seven apartment buildings north of the corner of Shuck Drive and Storer Drive had not been constructed, nor has Tichenor Village. The library, President's Home, and residences along Mission Drive and Chapel Drive intersection (Platt Village) had also not been constructed. The President's Home is visible in the August 1962 photo.

In September 1965 (Figure 2-2), the three apartment buildings west of Wallace Hall are now visible as are the three north of Maddox Hall (south corner of Oliver Land and Shuck Drive). The library, Tichenor Village, apartment buildings at the north corner of Shuck Drive and Storer Drive, and residences along Mission Drive and Chapel Drive intersection have yet to be constructed. The February 1966 photo depicts the same conditions.

Four of the apartment buildings at the north corner of Shuck Drive and Storer Drive are visible in the September 1968 photo, though the top three apartment buildings have yet to be constructed. It is unclear whether the residences along Mission Drive and Chapel Drive intersection have been constructed; the library and Tichenor Village have not. By April 1974 (Figure 2-3), the residences along Mission Drive and Chapel Drive intersection are visible, as are the final apartment buildings at the north corner of Shuck Drive and Storer Drive. The maintenance building is also visible. The presence of the library is unknown because that area of the campus is not visible in the photo; similarly, the photo is too dark and there are too many trees to tell if Tichenor Village has been constructed.

2.3 THE DESIGN TEAM

2.3.1 John Carl Warnecke

John Carl Warnecke was an award-winning architect based in the San Francisco Bay Area and was responsible for the design of numerous modernist buildings, schools, and monuments, both within the Bay Area and nation. Warnecke was born in Oakland, California on February 24, 1919. His father, Carl I. Warnecke, was a prominent Beaux Arts architect in Oakland and San Francisco, and one of the architects involved in the design of San Francisco City Hall (Smith 2010). Warnecke attended Stanford University where he met John F. Kennedy, when Kennedy was auditing business classes there. This meeting was the start of a longtime relationship that would provide Warnecke

Source: Courtesy of Marin History Museum

Figure 2-1 February 1959 Historic Aerial

Source: Courtesy of Marin History Museum

Figure 2-2 September 1965 Historic Aerial

Source: Courtesy of Marin History Museum

Figure 2-3 April 1974 Historic Aerial

opportunities for national recognition as his career matured. After Stanford, Warnecke attended Harvard University for his master's in architecture where he studied under the Modernist master, Walter Gropius. Soon he opened his own practice, first as a solo enterprise in 1950, then as firm in 1956. By 1977, Warnecke was running the largest architectural firm in the United States, with offices in San Francisco, Los Angeles, New York, Boston, Washington, and Honolulu (Grimes 2010). Warnecke was affiliated with the National Academy of Design and was the recipient of many awards, including a National Institute of Arts and Letters prize in 1957 and the Brunner Memorial Prize in 1958.

Warnecke pioneered the idea of contextual architecture, that modern buildings could be designed in sympathy with the natural and built context. Contextual architecture reflects the setting, forms, and details of a building's surrounding landscape, not building something that contrasts and feels out of place. In the late 1950s, the architectural profession did not generally acknowledge the neighboring built environment. His project for a U.S. embassy in Bangkok in 1956 was an unbuilt work that made his reputation. The proposed building drew on mainstream Western Modernist forms, melding them with designs observed by Warnecke in Bangkok. The result was an exotic mix that drew favorable reviews. The design consisted of several floors of cantilevered balconies with lacy pre-cast concrete railings around the main office core and central courtyard. The composition floated on thin white columns over a reflecting pond. Warnecke received a letter from Finnish-American architect and industrial designer Eero Saarinen praising the design for the embassy (NPS 2001).

Among significant works of this period by Warnecke's office were the John F. Kennedy Gravesite in Arlington National Cemetery (1966); the Hawaii State Capitol (1969) in Honolulu; Logan Airport South Terminal in Boston (1977), Lafayette Square in Washington DC (1962-72), the Soviet Embassy in Washington DC (1975); the Hart Senate Office Building in Washington DC (1982), and a Sports Arena at the University of Nevada in Las Vegas (1984). His designs reflected his passion for structures that harmonize with the environment and the heritage of the places in which they were built.

Located in downtown Honolulu, the Hawaii State Capitol was commissioned and dedicated by John A. Burns, second Governor of Hawaii. It opened on March 15, 1969, replacing the former statehouse, the 'Iolani Palace. The Hawaii State Capitol is an American adaptation of the Hakonya style termed "Hawaiian international architecture". It was designed by a partnership between the firms of Belt, Lemon, and Lo (Architects Hawaii Ltd.), and John Carl Warnecke and Associates. Unlike other state capitols modeled after the United States Capitol, the Hawaii State Capitol's distinct architectural features symbolize various natural aspects of Hawaii. The building is surrounded by a reflecting pool, symbolizing the Pacific Ocean. The two legislative chambers are cone-shaped, symbolizing volcanoes that formed the Hawaiian Islands. The columns around the perimeter of the building have shapes resembling royal palm trees. There are eight columns in four rows at either side of the building, representing the eight main islands of Hawaii; sets of eight items appear in other places inside and along the outside of the building. The Capitol is built with an open-air design, allowing sun, wind, and rain to enter; the central atrium opens to the sky and rainbows can sometimes be seen inside the building when it rains. When standing in the center of the structure, the chandeliers from both legislative chambers, which represent the sun and moon, can be seen through the glass walls, while the area that is normally reserved for a rotunda in most capitol buildings is left open to the sky (Architectuul 2022).

One of the best examples of Warnecke's contextual style is the Mira Vista Elementary School in Richmond (photos below). Not only does its design and orientation provide the best angle to capture natural light but it also mimics nearby natural forms—rocks, grass, and waves—so as to blend into and become part of the natural landscape (American Institute of Architects 2018). Other notable California schools designed by Warnecke include the White Oaks Elementary School in San Jose, the Cragmont Elementary School in Berkeley, the Frank C. Havens Elementary School in Piedmont, White Oaks Elementary School in San Carlos, and numerous buildings on the Stanford, UC Berkeley, and UC Santa Cruz campuses.

Mira Vista Elementary School, Richmond. 1951 (American Institute of Architects 2018).

Mira Vista Elementary School, Richmond. 1951 (American Institute of Architects 2018). https://aiacalifornia.org/post-war-schools-portfolio-ii-john-carl-warnecke-faia/

2.3.2 Lawrence Halprin

Lawrence Halprin was one of the most influential landscape architects of the latter 20th century. With a career spanning more than five decades, he designed significant projects overseas and across the United States including the landscapes for the Hebrew University in Jerusalem, Israel (1960), the 1962 Seattle's World Fair, the United Nations Plaza in San Francisco (1975), Park Central Square in Springfield, Missouri (1974; listed in the NRHP in 2010), and the entrance to Yosemite Falls in Yosemite National Park (completed 2005). His designs sought to impart positive social impact and user experience, as well as convey artistic expression by bringing nature into urban spaces in unprecedented ways (Los Angeles Conservancy 2020). Halprin's notable projects in Mill Valley include the landscape designs for the Mill Valley Public Library (1966) and the Green-Johnston House at 366 Summit Avenue (1961).

Halprin was born in New York City in 1916 and raised in Brooklyn. He earned a bachelor's degree in plant sciences from Cornell in 1939 and a master's degree in horticulture in 1941 from the University of Wisconsin. Halprin found his calling after visiting Frank Lloyd Wright's Taliesin studio in Wisconsin. He attended Harvard's Graduate School of Design on scholarship, studying under early Modern masters Walter Gropius and Marcel Breuer (Los Angeles Conservancy 2020). After being injured in a kamikaze attack during World War II, Halprin went to San Francisco to recuperate. It is there he came to work with famous San Francisco landscape architect Thomas Church until he started his own firm in 1949.

Stylistically, Halprin was part of the modernist design movement. Expanding upon the principles of landscape architecture pioneered by Frederick Law Olmsted, Halprin created new types of landscapes that were dynamic, environmentally sensitive, commemorative, and eco-friendly. One of his specialties was creating grand open space networks that were carved into declining infrastructure (Cultural Landscape Foundation 2016). Halprin, like Olmsted, wanted to take the viewer on a scenic journey so he scaled his designs with the human viewpoint in mind. However, unlike Olmsted, Halprin's landscapes were inspired by, but not imitative of, nature; his signature elements included scenic vegetation, striking water features (particularly fountains; see photo below), sculptures, terraced backdrops, native stones, and concrete (Los Angeles Conservancy 2020).

Ira Keller Fountain, Portland Oregon (Cultural Landscape Foundation 2016).

One of Halprin's earliest achievements was the kidney-shaped pool at the Donnell Garden was completed in 1948 (photo below). Designed by Church, in collaboration with Halprin while he was employed in the landscape architect's office, the pool's form interprets the salt marshes in the distance and may have been one of the country's first biomorphic pools (Cultural Landscape Foundation 2016). Its distinct shape, along with the abstracted sculpture by Adaline Kent, has become an icon of mid-century Modernism and California living.

Dewey Donnell Garden Pool (El Novillero) in Sonoma County (Cultural Landscape Foundation 2016).

Halprin was commissioned to design the landscapes at three of the residential colleges at the University of Santa Cruz in the 1950s: Cowell College, Stevenson College, and Crown College. His designs incorporated the redwood groves and ocean views that are characteristic of the campus as a whole, while his individual design aesthetic is evident in the concrete terraced patios and abstract sculptures and fountains (Cultural Landscape Foundation 2016). He also designed Sproul Plaza at University California Berkeley in 1962.

Sea Ranch, located on the Sonoma Coast, is his most well-known landscape project in the Bay Area (photo below). Halprin was hired to create a master plan for the residential community in 1965; he developed guidelines and recommendations for growth that are still adhered to today. Halprin integrated emerging environmental principals into his plan, attempting minimal intrusion into the native environment (see photo below). Houses were placed within the natural framework of the coastal hills, clustered between hedgerows to provide both wind protection and ocean views (Cultural Landscape Foundation 2016).

Sea Ranch, Sonoma Cost (Cultural Landscape Foundation 2016).

Halprin continued to create until his death in 2009 at the age of 93(Los Angeles Conservancy 2020). He received numerous awards during his lifetime, including being elected a fellow in the American Society of Landscape Architects in 1969, the Architects Institute of America Gold Medal Award in 1979, and the National Medal of Arts in 2002, presented by then-President George W. Bush.

3 STUDY METHODS

3.1 RECORDS SEARCH AND LITERATURE REVIEW

Ascent obtained a cultural resources records search from the Northwest Information Center (NWIC), which is located at Sonoma State University and is part of the California Historical Resources Information System. The records search and literature review provide for identification of previously documented archaeological sites and built environment features within and near the project area and is useful for developing a context to frame assessments of the significance of each archaeological site or built environment feature. Results were returned on November 17, 2021 (NWIC File No. 21-0671; see Appendix A).

- NRHP and CRHR: listed properties
- Historic Property Data File for Marin County
- California Inventory of Historical Resources
- California Historical Landmarks
- California Points of Historical Interest
- Historical General Land Office Maps

The records search revealed that five prior cultural resource studies have been completed within portions of the project site (Table 2-1). These five reports are all archaeological in nature. An additional 13 studies have been completed within the 0.25-mile search radius.

Table 2-1 Previous Reports Identified Within the Project Site

Report Number	Author and Year	Title
11757	Holman 1990	Archaeological Field Inspection of the Seminary Drive/Lot 25 Project Area, Strawberry Point, Marin County, California (letter report)
12050	Origer 1990	Archaeological Investigation at the Golden Gate Baptist Theological Seminary, Mill Valley, Marin County, California (letter report)
19354	Wiberg 1997	Archaeological Subsurface Mechanical Testing of the Seminary Ridge Project Area, Tiburon, Marin County, California
24547	Bryne 2001	Cultural Resources Inventory of APN 043-401-09, 153 Chapel Drive, Mill Valley, Marin County, California
37430	Evans 2010	A Cultural Resources Evaluation of the Golden Gate Baptist Theological Seminary for a Master Plan Amendment, 201 Seminary Drive, Mill Valley, Marin County, California

As a result of the previous surveys, three cultural resources have been previously recorded within the project site. These three resources are archaeological in nature and are discussed in the archaeological report, Cultural Resources Assessment for the North Coast Land Holdings Project, Mill Valley, Marin County, California (Hedges et al. 2020). No built-environment resources have been previously identified within the project site.

3.2 FIELD METHODS

Field work for the project was conducted on November 22, 2021, by architectural historian Alta Cunningham, who meets the Secretary of the Interior Professional Qualification Standards for Architectural History and History. Field work consisted of an intensive pedestrian survey of the built environment features within the project site 45 years or older. Areas that are part of the 130-acre campus property but not part of the current project and do not contain

built-environment features were not surveyed. Therefore, while the project site is approximately 130 acres, survey area was approximately 95 acres.

All features surveyed were subject to written documentation on appropriate Department of Parks and Recreation (DPR) 523 forms as appropriate. Photographs that documented major characteristics and notable alterations were also taken. Completed DPR forms are compiled in Appendix B.

4 HISTORICAL RESOURCE DESCRIPTIONS

4.1 GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY

GGBTS was recorded and evaluated as a potential historic district. Fifty-two historic-era buildings and structures were recorded, as shown below in Table 4-1 and in Figure 4-1. The majority of the 127-acre site is made up of 211 residential units, consisting of 16 studios, 54 one-bedroom housing units, 54 two-bedroom housing units, 18 three-bedroom housing units, three single-family homes, and 66 dormitory units (see representative photographs in Figures 4-2 through 4-4). The site also includes administrative offices, classroom space (see Figure 4-5), a library, and a cafeteria (see Figure 4-6).

Table 4-1 GGBTS Historic-era Buildings and Structures

Map ID	Name	Address	Year Constructed
1	Tichenor Village/Redford Hall	169 Chapel Dr	c. 1977 - 1982
2	Tichenor Village/Gray Hall	167 Chapel Dr	c. 1977 - 1982
3	Tichenor Village/ Lawrence Hall	165 Chapel Dr	c. 1977 - 1982
4	President's Home	157 Chapel Dr	c. 1959 - 1962
5	Missionary House	116 Mission Dr	c. 1968 - 1974
6	--	110/112 Chapel Dr	c. 1968 – 1974
7	--	16 Platt Ct	c. 1968 – 1974
8	--	20 Platt Ct	c. 1968 – 1974
9	--	26 Platt Ct	c. 1968 - 1974
10	Utility Building	--	c. 1958 - 1962
11	--	11 Judson Lane	c. 1962 - 1965
12	--	10 Judson Lane	c. 1962 - 1965
13	--	9 Judson Lane	c. 1962 - 1965
14	--	8 Judson Lane	1958-59
15	--	7 Judson Lane	1958-59
16	--	6 Judson Lane	1958-59
17	--	5 Judson Lane	1958-59
18	--	4 Judson Lane	1958-59
19	--	3 Judson Lane	1958-59
20	--	1 Rice Lane	1958-59
21	--	2 Rice Lane	1958-59
22	Wallace Hall		1958-59
23	Mahon Hall		1958-59
24	Carey Hall		1958-59
25	Graves Administration Building	201 Seminary Drive	1958-59
26	Academic Building		1958-59
27	Library		c. 1977 - 1982
28	Cafeteria		1958-59
29	Mallory Hall	403 Storer Drive	1958-59

Map ID	Name	Address	Year Constructed
30	Truett Hall	401 Storer Drive	1958-59
31	--	300 Storer Drive	c. 1956 - 1958
32	Landscape Department		by 1974
33	--	5 Oliver Lane	1958-59
34	--	4 Oliver Lane	1958-59
35	--	3 Oliver Lane	1958-59
36	--	2 Oliver Lane	c. 1962 - 1965
37	--	1 Oliver Lane	c. 1962 - 1965
38	--	1 Foreman Lane	c. 1962 - 1965
39	--	7 Foreman Lane	1958-59
40	Bagby Hall	--	1958-59
41	Gill Hall	--	1958-59
42	Maddox Hall	--	1958-59
43	--	1 Lockett Lane	c. 1966 and 68
44	--	2 Lockett Lane	c. 1966 and 68
45	--	3 Lockett Lane	c. 1966 and 68
46	--	4 Lockett Lane	c. 1966 and 68
47	Laundry Room	--	c. 1966 and 68
48	--	7 Green Lane	c. 1968 and 74
49	--	6 Green Lane	c. 1968 and 74
50	--	5 Green Lane	c. 1968 and 74
51	Footbridge	--	post-1968
52	Bus Stop	--	unknown

The topography of the project site consists primarily of hillsides and knolls on the peninsula with a range of elevations from approximately 12 to 2,230 feet above mean sea level. Existing landscape within the project site includes a number of vegetation communities, including Monterey pine woodland on the southern knoll and seminary point, California sagebrush scrub on seminary point, and various planted landscape areas throughout the campus. Sensitive vegetation communities include purple needlegrass grassland and coast live oak woodland.

The eastern portion of the project site includes the academic campus and associated facilities. The Seminary Playing Field is located west of the academic campus, at the topographically lowest point of the project site. Residential uses are located throughout the project site.

The existing circulation pattern consists of private internal streets. There are no existing dedicated bicycle facilities on the internal streets. Existing bicycle features are present around the perimeter of the project site, including Class II bike lanes (i.e., dedicated on-street bike lanes) on Seminary Drive and Class III bike routes (i.e., signed, shared roadways) on Strawberry Drive.

In total, 608 existing parking spaces are located throughout the project site, including 311 residential parking spaces and 297 parking spaces for the academic campus. Residential parking is dispersed throughout the project site in various surface lots adjacent to the residential structures. Parking for the academic campus is clustered in a central three-tiered parking lot, bounded by Foreman Drive to the west and Gilbert Drive to the north, east, and south.

Source: Adapted by Ascent Environmental in 2021

Figure 4-1 Built Environment Features

Source: Ascent Environmental 2021

Tichenor Village.

Source: Ascent Environmental 2021

Judson Lane.

Figure 4-2. Residence Overviews - Apartments

Source: Ascent Environmental 2021

Wallace, Mahon, and Carey Halls.

Source: Ascent Environmental 2021

Truett Hall.

Figure 4-3. Residence Overviews - Dormitories

Source: Ascent Environmental 2021

Bagby, Gill, and Maddox Halls.

Source: Ascent Environmental 2021

Footbridge.

Figure 4-4. Dormitory Overview and Footbridge

Source: Ascent Environmental 2021

Administration Building.

Source: Ascent Environmental 2021

Academic Building.

Figure 4-5. Administration and Academic Buildings

Source: Ascent Environmental 2021

Library.

Source: Ascent Environmental 2021

Cafeteria.

Figure 4-6. Library and Cafeteria Buildings

4.2 ADMINISTRATION BUILDING

The administration building is a two-story, 25,200-sf building with a rectangular plan. The building has a side-gabled roof clad in Spanish tiles with moderate eaves. On the east end of the building and along the primary façade, the first floor extends out passed the footprint of the second floor. This extension has a break along the primary façade to create the main entrance. The building features a curtainwall system with awning windows; metal panels are located at the base. Exposed concrete is visible at the gabled ends. Due to elevation changes accommodated by a staircase and retaining rock wall, only the second floor is visible from the majority of the courtyard at the rear, southern façade. A recessed secondary entrance, in-line with the primary entrance, is located on the southern façade.

4.3 ACADEMIC BUILDING

The academic building is a two-story, 51,200-sf building with a hyphenated rectangular plan; the building is composed of four masses connected by narrow, single-story hyphens. The building has a side-gabled roof clad in Spanish tiles with moderate eaves. Exposed concrete is visible at the gabled ends. The building features a curtainwall system with awning windows; metal panels are located at the base. The building is accessed from the courtyard located behind the administration building; double glass doors are located at each recessed hyphen. The southernmost hyphen is designed at a 90-degree angle. As with the administration building, only the second floor is visible from the courtyard.

4.4 CAFETERIA BUILDING

The cafeteria building is a one-story building with a raised basement exposed on the east end on the downhill side of the site. The building has a front gabled roof with wide eaves and clad in clay tiles and rectangular footprint. The exposed basement appears to be constructed of concrete while the first floor is a metal framed glass curtain walls. The primary (western) façade includes two sets of glazed, aluminum framed double doors and the rest of the wall consists of fixed glass panels that are both clear and opaque. A full façade, wooden, slated privacy screen supports the wide eave; this also creates a cover for the entry ways.

The southern façade includes a small portion of the raised basement at the eastern end of the façade; one door and two large vents are present. The first-floor level included a pair of solid doors; the rest of the wall consists of fixed glass panels that are both clear and opaque. The eastern façade includes the exposed portion of the raised basement the full length of the façade; there are number of solid doors and vents. The first-floor level includes fixed glass panels that are both clear and opaque.

5 HISTORICAL RESOURCES EVALUATION

5.1 GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY

To be considered eligible for listing in the NRHP/CRHR under Criterion A/1, a property must be associated with events that have made a significant contribution to the broad patterns of our nation's, California's, or local history. GGBTS is proclaimed as the first Baptist Seminary in the west. However, this is more correctly stated for the Berkeley campus, which was established in 1947, more than a decade prior to the Marin campus. It was at the Berkeley campus where residences were established, including dormitories for women, were GGBTS was accredited by the State of California in 1949, and where the SBC accepted ownership of the school in May 1950. Therefore, although the Marin campus of GGBTS is associated with the continued growth of the Southern Baptist Seminary in California and the west, GGBTS was fully established and growing while at the Berkeley campus. Historical research revealed no specific contributions to the Southern Baptist Convention's growth once the campus moved to Marin. Because the historic record does not show the property to be associated with events that have made a significant contribution to history, it does not appear to meet NRHP/CRHR Criterion A/1.

To be considered eligible for listing in the NRHP/CRHR under Criterion B/2, a property must be associated with the lives of persons significant in our past. It must be shown that the person gained importance within his or her profession or group while working in the building. The establishment of a Baptist seminary in California is credited to Isam B. Hodges, and the expansion of GGBTS in Berkeley is credited to Dr. Benjamin O. Herring and Dr. Harold K. Graves. Although Graves was responsible for the founding of the Marin campus of GGBTS, this does not rise to the level of significance necessary for NRHP or CRHR consideration. Also, while the Marin campus of GGBTS was designed by John Carl Warnecke and Lawrence Halprin, this property does not appear to be the most representative example of their work, discussed further under Criterion C. Therefore, the Marin campus of GGBTS does not appear to meet NRHP/CRHR Criterion B/2.

Under NRHP/CRHR Criterion C/3, a property must embody distinctive characteristics of a type, period, or method of installation, or represent the work of a master, or possess high artistic values. The GGBTS campus was designed by architect John Carl Warnecke and landscape architect Lawrence Halprin. Warnecke specialized in modernist designs, such as the Hawaii State Capitol building, and contextual architecture that reflected his passion for structures that harmonized with the environment, as seen in Mira Vista Elementary School. Halprin specialized in bringing nature into urban spaces, especially through water features, as seen in the Ira Keller Fountain, and designing landscapes that were inspired by nature, such as Sea Ranch. The GGBTS campus buildings are not examples of modernist work and there is minimal landscaping. While the GGBTS property has a park-like setting and the hillside is mirrored in the terracing of buildings and the main parking lot, the campus is not representative of Warnecke's or Halprin's work. As a whole, the GGBTS campus lacks the architectural and design values of both masters, and therefore does not appear to possess sufficient design or construction value to warrant inclusion in the NRHP/CRHR under Criterion C/3.

Criterion D/4 generally applies to archaeological resources, or other resources that through study of construction details can provide information that cannot be obtained in other ways. Construction details about GGBTS have been documented and are stored at the Gateway Seminary library in Ontario, California. The property does not appear to be significant under this criterion because it is not likely to yield any additional important information about our history.

GGBTS retains its integrity. The property has had no demolitions or additions which detract from the original design, materials, workmanship, or feeling of the buildings or campus. While some buildings were constructed at a later time, such as the library and Tichenor Village, these additions were done in such a way as to be compatible with the original design of the buildings and campus. None have been moved from their original location; therefore, GGBTS retains integrity of association and setting. However, eligibility for listing on the NRHP and the CRHR rests on twin factors of significance and integrity. A resource must have both significance and integrity to be considered eligible. Loss of integrity, if sufficiently great, will become more important than the historical significance a resource may possess and render it ineligible. Likewise, a resource can have complete integrity, but if it lacks significance, it must

also be considered ineligible. Therefore, although GGBTS retains its integrity, it lacks significance and therefore does not appear eligible for listing in either the CRHR or the NRHP.

5.2 ADMINISTRATION BUILDING

To be considered eligible for listing in the NRHP/CRHR under Criterion A/1, a building must be associated with events that have made a significant contribution to the broad patterns of our nation's, California's, or local history. The administration building was constructed to help facilitate activities at GGBTS. The historic record did not show that the construction of this building was associated with any noteworthy or specific programs to advance GGBTS or the SBC. Because the historic record does not show the building to be associated with events that have made a significant contribution to history, it does not appear to meet NRHP/CRHR Criterion A/1.

To be considered eligible for listing in the NRHP/CRHR under Criterion B/2, a building must be associated with the lives of persons significant in our past. It must be shown that the person gained importance within his or her profession or group while working in the building. The GGBTS was a respected program that reflected the work and contributions of many people; however, historical research did not reveal specific individually significant researchers or lecturers that have direct important association with the administration building. Also, while the building was designed by John Carl Warnecke, it does not appear to be the most representative example of his work, discussed further under Criterion C. Therefore, the administration building does not appear to meet NRHP/CRHR Criterion B/2.

Under NRHP/CRHR Criterion C/3, a building must embody distinctive characteristics of a type, period, or method of installation, or represent the work of a master, or possess high artistic values. The administration building was designed by architect John Carl Warnecke who specialized in modernist designs, such as the Hawaii State Capitol building, and contextual architecture that reflected his passion for structures that harmonized with the environment, as seen in Mira Vista Elementary School. The administration building is a typical institutional design, not representative of modernist design or Warnecke's typical work. While the administration building is the work of a master, it lacks architectural distinction, does not have artistic qualities, and therefore does not appear to possess sufficient design or construction value to warrant inclusion in the NRHP/CRHR under Criterion C/3.

Criterion D/4 generally applies to archaeological resources, or other resources that through study of construction details can provide information that cannot be obtained in other ways. Construction details about the administration building has been documented and are stored at the Gateway Seminary library in Ontario, California. The building does not appear to be significant under this criterion because it is not likely to yield any additional important information about our history.

The administration building retains its integrity. The building has had no known alterations which detract from the original design, materials, workmanship, or feeling of the buildings. The building has not been moved from its original location, and therefore retains integrity of association and setting. However, eligibility for listing on the NRHP and the CRHR rests on twin factors of significance and integrity. A resource must have both significance and integrity to be considered eligible. Loss of integrity, if sufficiently great, will become more important than the historical significance a resource may possess and render it ineligible. Likewise, a resource can have complete integrity, but if it lacks significance, it must also be considered ineligible. Therefore, although the administration building retains integrity, it lacks significance and therefore does not appear eligible for listing in either the CRHR or the NRHP.

5.3 ACADEMIC BUILDING

To be considered eligible for listing in the NRHP/CRHR under Criterion A/1, a building must be associated with events that have made a significant contribution to the broad patterns of our nation's, California's, or local history. The academic building was constructed to help facilitate the goal of the GGBTS and the SBC. The historic record did not show that the construction of this building was associated with any noteworthy or specific programs to advance GGBTS or the SBC. Because the historic record does not show the academic building to be associated with events that have made a significant contribution to history, it does not appear to meet NRHP/CRHR Criterion A/1.

To be considered eligible for listing in the NRHP/CRHR under Criterion B/2, a building must be associated with the lives of persons significant in our past. It must be shown that the person gained importance within his or her profession or group while working in the building. The GGBTS was a respected program that reflected the work and contributions of many people; however, historical research did not reveal specific individually significant researchers or lecturers that have direct important association with the academic building. Also, while the building was designed by John Carl Warnecke, it does not appear to be the most representative example of his work, discussed further under Criterion C. Therefore, the academic building does not appear to meet NRHP/CRHR Criterion B/2.

Under NRHP/CRHR Criterion C/3, a building must embody distinctive characteristics of a type, period, or method of installation, or represent the work of a master, or possess high artistic values. The academic building was designed by architect John Carl Warnecke who specialized in modernist designs, such as the Hawaii State Capitol building, and contextual architecture that reflected his passion for structures that harmonized with the environment, as seen in Mira Vista Elementary School. The academic building is a typical institutional design, not representative of modernist design or Warnecke's typical work. While the academic building is the work of a master, it lacks architectural distinction, does not have artistic qualities, and therefore does not appear to possess sufficient design or construction value to warrant inclusion in the NRHP/CRHR under Criterion C/3.

Criterion D/4 generally applies to archaeological resources, or other resources that through study of construction details can provide information that cannot be obtained in other ways. Construction details about the academic building has been documented and are stored at the Gateway Seminary library in Ontario, California. The building does not appear to be significant under this criterion because it is not likely to yield any additional important information about our history.

The academic building retains its integrity. The building has had no known alterations which detract from the original design, materials, workmanship, or feeling of the buildings. The building has not been moved from its original location, and therefore retains integrity of association and setting. However, eligibility for listing on the NRHP and the CRHR rests on twin factors of significance and integrity. A resource must have both significance and integrity to be considered eligible. Loss of integrity, if sufficiently great, will become more important than the historical significance a resource may possess and render it ineligible. Likewise, a resource can have complete integrity, but if it lacks significance, it must also be considered ineligible. Therefore, although the academic building retains integrity, it lacks significance and therefore does not appear eligible for listing in either the CRHR or the NRHP.

5.4 CAFETERIA BUILDING

To be considered eligible for listing in the NRHP/CRHR under Criterion A/1, a property must be associated with events that have made a significant contribution to the broad patterns of our nation's, California's, or local history. The potential significance of the cafeteria can best be understood in the context of the whole GGBTS campus and was evaluated as such in the District Evaluation. The District Evaluation determined that because the historic record did not show the property to be associated with events that have made a significant contribution to history, it did not appear to meet NRHP/CRHR Criterion A/1. No additional information has been discovered that would indicate that the Cafeteria individually made a significant contribution to the broad patterns of our nation's, California's, or local history; therefore, it does not appear to meet NRHP/CRHR Criterion A/1 as an individual property.

To be considered eligible for listing in the NRHP/CRHR under Criterion B/2, a property must be associated with the lives of persons significant in our past. It must be shown that the person gained importance within his or her profession or group while working in the building. The establishment of a Baptist seminary in California is credited to Isam B. Hodges and the expansion of GGBTS in Berkeley is credited to Dr. Benjamin O. Herring and Dr. Harold K. Graves. The potential significance of the cafeteria can best be understood in the context of the whole GGBTS campus and was evaluated as such in the District Evaluation. The District Evaluation determined that although Graves was responsible for the founding of the Marin campus of GGBTS, this does not rise to the level of significance necessary for NRHP or CRHR consideration and the Marin campus of GGBTS does not appear to meet NRHP/CRHR Criterion B/2. Also, while the Marin campus of GGBTS was designed by John Carl Warnecke and Lawrence Halprin, archival

research has revealed no such association with regards to the cafeteria, discussed further under Criterion C. Therefore, the Cafeteria does not appear to meet NRHP/CRHR Criterion B/2 as an individual property.

Under NRHP/CRHR Criterion C/3, a property must embody distinctive characteristics of a type, period, or method of installation, or represent the work of a master, or possess high artistic values. The potential significance of the Cafeteria can best be understood in the context of the whole GGBTS campus and was evaluated as such in the District Evaluation. While the GGBTS campus was designed by architect John Carl Warnecke and landscape architect Lawrence Halprin, significant figures in the fields of architecture, the District Evaluation determined that the campus was not representative of Warnecke's or Halprin's work and did not appear eligible for inclusion in the NRHP/CRHR under Criterion C/3. While the GGBTS campus was designed by architect John Carl Warnecke and landscape architect Lawrence Halprin archival research as revealed no such association with regards to the Cafeteria. The architect and builder of the Cafeteria are unknown and the building lacks the architectural and design values of a master, therefore does not appear to possess sufficient design or construction value to warrant inclusion in the NRHP/CRHR under Criterion C/3.

Criterion D/4 generally applies to archaeological resources, or other resources that through study of construction details can provide information that cannot be obtained in other ways. Construction details about the Cafeteria with regards to alterations and additions are unknown; however, the property does not appear to be significant under this criterion because it is not likely to yield any additional important information about our history.

The cafeteria retains its integrity. The property has had visible no demolitions or additions which detract from the original design, materials, workmanship, or feeling of the building. The building has not been moved from its original location and no major alterations through the construction or demolition of surrounding buildings, structures, of features has occurred; therefore, the cafeteria retains integrity of location, association, and setting. However, eligibility for listing on the NRHP and the CRHR rests on twin factors of significance and integrity. A resource must have both significance and integrity to be considered eligible. Loss of integrity, if sufficiently great, will become more important than the historical significance a resource may possess and render it ineligible. Likewise, a resource can have complete integrity, but if it lacks significance, it must also be considered ineligible. Therefore, although the cafeteria retains its integrity, it lacks significance and therefore does not appear eligible for listing in either the CRHR or the NRHP

6 FINDINGS AND RECOMMENDATIONS

This investigation recorded and evaluated the GGBTS at a district level; the property is recommended not eligible for inclusion in the NRHP and CRHR. The GGBTS in Marin County does not appear to meet any of the criteria necessary for listing in the NRH or the California Register of Historical Resources CRHR. The property is not associated with important events or people in history, is not representative of the typical work of John Carl Warnecke and Lawrence Halprin and is not likely to yield any additional important information about our history. Similarly, the administration and academic buildings were evaluated for individual NRHP- and CRHR-eligibility and recommended not eligible. Therefore, the project would have no impact on historical resources for the purposes of CEQA. No further investigation or treatment measures are recommended.

7 REFERENCES

American Institute of Architects. 2018 (January). Post-War Schools Portfolio II: John Carl Warnecke, FAIA. Available: https://aiacalifornia.org/post-war-schools-portfolio-ii-john-carl-warnecke-faia/. Accessed May 28, 2022.

Architectuul. 2022. Hawaii State Capitol. Available: http://architectuul.com/architecture/hawaii-state-capitol. Accessed May 28, 2022.

Baker, Robert A. 1979. Baptist History and Heritage Society. "Southern Baptist Beginnings". Available: https://www.baptisthistory.org/baptistorigins/southernbaptistbeginnings.html. Accessed February 21, 2022.

Cultural Landscape Foundation. 2016. The Landscape Architecture of Lawrence Halprin. Available: https://tclf.org/sites/default/files/microsites/halprinlegacy/. Accessed November 4, 2021.

Fahmy, Dalia. 2019. Pew Research Center. "7 Facts about Southern Baptists." Available: https://www.pewresearch.org/fact-tank/2019/06/07/7-facts-about-southern-baptists/. Accessed February 21, 2022.

Fairchild, Mary. 2019. Learn Religions. "Southern Baptist History". Available: https://www.learnreligions.com/southern-baptist-church-history-700525. Accessed February 21, 2022.

Gateway Seminary. 2021. Seminary History. Available: www.gs.edu/about/seminary-history/. Accessed June 29, 2021.

Graves, Harold K. 1983. Into the Wind: Personal Reflections on the Early Years of Golden Gate Baptist Theological Seminary. Nashville, Tennessee: Broadman Press.

Grimes, William. 2010. The New York Times. John Carl Warnecke, Architect to Kennedy, Dies at 91. April 22, 2010. Available: https://www.nytimes.com/2010/04/23/arts/design/23warnecke.html

Los Angeles Conservancy. 2020. Lawrence Halprin. Available: https://www.laconservancy.org/architects/lawrence-halprin. Accessed November 4, 2021.

Main History Museum. 2022. Artifacts, Photographs & Archives. Online Collections Database. Available: https://marinhistory.pastperfectonline.com/photo?only_images=on&page=1&search_criteria=seminary&utf8=%E2%9C%93.

National Park Service (NPS). 2001. National Historic Landmark Nomination form for Mabel McDowell Elementary School. NRHP Reference No. 1000068. Prepared by Storrow Kinsella Partnership Inc.

National Environmental Title Research (NETR), LLC. 2022. 1956, 1958, 1968, 1982, 1987, 1993, 2016, 2018 Aerial Photographs of Project Site. Available: http://www.historicaerials.com/. Accessed May 2022.

Seminaries and Bible Colleges. 2022. Golden Gate Baptist Theological Seminary. Available: http://seminariesandbiblecolleges.com/golden-gate-baptist-theological-seminary/. Accessed February 15, 2022.

Smith, Chris. 2010. The Press Democrat. John 'Jack' Warnecke, famed architect, dies at Sonoma County ranch. April 20, 2010. Available: https://www.pressdemocrat.com/article/news/john-jackwarnecke-famed-architect-dies-at-sonoma-county-ranch/

Wood, Jim. 2019. Marin Magazine. "The First Baptist Theological School in the Western US". Available: marinmagazine.com/arts-events/things-to-do/the-first-baptist-theological-school-in-the-western-us/. Accessed July 26, 2021.

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Appendix A

Record Search Results

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

ALAMEDA
COLUSA
CONTRA COSTA
DEL NORTE
HUMBOLDT
LAKE
MARIN
MENDOCINO
MONTEREY
NAPA
SAN BENITO
SAN FRANCISCO
SAN MATEO
SANTA CLATA
SANTA CRUZ
SOLANO
SONOMA
YOLO

Northwest Information Center
Sonoma State University
1400 Valley House Drive, Suite 210
Rohnert Park, California 94928-3609
Tel: 707.588.8455
nwic@sonoma.edu
http://nwic.sonoma.edu

11/17/2021 NWIC File No.: 21-0671

Alta Cunningham
Ascent Environmental, Inc.
455 Capitol Mall, Suite 300
Sacramento, CA 95814

Re: 20210009.01 - Marin Co - North Coast Land Holdings

The Northwest Information Center received your record search request for the project area referenced above, located on the San Rafael and San Quentin USGS 7.5' quad(s). The following reflects the results of the records search for the project area and a one-quarter mile radius:

Resources within project area:	P-21-000049, P-21-002688, P-21-002689
Resources within ¼-mile radius:	P-21-000047, P-21-000048, P-21-000050, P-21-000051, P-21-000054
Reports within project area:	S-11757, S-12050, S-19354, S-24547, S-37430
Reports within ¼-mile radius:	S-00869, S-00942, S-01003, S-02606, S-07899, S-10071, S-12466, S-17568, S-22009, S-36031, S-44351

Resource Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed
Report Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed
Report Copies:	☒ enclosed	☐ not requested	☐ nothing listed
OHP Built Environment Resources Directory:	☒ enclosed	☐ not requested	☐ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed
CA Inventory of Historic Resources (1976):	☐ enclosed	☐ not requested	☒ nothing listed
Caltrans Bridge Survey:	☐ enclosed	☒ not requested	☐ nothing listed
Ethnographic Information:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Literature:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Maps:	☐ enclosed	☒ not requested	☐ nothing listed
Local Inventories:	☐ enclosed	☒ not requested	☐ nothing listed
GLO and/or Rancho Plat Maps:	☐ enclosed	☒ not requested	☐ nothing listed
Shipwreck Inventory:	☐ enclosed	☒ not requested	☐ nothing listed

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

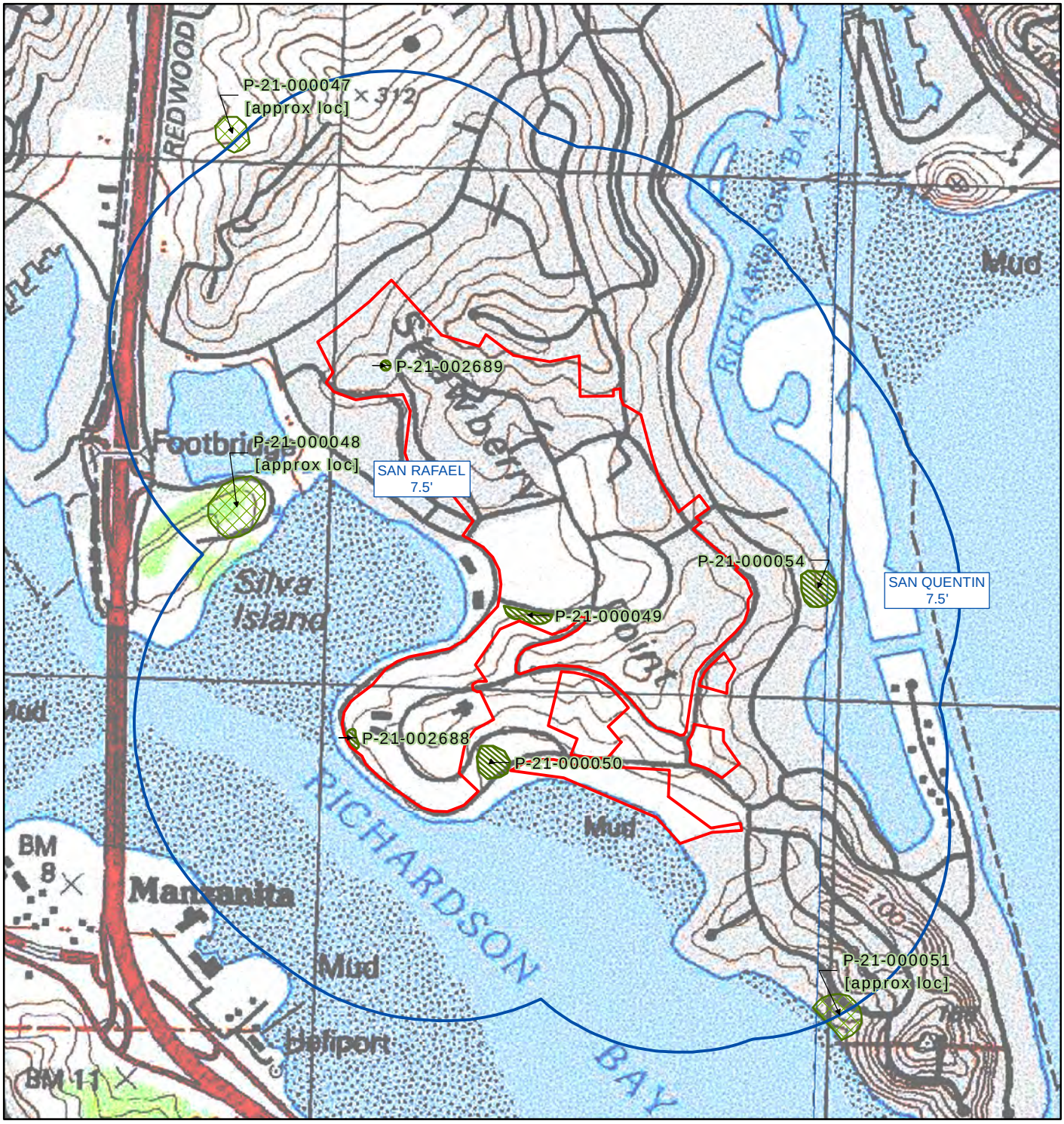
Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Jessika Akmenkalns, Ph.D.
Researcher

Resource Map
20210009.01 - Marin Co - North Coast Land Holdings



Northwest Information Center
File #21-0671 17 Nov 2021 J. Akmenkalns
May depict confidential cultural resource locations.
Do not distribute.

Feet 0 320 640 960 1,280
Meters 0 60 120 180 240 300

N

Project Area | One-Quarter Mile Radius | Quad outlines
Resources (polygons)
Resources approx loc

Resource Detail: P-21-000049

20210009.01 - Marin Co - North Coast Land Holdings

Identifying information

Primary No.: P-21-000049
Trinomial: CA-MRN-000018
Name: Nelson No. 18
Other IDs:

Type	*Name*
Resource Name	Nelson No. 18
Other	CA-Mrn-18
Other	Between Gilbert Drive and Willis Drive

Cross-refs:

Attributes

Resource type: Site
Age: Prehistoric
Information base: Survey
Attribute codes: AP15 (Habitation debris)
Disclosure: Not for publication
Collections: No
Accession no(s):
Facility:

General notes

Recording events

	Date	*Recorder(s)*	*Affiliation*	*Notes*
a	7/20/1971	N.C. Nelson	University of California, Berkelay	
b	1/1/1974	Moratto et al	[none]	Map of Nelson Shellmounds
c	3/22/2010	Sally Evans	Archaeological Resource Service	

Associated reports

Report No.	*Year*	*Title*	*Affiliation*
S-012050	1990	Archaeological Investigation at the Golden Gate Baptist Theological Seminary,Mill Valley, Marin County, California (letter report)	
S-037430	2010	A Cultural Resources Evaluation of the Golden Gate Baptist Theological Seminary for a Master Plan Amendment, 201 Seminary Drive, Mill Valley, Marin County, California	Archaeological Resource Service

Location information

County: Marin
USGS quad(s): San Rafael
Address:

Address	*City*	*Assessor's parcel no.*	*Zip code*
201 Seminary Drive	Mill Valley	043-401-016	

PLSS:
UTMs: Zone 10 543270mE 4193050mN NAD27 (NWIC staff)
Zone 10 543380mE 4193150mN NAD83 (2010 record)

Management status

Database record metadata

	Date	*User*	
Entered:	4/1/2005	icrds	
Last modified:	5/29/2019	guldenbreinj	
IC actions:	*Date*	*User*	*Action taken*
	5/29/2019	guldenbreinj	Added Moratto et all 1974 map of Nelson Shellmounds
	4/1/2005	jay	Appended records from discontinued ICRDS.

Record status: Verified

Resource Detail: P-21-002688

20210009.01 - Marin Co - North Coast Land Holdings

Identifying information

Primary No.: P-21-002688
Trinomial:
Name: ARS 10-006-01
Other IDs:

Type	*Name*
Resource Name	ARS 10-006-01
Other	201 Seminary Drive

Cross-refs:

Attributes

Resource type: Site
Age: Prehistoric
Information base: Survey
Attribute codes: AP15 (Habitation debris)
Disclosure: Not for publication
Collections: No
Accession no(s):
Facility:

General notes

Recording events

Date	*Recorder(s)*	*Affiliation*	*Notes*
3/23/2010	Sally Evans	Archaeological Resource Service	

Associated reports

Report No.	*Year*	*Title*	*Affiliation*
S-037430	2010	A Cultural Resources Evaluation of the Golden Gate Baptist Theological Seminary for a Master Plan Amendment, 201 Seminary Drive, Mill Valley, Marin County, California	Archaeological Resource Service

Location information

County: Marin
USGS quad(s): San Rafael
Address:

Address	*City*	*Assessor's parcel no.*	*Zip code*
201 Seminary Drive	Mill Valley	043-401-016	94941

PLSS: T1N R6W Sec. MDBM
UTMs: Zone 10 543050mE 4192050mN NAD27 (Site Record, 2010 Wrong Location)
Zone 10 542963mE 4193091mN NAD83 (NWIC 2010)

Management status

Database record metadata

	Date	*User*	
Entered:	11/1/2010	neala	
Last modified:	10/20/2020	hagell	
IC actions:	*Date*	*User*	*Action taken*
	11/1/2010	neala	number assigned
	10/20/2020	hagell	edited recording event

Record status: Verified

Resource Detail: P-21-002689

20210009.01 - Marin Co - North Coast Land Holdings

Identifying information

Primary No.: P-21-002689
Trinomial:
Name: ARS 10-006-02
Other IDs:

Type	*Name*
Resource Name	ARS 10-006-02
Other	201 Seminary Drive

Cross-refs:

Attributes

Resource type: Site
Age: Prehistoric
Information base: Survey
Attribute codes: AP12 (Quarry)
Disclosure: Not for publication
Collections: No
Accession no(s):
Facility:

General notes

Recording events

Date	*Recorder(s)*	*Affiliation*	*Notes*
3/22/2010	Sally Evans	Archaeological Resource Service	

Associated reports

Report No.	*Year*	*Title*	*Affiliation*
S-037430	2010	A Cultural Resources Evaluation of the Golden Gate Baptist Theological Seminary for a Master Plan Amendment, 201 Seminary Drive, Mill Valley, Marin County, California	Archaeological Resource Service

Location information

County: Marin
USGS quad(s): San Rafael
Address:

Address	*City*	*Assessor's parcel no.*	*Zip code*
201 Seminary Drive	Mill Valley	043-261-025	

PLSS: T1N R6W Sec. MDBM
UTMs: Zone 10 543110mE 4193620mN NAD27

Management status

Database record metadata

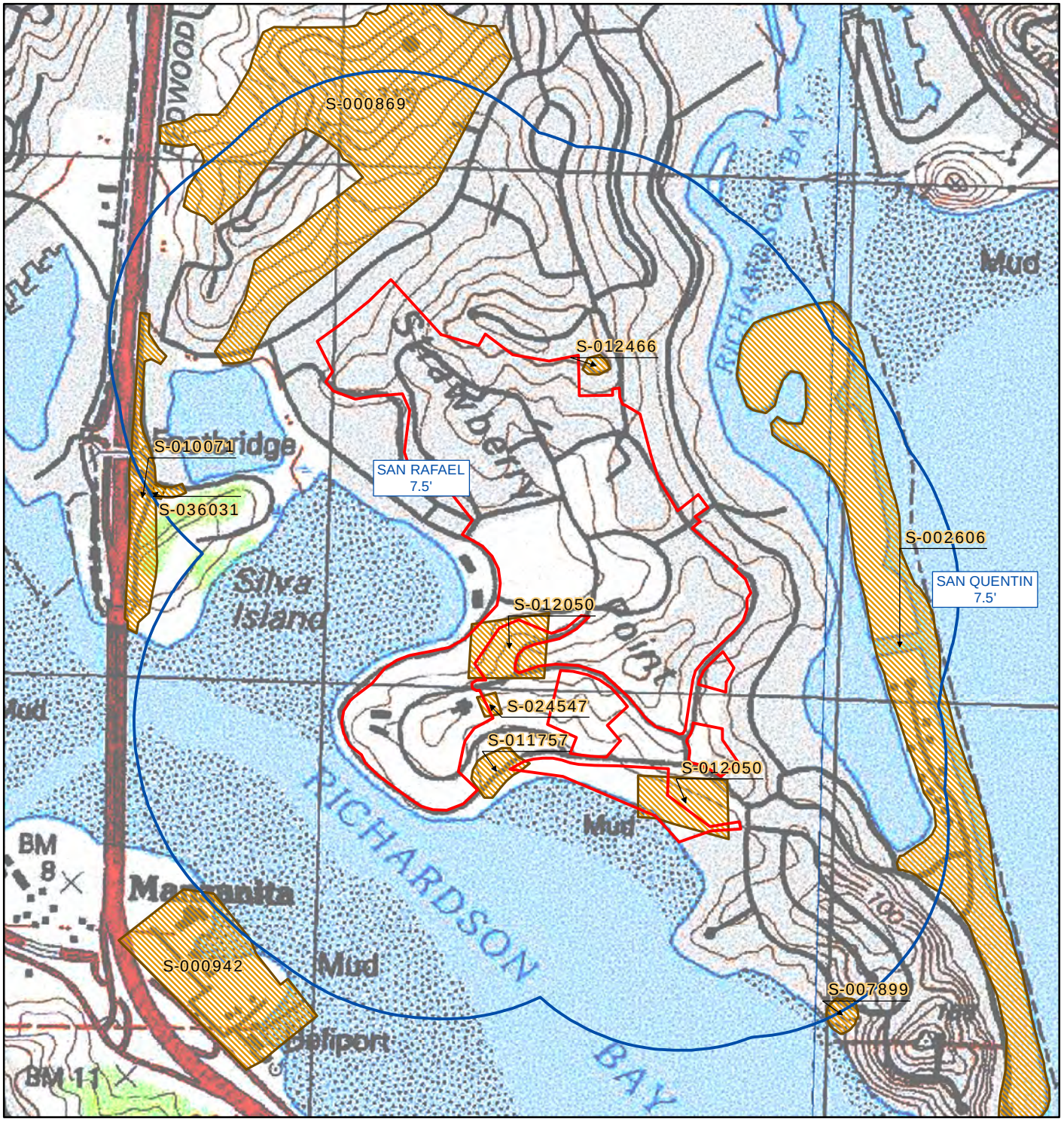
	Date	*User*
Entered:	11/1/2010	neala
Last modified:	10/20/2020	hagell

IC actions:

Date	*User*	*Action taken*
11/1/2010	neala	number assigned
10/20/2020	hagell	edited recording event

Record status: Verified

Report Map No. 1
20210009.01 - Marin Co - North Coast Land Holdings

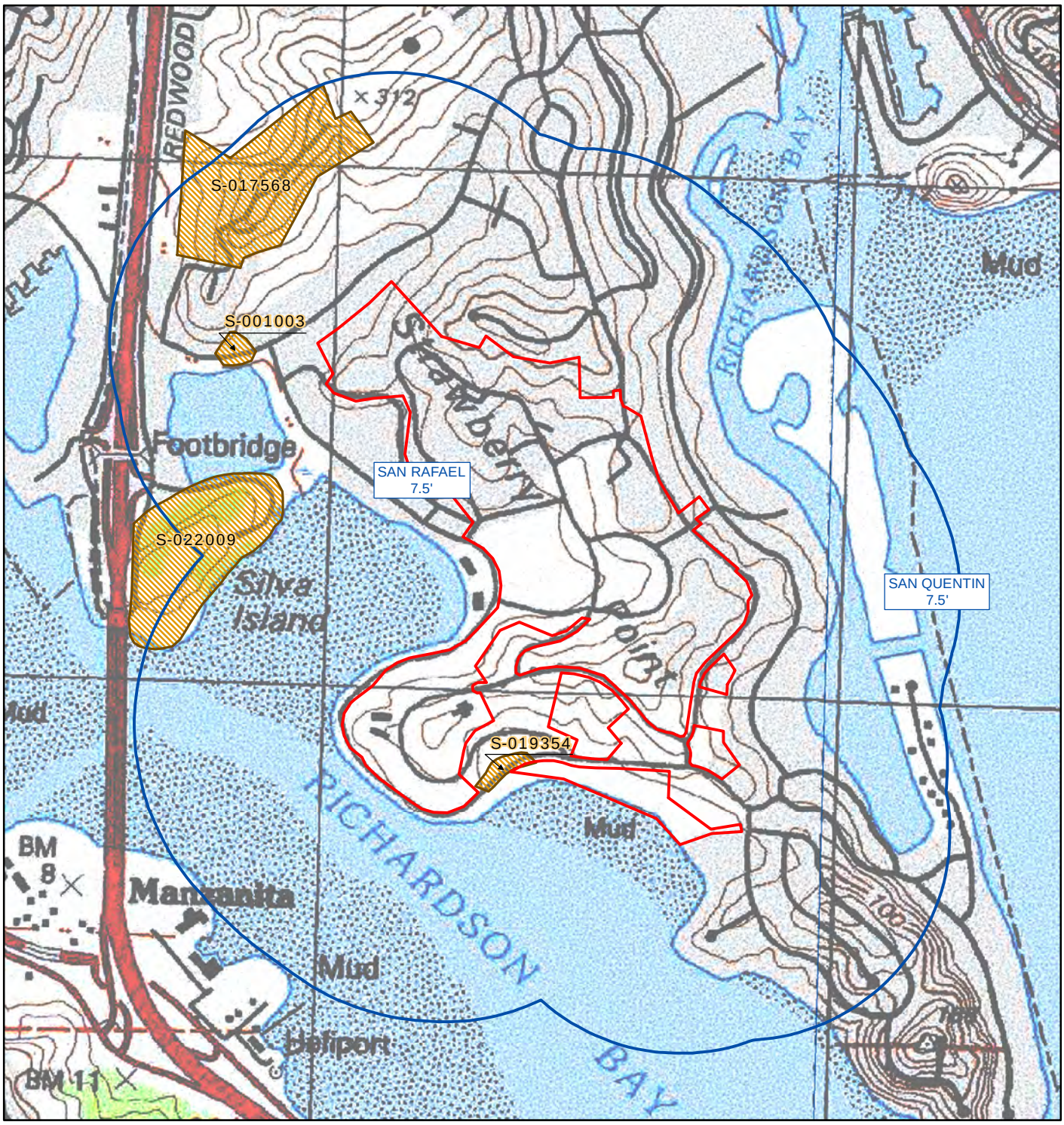


Northwest Information Center
File #21-0671 17 Nov 2021 J. Akmenkalns
May depict confidential cultural resource locations.
Do not distribute.

Feet 0 320 640 960 1,280
Meters 0 60 120 180 240 300
N

Project Area | One-Quarter Mile Radius | Quad outlines
Reports (polygons)

Report Map No. 2
20210009.01 - Marin Co - North Coast Land Holdings



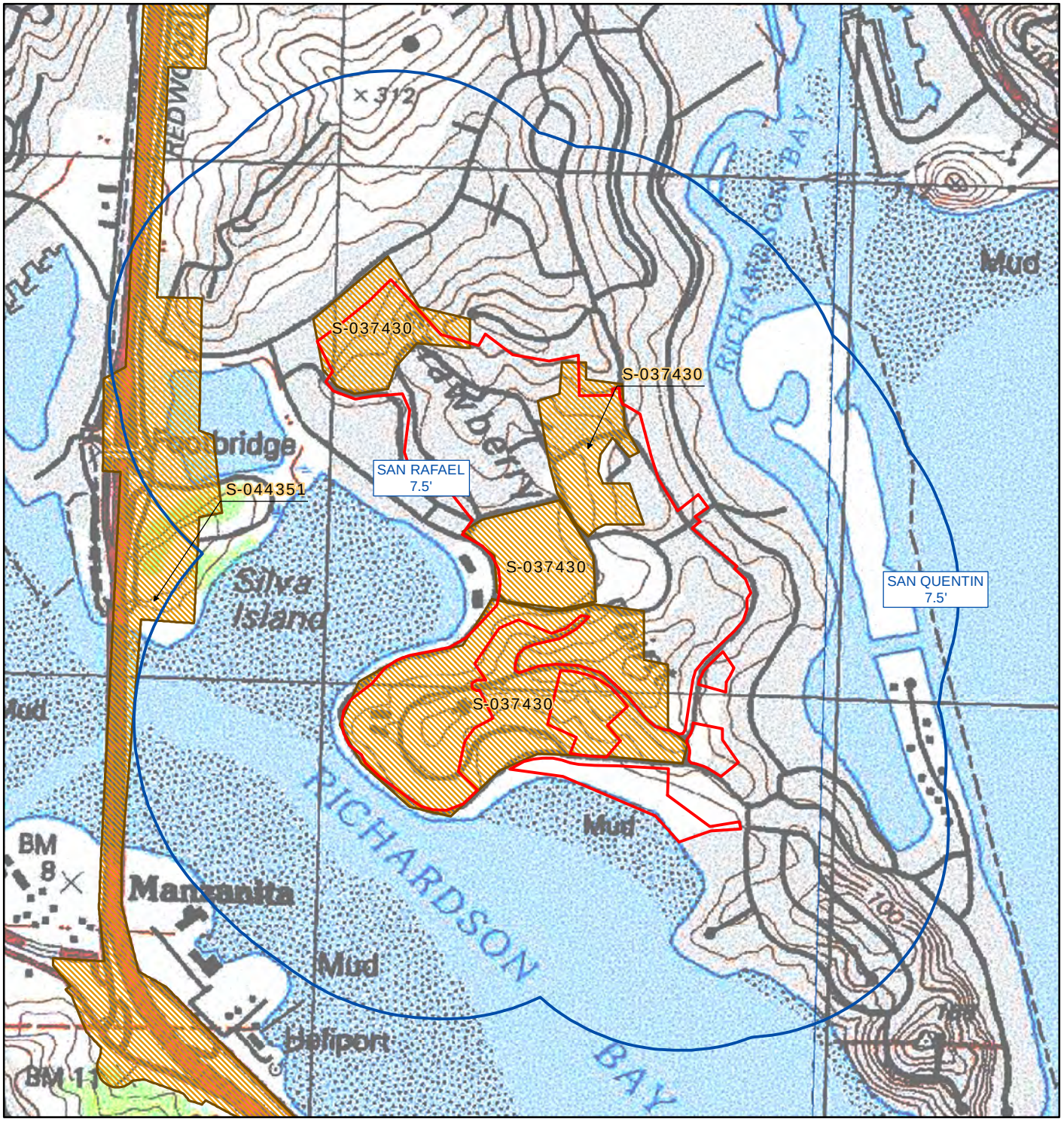
Northwest Information Center
File #21-0671 17 Nov 2021 J. Akmenkalns
May depict confidential cultural resource locations.
Do not distribute.

Feet 0 320 640 960 1,280
Meters 0 60 120 180 240 300

N

Project Area | One-Quarter Mile Radius | Quad outlines
Reports (polygons)

Report Map No. 3
20210009.01 - Marin Co - North Coast Land Holdings



Northwest Information Center
File #21-0671 17 Nov 2021 J. Akmenkalns
May depict confidential cultural resource locations.
Do not distribute.

Feet: 0, 320, 640, 960, 1,280
Meters: 0, 60, 120, 180, 240, 300

N

Project Area | One-Quarter Mile Radius | Quad outlines
Reports (polygons)

Report Detail: S-011757

20210009.01 - Marin Co - North Coast Land Holdings

Identifiers

Report No.: S-011757
Other IDs:
Cross-refs:

Citation information

Author(s): Miley Paul Holman
Year: 1990
Title: Archaeological Field Inspection of the Seminary Drive/Lot 25 Project Area,Strawberry Point, Marin County, California (letter report)
Affliliation:
No. pages:
No. maps:
Attributes:
Inventory size: c 2 ac
Disclosure:
Collections:

General notes

Associated resources

No. resources: 0
Has informals: No

Location information

County(ies): Marin
USGS quad(s): San Rafael
Address:
PLSS:

Database record metadata

	Date	User	
Entered:	4/7/2005	nwic-main	
Last modified:			
IC actions:	*Date*	*User*	*Action taken*
	4/7/2005	jay	Appended records from NWICmain bibliographic database.

Record status:

Report Detail: S-012050

20210009.01 - Marin Co - North Coast Land Holdings

Identifiers

Report No.: S-012050
Other IDs:
Cross-refs:

Citation information

Author(s): Thomas M. Origer
Year: 1990
Title: Archaeological Investigation at the Golden Gate Baptist Theological Seminary,Mill Valley, Marin County, California (letter report)
Affliliation:
No. pages:
No. maps:
Attributes:
Inventory size: c 4 ac
Disclosure:
Collections:

General notes

Associated resources

	Primary No.	*Trinomial*	*Name*
	P-21-000049	CA-MRN-000018	Nelson No. 18

No. resources: 1
Has informals: No

Location information

County(ies): Marin
USGS quad(s): San Rafael
Address:
PLSS:

Database record metadata

	Date	*User*
Entered:	4/7/2005	nwic-main
Last modified:		

IC actions:	*Date*	*User*	*Action taken*
	4/7/2005	jay	Appended records from NWICmain bibliographic database.

Record status:

Report Detail: S-019354

20210009.01 - Marin Co - North Coast Land Holdings

Identifiers

Report No.: S-019354
Other IDs:
Cross-refs:

Citation information

Author(s): Randy S. Wiberg
Year: 1997
Title: Archaeological Subsurface Mechanical Testing of the Seminary Ridge Project Area, Tiburon, Marin County, California
Affliliation:
No. pages:
No. maps:
Attributes:
Inventory size: c 1 ac
Disclosure:
Collections:

General notes

Associated resources

No. resources: 0
Has informals: No

Location information

County(ies): Marin
USGS quad(s): San Rafael
Address:
PLSS:

Database record metadata

	Date	User
Entered:	4/7/2005	nwic-main
Last modified:		

IC actions:	*Date*	*User*	*Action taken*
	4/7/2005	jay	Appended records from NWICmain bibliographic database.

Record status:

Report Detail: S-024547

20210009.01 - Marin Co - North Coast Land Holdings

Identifiers

Report No.: S-024547
Other IDs:
Cross-refs:

Citation information

Author(s): Stephen Bryne
Year: 2001 (Dec)
Title: Cultural Resources Inventory of APN 043-401-09, 153 Chapel Drive, Mill Valley, Marin County, California
Affliliation:
No. pages:
No. maps:
Attributes:
Inventory size: c 0.5 ac
Disclosure:
Collections:

General notes

Associated resources

No. resources: 0
Has informals: No

Location information

County(ies): Marin
USGS quad(s): San Rafael
Address:
PLSS:

Database record metadata

	Date	*User*
Entered:	4/7/2005	nwic-main
Last modified:		

IC actions:	*Date*	*User*	*Action taken*
	4/7/2005	jay	Appended records from NWICmain bibliographic database.

Record status:

Report Detail: S-037430

20210009.01 - Marin Co - North Coast Land Holdings

Identifiers

Report No.: S-037430

Other IDs:

Type	*Name*
Submitter	A.R.S. Project 10-006

Cross-refs:

Citation information

Author(s): Sally Evans

Year: 2010 (Mar)

Title: A Cultural Resources Evaluation of the Golden Gate Baptist Theological Seminary for a Master Plan Amendment, 201 Seminary Drive, Mill Valley, Marin County, California

Affliliation: Archaeological Resource Service

No. pages:

No. maps:

Attributes: Archaeological, Field study

Inventory size: c 56.6 ac

Disclosure: Not for publication

Collections: No

General notes

There was no evidence of P-21-50 within the study area.

Associated resources

Primary No.	*Trinomial*	*Name*
P-21-000049	CA-MRN-000018	Nelson No. 18
P-21-002688		ARS 10-006-01
P-21-002689		ARS 10-006-02

No. resources: 3

Has informals: No

Location information

County(ies): Marin

USGS quad(s): San Rafael

Address:

Address	*City*	*Assessor's parcel no.*	*Zip code*
201 Seminary Drive	Mill Valley		

PLSS:

Database record metadata

	Date	*User*
Entered:	10/11/2010	guldenj
Last modified:	12/1/2016	hagell

IC actions:

Date	*User*	*Action taken*
12/1/2016	hagell	added other identifier, collections. Edited notes.

Record status: Verified

Appendix B

DPR Forms

State of California ◆ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code Reviewer Date

Page 1 **of** 29 ***Resource Name or #:** (Assigned by recorder) GGBTS
P1. Other Identifier:
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** San Rafael **Date** **T** 01N ; **R** 06W ; ☐ **of** ☐ **of Sec** 34 ; **B.M.**
c. Address 201 Seminary Drive City Mill Valley Zip 94941
d. UTM: (Give more than one for large and/or linear resources) Zone , mE/ mN
e. Other Locational Data: APNs 043-261-25; 043-261-26; 043-262-03; 043-262-06; 043-401-05; 043-401-10; 043-401-16; 043-402-03; 043-402-06

***P3a. Description:** Golden Gate Baptist Theological Seminary (GGBTS) campus comprises approximately 130 acres in the community of Strawberry, a census-designated place in unincorporated Marin County, next to the City of Mill Valley. GGBTS is situated on the Strawberry Peninsula with views of San Francisco and the Bay. The campus was established in 1959 and consists of a variety of types of residential units, administrative offices, classroom space, a library, and a cafeteria. Fifty-two buildings and structures were recorded during the current survey. The campus buildings were designed by noted San Francisco architect John Carl Warnecke, and the campus landscape was planned and designed by influential landscape architect Lawrence Halprin.

***P3b. Resource Attributes:** HP15. Educational Building; HP16. Religious Building; HP2. Single family property; HP3. Multiple family property; HP4. Ancillary building; HP19. Bridge; HP29. Landscape architecture
***P4. Resources Present:** ☒ Building ☒ Structure ☐ Object ☐ Site ☒ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: Administration Building, facing southeast, 11/22/2021

***P6. Date Constructed/Age and Source:** c. 1959-1982
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:**
Alta Cunningham
Ascent Environmental
Sacramento, CA 95814

***P9. Date Recorded:** Nov 22, 2021
***P10. Survey Type:** Intensive
***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project*. Prepared for the County of Marin.

***Attachments:** ☐NONE ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☒ Other (List): Sketch Map

D1. Historic Name: Golden Gate Baptist Theological Seminary D2. Common Name: Gateway Seminary

***D3. Detailed Description**

The GGBTS campus comprises approximately 130 acres on the Strawberry Peninsula. The buildings within the GGBTS campus are clustered in the eastern portion of the site, at the highest elevation with views of San Francisco. Much of the residential housing is situated in the northern portion of the site, separated from the academic buildings. A recreational playing field is located at the lowest point on the site, adjacent to Seminary Drive. The southwestern portion of the site is heavily wooded.

The two primary access points are along Seminary Drive at Hodges Drive and Gilbert Drive. Secondary access points are from Mission Drive, East Strawberry Drive, Chapel Drive and Reed Boulevard. Residential parking is dispersed throughout the GGBTS campus in various surface lots adjacent to the residential structures. Parking for the academic buildings is clustered in a central three-tiered parking lot, bounded by Foreman Drive to the west and Gilbert Drive to the north, east, and south (see sketch map page 4).

The built environment consists of 52 historic-era (constructed prior to 1977) buildings and structures (see Table 1). Extant building types include administrative offices, classroom space, a library, a cafeteria, utility buildings, a footbridge, dormitories, single-family homes, and studio, one-, two-, and three-bedroom apartment units. Each of the buildings identified in Table 1 have been recorded on DPR 523 primary forms. These forms follow the main GGBTS district evaluation forms (DPR-523D). Buildings with the potential for individual eligibility are also documented on building, structure, object forms (DPR-523B). Continued on page 5.

***D4. Boundary Description**:

The GGBTS campus is roughly bound by Seminary Drive and Shuck Drive on the west, Chapel Drive to the south, Mission Drive and Storer Drive on the east, and an unmarked property boundary to the north, just south of the residences along Ricardo and Richardson drives (see sketch map page 4).

***D5. Boundary Justification:**

The boundary of the GGBTS campus is the majority of the area currently owned by Marin Land Holdings, the entity who purchased the property in 2014 when sold by the GGBTS Board of Trustees. The three APNs not included do not include any building environment features.

D6. Significance: Theme Religion **Area** California
Period of Significance 1959 **Applicable Criteria** N/A

The GGBTS in Marin County does not appear to meet any of the criteria necessary for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR). The property is not associated with important events or people in history, is not representative of the typical work of John Carl Warnecke and Lawrence Halprin and is not likely to yield any additional important information about our history. Continued on page 15.

***D7. References**: See page 26.

***D8. Evaluator**: Alta Cunningham **Date:** May 2022

Affiliation and Address: Ascent Environmental, Inc., Sacramento

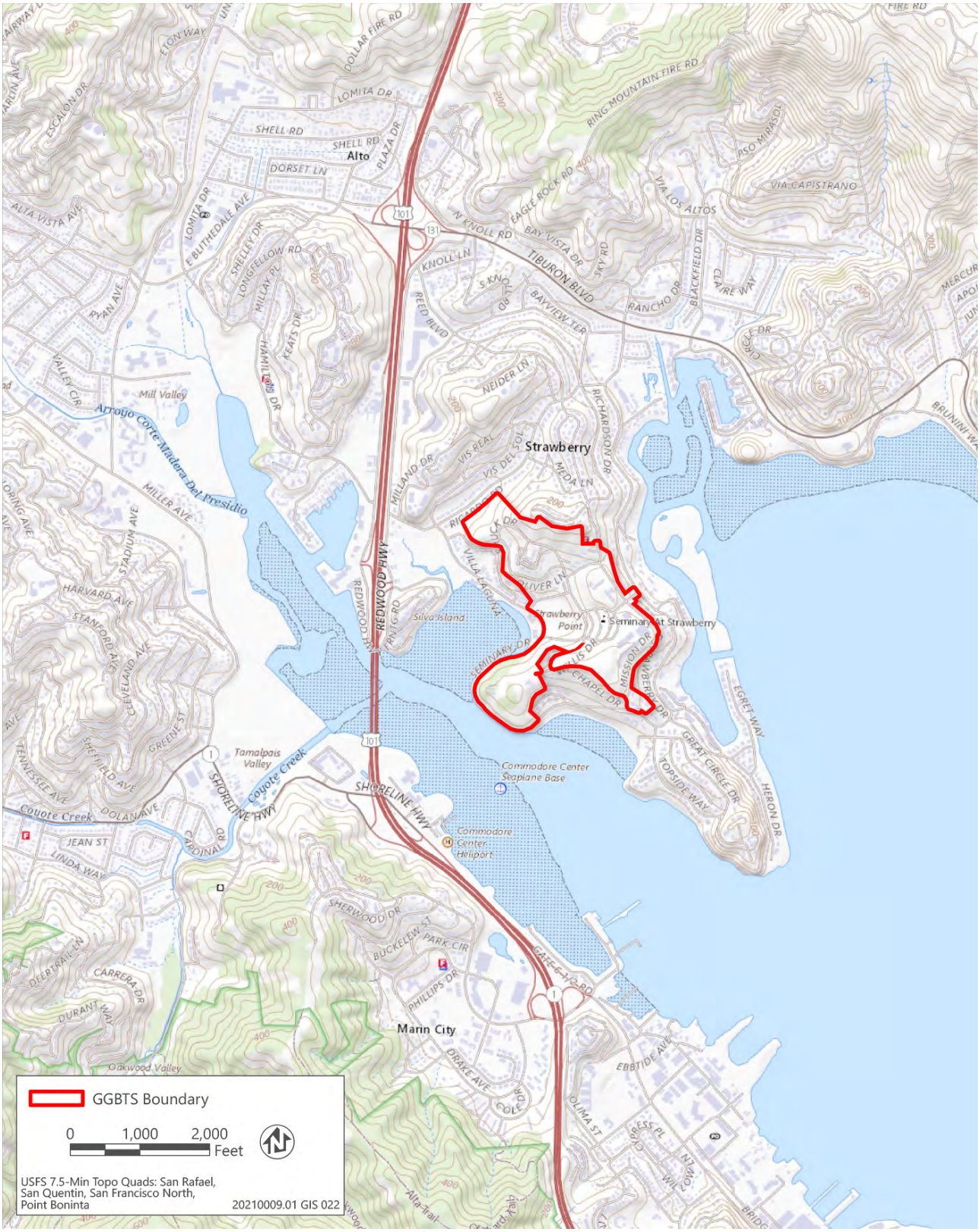
State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

 ***Resource Name or #** GGBTS

***Map Name:** San Rafael, San Quentin, San Francisco North, Point Boninta ***Scale:** 1:24000 ***Date of map:** ____



State of California ♉ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

SKETCH MAP

Primary #
HRI#
Trinomial

Page 4 **of** 29 ***Resource Name or #** (Assigned by recorder) GGBTS

***Drawn By:** _____ ***Date of map:** _____

DPR 523K (9/2013) **NOTE: Include bar scale and north arrow.**

*D3. Detailed Description (con't)

Table 1 GGBTS Historic-era Buildings and Structures

Map ID	Name; Address	Year Constructed	Map ID	Name; Address	Year Constructed
1	Tichenor Village/Redford Hall; 169 Chapel Dr	c. 1977 - 1982	**27**	Library	c. 1977 - 1982
2	Tichenor Village/Gray Hall; 167 Chapel Dr	c. 1977 - 1982	**28**	Cafeteria	1958-59
3	Tichenor Village/ Lawrence Hall; 165 Chapel Dr	c. 1977 - 1982	**29**	Mallory Hall; 403 Storer Drive	1958-59
4	President's Home; 157 Chapel Dr	c. 1959 - 1962	**30**	Truett Hall; 401 Storer Drive	1958-59
5	Missionary House; 116 Mission Dr	c. 1968 - 1974	**31**	300 Storer Drive	c. 1956 - 1958
6	110/112 Chapel Dr	c. 1968 - 1974	**32**	Landscape Department	by 1974
7	16 Platt Ct	c. 1968 - 1974	**33**	5 Oliver Lane	1958-59
8	20 Platt Ct	c. 1968 - 1974	**34**	4 Oliver Lane	1958-59
9	26 Platt Ct	c. 1968 - 1974	**35**	3 Oliver Lane	1958-59
10	Utility Building	c. 1958 - 1962	**36**	2 Oliver Lane	c. 1962 - 1965
11	11 Judson Lane	c. 1962 - 1965	**37**	1 Oliver Lane	c. 1962 - 1965
12	10 Judson Lane	c. 1962 - 1965	**38**	1 Foreman Lane	c. 1962 - 1965
13	9 Judson Lane	c. 1962 - 1965	**39**	7 Foreman Lane	1958-59
14	8 Judson Lane	1958-59	**40**	Bagby Hall	1958-59
15	7 Judson Lane	1958-59	**41**	Gill Hall	1958-59
16	6 Judson Lane	1958-59	**42**	Maddox Hall	1958-59
17	5 Judson Lane	1958-59	**43**	1 Lockett Lane	c. 1966 - 1968
18	4 Judson Lane	1958-59	**44**	2 Lockett Lane	c. 1966 - 1968
19	3 Judson Lane	1958-59	**45**	3 Lockett Lane	c. 1966 - 1968
20	1 Rice Lane	1958-59	**46**	4 Lockett Lane	c. 1966 - 1968
21	2 Rice Lane	1958-59	**47**	Laundry Room	c. 1966 - 1968
22	Wallace Hall	1958-59	**48**	7 Green Lane	c. 1968 - 1974
23	Mahon Hall	1958-59	**49**	6 Green Lane	c. 1968 - 1974
24	Carey Hall	1958-59	**50**	5 Green Lane	c. 1968 - 1974
25	Graves Administration Building; 201 Seminary Drive	1958-59	**51**	Footbridge	post-1968
26	Academic Building	1958-59	**52**	Bus Stop	unknown

*D3. Detailed Description (con't)

Topography, Views, and Vistas

The GGBST campus generally encompasses the middle portions of the Strawberry Peninsula. The topography of the GGBST campus consists primarily of hillsides and knolls on the Strawberry Peninsula with a range of elevations from approximately 10 to 250 feet. The Richardson Bay shoreline is adjacent to Seminary Drive, which runs along portions of the GGBST campus boundary to the east and south. The eastern portion of the GGBST campus includes the academic buildings and associated facilities. The Seminary Playing Field is located west of the academic buildings, at the topographically lowest point of the GGBST campus and encompasses approximately two acres. At an elevation of approximately 190 feet, the central point on the GGBST campus is Chapel Hill. From Chapel Hill major ridgelines extend:

- South to Strawberry Point with a break through a saddle where Seminary Drive transitions into Strawberry Drive.
- West to the forested Seminary Point (approximate elevation 125 feet).
- North through the campus to a saddle composing Dormitory Hill (approximate elevation 115 feet) then up to near Richardson Drive residences (approximate elevation 250 feet) and then arching west down to Schuck Knoll (approximate elevation 110 feet).

Visually, a series of minor ridgelines further divide the GGBST campus. Because of its location surrounded on three sides by Richardson Bay, Seminary Point is the most prominent visual natural feature of the GGBST campus. The topography and ridgelines tend to control views into the GGBST campus such that the entire GGBST campus is generally not visible from any one surrounding location. This is particularly true from the immediate foreground and foreground distances. Due to the topography, the major portion of the GGBST campus is only visible from the southwest and west.

Overview from field at Chapel Drive and Storer Drive intersection. Gilbert Drive and terraced parking in the foreground. Shuck Drive in the center. Photo taken 11/22/2021.

Overview from Rice Lane. Oliver Lane parking in the foreground. Playground at the intersection of Shuck Drive and Storer Drive. Photo taken 11/22/2021.

View southeast from Storer Drive, behind Academic Building. Photo taken 11/22/2021.

*D3. Detailed Description (con't)

Circulation System

The eastern portion of the GGBST campus includes the academic buildings and associated facilities, generally east of Gilbert Drive, south of Storer and Herring drives, and north of Chapel Drive. The Seminary Playing Field is located west of the academic buildings, east of Seminary Drive, and between Hodges and Gilbert drives. Residential uses occur throughout the GGBTS campus, though are primarily clustered along Oliver and Rice Lanes, Lockett Lane, Chapel Drive, and along Seminary Drive. Within the GGBTS campus, these roads do not have dedicated walkways for pedestrians in the form of sidewalks, however, paved pedestrian paths are located throughout the campus. A pedestrian bridge crosses Herring Drive, connecting the cafeteria and Mallory Hall.

Pedestrian bridge crossing Herring Drive. View facing north. Photo taken 11/22/2021.

Pedestrian walkway between Judson and Rice apartments. Staircases to the left lead to Judson Lane and staircases to the right continue to Oliver Land. View facing north. Photo taken 11/22/2021.

Staircase from Oliver Lane parking to Judson Lane apartments. View facing north. Photo taken 11/22/2021.

***D3. Detailed Description (con't)**

Water, Vegetation, and Small-Scale Features

Water features within the GGBTS campus consist of lined drainage ditches, primarily along the east side of Shuck Drive north of Storer Drive and both sides of Storer Drive between Shuck Drive and Reed Boulevard. Vegetation throughout the developed areas of GGBTS consists of manicured lawns and ornamental shrubs and mature shade trees. Existing landscaping within the GGBST campus includes several vegetation communities, including Monterey pine woodland on the southern knoll/Forested Knoll and Seminary Point, California sagebrush scrub on Seminary Point, and various planted landscape areas throughout the campus. Sensitive vegetation communities include purple needlegrass grassland and coast live oak woodland. The most visible small-scale features are the walkways, staircases, and light poles concentrated around the residential development. Retaining walls are located throughout the campus.

Mature trees, landscaped grass, lined drainage ditch. South side of Storer Drive at intersection with Shuck Drive. Playground located at the right. Photo taken 11/22/2021.

Retaining wall and light posts located on the south side of Truett Hall. Facing northeast. Photo taken 11/22/2021.

Retaining wall and stairway located on the west side of the Administration Building. Facing northwest. Photo taken 11/22/2021.

***D3. Detailed Description (con't)**

Buildings and Structures

The buildings at the GGBTS campus were designed by architect John Carl Warnecke who specialized in modernist designs. However, none of the buildings could be considered modernist. The academic, administration, and cafeteria buildings are typical institutional design. The dormitories, located in the northern portion of the GGBTS campus, are two-story rectangular buildings while the apartments are arranged as duplexes (symmetrical or offset) and triplexes (cascading). Employee housing located along Mission Drive, and the president's house, located at the west end of Chapel Drive, are simple Ranch style construction. Accessory buildings, including laundry, landscaping, utilities, and bus stops, are located through the GGBTS campus.

Judson Lane apartments: symmetrical at red arrow, triplex at purple arrow, and offset duplex at blue arrow. Photo taken 11/22/2021.

Wallace, Mahone, and Carey Halls. These dormitories are located in the northeastern portion of the GGBTS campus. Photo taken 11/22/2021.

Bus stop, located on Shuck Drive north of Hodges Drive. Maddox Hall is located at the left. Photo taken 11/22/2021.

Current GGBTS campus map.

*D6. Significance (con't)

EVALUATION FRAMEWORK

Development of Golden Gate Baptist Theological Seminary

Early History of the Southern Baptist Convention

The Southern Baptist Convention (SBC) is a Christian denomination based in the United States. It is the world's largest Baptist denomination, descended from Baptists who settled in the American colonies in the 17th century (Fahmy 2019). In the late 1700s as Baptists began to organize and expand, they formed missionary societies to spread the Christian lifestyle to others. These mission societies, such as the American Baptist Home Mission Society, the American Baptist Foreign Mission Society, and the American Baptist Publication Society, led to other organizational structures that would eventually define the denomination of Southern Baptists (Fairchild 2019).

By the 1830's tension began to mount between northern and southern Baptists over the issue of slavery. Northern Baptists (known today as the American Baptist Churches USA) believed God would not condone treating one race as superior to another, while southerners said that God intended for races to be separate (Fairchild 2019). In 1844, Georgia Baptists asked the Home Mission Society to appoint a slaveholder to be a missionary in Georgia. After much discussion, the appointment was declined. A few months later, the Alabama Baptist Convention asked the Foreign Mission Society if they would appoint a slaveholder as a missionary. The society said no (Baker 1979).

Virginia Baptists called for Baptists of the southern states to meet at Augusta, Georgia, in early May 1845, for the purpose of consulting "on the best means of promoting the Foreign Mission cause, and other interests of the Baptist denomination in the South" (Baker 1979). About 293 Baptist leaders of the South gathered at the First Baptist Church, Augusta, Georgia. They concluded that more could be accomplished in Christian work by the organization of a separate Baptist body for missionary work. As a result of this division, the SBC was formed (Fairchild 2019).

Early Attempts in California

The earliest account of Baptist missions in California was the arrival of Osgood Wheeler in February 1849. Wheeler, a pastor from the First Baptist Church of Jersey City, was sent by the American Baptist Home Mission Society of Northern Baptists and the Board of Domestic Missions of the SBC as their pioneer missionary. He and his family arrived in the first steamer to enter San Francisco's harbor, one year before California became a state (Graves 1983:15-16). Wheeler's attempts at establishing churches and congregations was not successful. It was noted that people in northern California were consumed by the Gold Rush and "gold fever." In southern California, the influence of Southern Baptists was made by lay people who migrated to the state for the land, not the gold, and they were therefore more successful (Graves 1983:25).

Southern Baptist in northern California turned to education to further their cause. In 1853, the California Baptist Education Society was organized with the goal of furthering the mission and founding a theological institution (Graves 1983:26). In 1859 Harvey Gilbert, a Southern Baptist home missionary, founded the San Rafael Baptist Institute in Marin County. Many people hoped the fledgling institute would soon become a Baptist theological school, however, the school closed after a few years as the United States was plunged into the Civil War. Soon after, the SBC withdrew all support for California work and the churches and institutes it sponsored either disappeared or found other affiliations (Gateway Seminary 2021; Wood 2019; Graves 1983:27-28).

*D6. Significance (con't)

Isam B. Hodges and the Southern Baptist General Convention of California

When Southern Baptists again began establishing churches in California, the first in 1936 in Kern County by the Mouser family, the need for a theological school was again recognized (Gateway Seminary 2021; Graves 1983:30). The Southern Baptist General Convention of California (Convention) organized in 1940 and included all 14 Southern Baptist churches in California. At its 1942 meeting, a plea for a Baptist school was heard, and the Convention adopted the following resolution, "We recommend that Southern Baptists in California pray, labor, and pay that these institutions which we now have may continue in their work and that we may soon have schools of our own in California to prepare our young people for greater service in the Kingdom" (Graves 1983:32-33). By this time, the Convention had a membership of 40 churches.

Gilbert's dream for a theological school in California was particularly strong in the mind of Isam B. Hodges. While a student at Southwestern Baptist Theological Seminary in Fort Worth, Texas, Hodges came to the conviction that it was God's will for him to begin a seminary in the West. In 1934, Hodges arrived in the Bay Area and within two years he was pastor of Oakland's Golden Gate Baptist Church (Gateway Seminary 2021; Wood 2019). The Golden Gate Baptist Church had been organized in 1892 with the Northern Baptist Convention; Hodges, believing that the Northern Baptists were not doing enough to grow their ministries, sought for affiliation with the Southern Baptist Convention for his church in November 1943 (Graves 1983:38-39). Hodges had established sufficient reputation among Sothern Baptists and was the president of the Convention from 1944 to 1945, providing strong leadership and support for Southern Baptist expansion in California. He urged the Home Mission Board and the Sunday School Board of the SBC to do more to support the California efforts (Graves 1983:40). In less than a decade Hodges had risen from an unemployed preacher to the president of a new Southern Baptist General Convention of California. Hodges also determined that the time was ripe to pursue his dream of a theological seminary.

Founding of the Golden Gate Baptist Theological Seminary

In the spring of 1944, the congregation of Golden Gate Baptist Church authorized its deacons to meet with a committee from the First Southern Baptist Church of San Francisco to formulate plans to establish a theological seminary, with the expressed purpose of training men and women for the ministry (Gateway Seminary 2021; Wood 2019; Graves 1983:31-33). The combined committee met on March 31, 1944, to formally organize GGBTS. Six deacons from each church served as members of the first board of trustees; a few weeks later three additional members were added as representatives of the Golden Gate Baptist Association. By summer of 1944, a state charter had been issued and classes began at the Golden Gate Baptist Church in Oakland (Gateway Seminary 2021; Wood 2019). The curriculum was similar to that of other seminaries of the time. Under the heading for department chairs, the following twelve were listed (Graves 1983:44):

1. Chair of Bible
2. Chair of Missions
3. Chair of Evangelism
4. Chair of Church History
5. Chair of Christian Education
6. Chair of Homiletics
7. Chair of Theology
8. Chair of New Testament Greek
9. Chair of Old Testament Hebrew
10. Chair of Christian Psychology & Christian Sociology
11. Chair of Sacred Music
12. Apologetic & Polemics

*D6. Significance (con't)

Hodges guided the school through that first year as its president, all the while writing letters to people throughout the SBC, working to gain support for his vision. The SBC approved the recommendation that the seminary become an institution of the state convention; in November 1945, the Southern Baptist General Convention of California gained ownership of the school and elected a new board of trustees. Dr. Benjamin O. Herring succeeded Hodges as president in 1946.

Although primarily an educator, Herring was active in growing the GGBTS. He wrote letters thanking the Golden Gate Baptist Church for use of their facilities while also suggesting the GGBTS should acquire housing facilities. He repeatedly presented the case that the SBC open a Baptist College in California and petitioned Baptist churches for financial support. In early 1947 Herring was successful in moving the GGBTS to larger, more spacious quarters in nearby Berkeley. This property also included dormitories for women (Graves 1983:48,57,88). In 1949 the GGBTS was accredited by the State of California. "An exhaustive and thorough examination of the organization, faculty, program, and facilities was necessary before the coveted approval was procured. Since the State of California maintains high educational standards, the accreditation of the seminary is a noteworthy event" (Graves 1983:91). All of Herring's work contributed to the SBC accepting ownership of the school in May 1950 (Gateway Seminary 2021). Attendance had grown from 31 students in September 1946 to 177 in September 1950. Larger facilities were needed, and the GGBTS board voted to negotiate with Calvary Baptist Church for the adjacent property; plans were drawn up to accommodate 500 students, however, a loan for this work was never secured (Graves 1983:104-105).

Herring resigned his presidency in 1951 and was succeeded by Dr. Harold K. Graves from Oklahoma. Graves continued to expand the faculty and push for academic excellence. He arranged the lease of a house and 12-unit motel complex across the street from the Berkeley property to provide housing and dining facilities for single students; two houses that had been previously used as dorms were converted to office space; and he remodeled the interiors of existing facilities to maximize space (Graves 1983:130). During this time, he also continued Herring's search for a new location. In 1953 he led the acquisition of 148 acres of prime Marin County real estate, at the site of a dairy farm previously considered as a permanent location for the United Nations. Moving the GGBTS was a bold venture that would require the development and construction of all new facilities (Gateway Seminary 2021).

The campus buildings were designed by noted San Francisco architect John Carl Warnecke, known for Bay Area landmarks like Stanford University's Mapes Pavilion and the San Francisco Hilton. The campus landscape was planned and designed by influential landscape architect Lawrence Halprin who gained national attention with his work at the 1962 Seattle World's Fair and the Ghirardelli Square adaptive-reuse project in San Francisco. Halprin was also commissioned to design the landscapes at three residential colleges, Cowell College, Stevenson College, and Crown College, at the University of Santa Cruz in the 1950s. In the early 1970s, Warnecke and Halprin again worked together on the design of the United Nations Plaza at San Francisco's Civic Center (Gateway Seminary 2021; Wood 2019).

The GGBTS campus was opened in September 1959. Graves continued to lead the GGBTS until he retired and became president emeritus in 1977 (Gateway Seminary 2021; Wood 2019). Completed, the campus had nine buildings containing nearly 120,000 square feet of floor space, with 211 student housing units and spectacular views of San Francisco's skyline over the bay. Enrollment peaked in the 1970s at 750 students, most doing graduate work (Wood 2019).

*D6. Significance (con't)

Dr. William M. Pinson Jr., pastor of the First Baptist Church of Wichita Falls, Texas, became president of GGBTS after Graves in 1977. His five-year tenure saw the GGBTS continue to expand its visibility. Pinson led in the establishment of the GGBTS's regional campus in the Pacific Northwest. A steadily growing enrollment brought about the need for a new library and additional student housing at the Mill Valley Campus. They were completed before Pinson became executive director of the Baptist General Convention of Texas in 1982 (Gateway Seminary 2021).

Dr. Franklin D. Pollard, pastor of the First Baptist Church of San Antonio, Texas, was inaugurated as the fifth president of GGBTS in 1983. During his three-year administration, the GGBTS experienced the largest enrollment gain in its history, a 20 percent increase in the fall of 1984 over the previous fall. Pollard also led in a redevelopment of the GGBTS master plan so more students could study at GGBTS. He left in 1986 to become pastor of the First Baptist Church of Jackson, Mississippi (Gateway Seminary 2021).

Beginning in 1973 with the opening of the Orange County seminary, the GGBTS grew to have five campuses, which served Southern Baptist churches throughout the Western United States (Seminaries and Bible Colleges 2022).

- Seminary in Northern California, in Mill Valley, CA (San Francisco Bay Area)
- Seminary in Southern California, in Brea, CA (Orange County, California)
- Seminary in Arizona, in Scottsdale, AZ (Greater Phoenix, Arizona Area)
- Seminary in Washington, in Vancouver, WA (Greater Portland, Washington Area)
- Seminary in Colorado, in Centennial, CO (Denver Metropolitan Area)

In April 2014, the board of trustees voted to move the GGBTS's main campus from Mill Valley 400 miles south to Ontario, California and rename the school Gateway Seminary of the Southern Baptist Convention. The Marin campus was sold to North Coast Land Holdings for $84 million. In 2016, North Coast Land Holdings signed a three-year lease with Olivet University, a private evangelical Christian school. The Marin site is now called the Seminary at Strawberry and, besides having the university tenant, is a setting for weddings, seminars, and special events (Gateway Seminary 2021; Wood 2019).

Site Development History

Available online historical aerial imagery of the area is sporadic. The 1946 aerial shows the outline of the preliminary road Seminary Drive, and the campus area has been graded by 1956. By 1958, the outlines of interior roads are present, including modern day Shuck Drive, Judson Lane, Rice Lane, Hodges Drive, and Storer Drive, as well as the beginning stages of construction of the campus structures. The terraced parking lot at the GGBTS is also clearly visible. Residential development exponentially increased by 1968 with clusters along Oliver Lane, Rice Lane, Lockett Lane, Chapel Drive, and along Seminary Drive and Strawberry Lane. By 1982, three elongated structures are present in the southwest corner of the campus. The 1993 aerial photograph shows a baseball diamond along Seminary Drive and Gilbert Drive; by 2018, the baseball diamond had been covered with grass, leaving what is today known as Seminary Playing Field (NETR 2022).

*D6. Significance (con't)

Historical photographs are also available from the Marin History Museum (Marin History Museum 2022). In the February 1959 photo below, the majority of residential apartments are visible, along with the cafeteria and administration building. The three apartment buildings west of Wallace Hall are not visible, nor are the three at south corner of Oliver Land and Shuck Drive (north of Maddox Hall). The seven apartment buildings north of the corner of Shuck Drive and Storer Drive had not been constructed, nor has Tichenor Village. The library, President's Home, and residences along Mission Drive and Chapel Drive intersection (Platt Village) had also not been constructed. The President's Home is visible in the August 1962 photo.

In September 1965, shown below, the three apartment buildings west of Wallace Hall are now visible as are the three north of Maddox Hall (south corner of Oliver Land and Shuck Drive). The library, Tichenor Village, apartment buildings at the north corner of Shuck Drive and Storer Drive, and residences along Mission Drive and Chapel Drive intersection have yet to be constructed. The February 1966 photo depicts the same conditions.

Four of the apartment buildings at the north corner of Shuck Drive and Storer Drive are visible in the September 1968 photo, though the top three apartment buildings have yet to be constructed. It is unclear whether the residences along Mission Drive and Chapel Drive intersection have been constructed; the library and Tichenor Village have not. By April 1974, shown below, the residences along Mission Drive and Chapel Drive intersection are visible, as are the final apartment buildings at the north corner of Shuck Drive and Storer Drive. The maintenance building is also visible. The presence of the library is unknown because that area of the campus is not visible in the photo; similarly, the photo is too dark and there are too many trees to tell if Tichenor Village has been constructed.

The Design Team

John Carl Warnecke

John Carl Warnecke was an award-winning architect based in the San Francisco Bay Area and was responsible for the design of numerous modernist buildings, schools, and monuments, both within the Bay Area and nation. Warnecke was born in Oakland, California on February 24, 1919. His father, Carl I. Warnecke, was a prominent Beaux Arts architect in Oakland and San Francisco, and one of the architects involved in the design of San Francisco City Hall (Smith 2010). He attended Stanford University where he met John F. Kennedy, when Kennedy was auditing business classes there. This meeting was the start of a longtime relationship that would provide Warnecke opportunities for national recognition as his career matured. After Stanford, Warnecke attended Harvard University for his master's in architecture where he studied under the Modernist master, Walter Gropius. Soon he opened his own practice, first as a solo enterprise in 1950, then as firm in 1956. By 1977, Warnecke was running the largest architectural firm in the United States, with offices in San Francisco, Los Angeles, New York, Boston, Washington, and Honolulu (Grimes 2010). Warnecke was affiliated with the National Academy of Design and was the recipient of many awards, including a National Institute of Arts and Letters prize in 1957 and the Brunner Memorial Prize in 1958.

Warnecke pioneered the idea of contextual architecture, that modern buildings could be designed in sympathy with the natural and built context. Contextual architecture reflects the setting, forms, and details of a building's surrounding landscape, not building something that contrasts and feels out of place. In the late 1950s, the architectural profession did not generally acknowledge the neighboring built environment. His project for a U.S. embassy in Bangkok in 1956 was an unbuilt work that made his reputation. The proposed building drew on mainstream Western Modernist forms, melding them with designs observed by Warnecke in Bangkok. The result

Source: Courtesy of Marin History Museum
February 1959 Historic Aerial

Source: Courtesy of Marin History Museum
September 1965 Historic Aerial

Source: Courtesy of Marin History Museum
April 1974 Historic Aerial

*D6. Significance (con't)

was an exotic mix that drew favorable reviews. The design consisted of several floors of cantilevered balconies with lacy pre-cast concrete railings around the main office core and central courtyard. The composition floated on thin white columns over a reflecting pond. Warnecke received a letter from Finnish-American architect and industrial designer Eero Saarinen praising the design for the embassy (NPS 2001).

Among significant works of this period by Warnecke's office were the John F. Kennedy Gravesite in Arlington National Cemetery (1966); the Hawaii State Capitol (1969) in Honolulu; Logan Airport South Terminal in Boston (1977), Lafayette Square in Washington DC (1962-72), the Soviet Embassy in Washington DC (1975); the Hart Senate Office Building in Washington DC (1982), and a Sports Arena at the University of Nevada in Las Vegas (1984). His designs reflected his passion for structures that harmonize with the environment and the heritage of the places in which they were built.

Located in downtown Honolulu, the Hawaii State Capitol was commissioned and dedicated by John A. Burns, second Governor of Hawaii. It opened on March 15, 1969, replacing the former statehouse, the 'Iolani Palace. The Hawaii State Capitol is an American adaptation of the Hakonya style termed "Hawaiian international architecture". It was designed by a partnership between the firms of Belt, Lemon, and Lo (Architects Hawaii Ltd.), and John Carl Warnecke and Associates. Unlike other state capitols modeled after the United States Capitol, the Hawaii State Capitol's distinct architectural features symbolize various natural aspects of Hawaii. The building is surrounded by a reflecting pool, symbolizing the Pacific Ocean. The two legislative chambers are cone-shaped, symbolizing volcanoes that formed the Hawaiian Islands. The columns around the perimeter of the building have shapes resembling royal palm trees. There are eight columns in four rows at either side of the building, representing the eight main islands of Hawaii; sets of eight items appear in other places inside and along the outside of the building. The Capitol is built with an open-air design, allowing sun, wind, and rain to enter; the central atrium opens to the sky and rainbows can sometimes be seen inside the building when it rains. When standing in the center of the structure, the chandeliers from both legislative chambers, which represent the sun and moon, can be seen through the glass walls, while the area that is normally reserved for a rotunda in most capitol buildings is left open to the sky (Architectuul 2022).

One of the best examples of Warnecke's contextual style is the Mira Vista Elementary School in Richmond (photos below). Not only does its design and orientation provide the best angle to capture natural light but it also mimics nearby natural forms—rocks, grass, and waves—so as to blend into and become part of the natural landscape (American Institute of Architects 2018). Other notable California schools designed by Warnecke include the White Oaks Elementary School in San Jose, the Cragmont Elementary School in Berkeley, the Frank C. Havens Elementary School in Piedmont, White Oaks Elementary School in San Carlos, and numerous buildings on the Stanford, UC Berkeley, and UC Santa Cruz campuses.

***D6. Significance (con't)**

Mira Vista Elementary School, Richmond. 1951 (American Institute of Architects 2018).

Mira Vista Elementary School, Richmond. 1951 (American Institute of Architects 2018).

*D6. Significance (con't)

Lawrence Halprin

Lawrence Halprin was one of the most influential landscape architects of the latter 20th century. With a career spanning more than five decades, he designed significant projects overseas and across the United States including the landscapes for the Hebrew University in Jerusalem, Israel (1960), the 1962 Seattle's World Fair, the United Nations Plaza in San Francisco (1975), Park Central Square in Springfield, Missouri (1974; listed in the NRHP in 2010), and the entrance to Yosemite Falls in Yosemite National Park (completed 2005). His designs sought to impart positive social impact and user experience, as well as convey artistic expression by bringing nature into urban spaces in unprecedented ways (Los Angeles Conservancy 2020). Halprin's notable projects in Mill Valley include the landscape designs for the Mill Valley Public Library (1966) and the Green-Johnston House at 366 Summit Avenue (1961).

Halprin was born in New York City in 1916 and raised in Brooklyn. He earned a bachelor's degree in plant sciences from Cornell in 1939 and a master's degree in horticulture in 1941 from the University of Wisconsin. Halprin found his calling after visiting Frank Lloyd Wright's Taliesin studio in Wisconsin. He attended Harvard's Graduate School of Design on scholarship, studying under early Modern masters Walter Gropius and Marcel Breuer (Los Angeles Conservancy 2020). After being injured in a kamikaze attack during World War II, Halprin went to San Francisco to recuperate. It is there he came to work with famous San Francisco landscape architect Thomas Church until he started his own firm in 1949.

Stylistically, Halprin was part of the modernist design movement. Expanding upon the principles of landscape architecture pioneered by Frederick Law Olmsted, Halprin created new types of landscapes that were dynamic, environmentally sensitive, commemorative, and eco-friendly. One of his specialties was creating grand open space networks that were carved into declining infrastructure (Cultural Landscape Foundation 2016). Halprin, like Olmsted, wanted to take the viewer on a scenic journey so he scaled his designs with the human viewpoint in mind. However, unlike Olmsted, Halprin's landscapes were inspired by, but not imitative of, nature; his signature elements included scenic vegetation, striking water features (particularly fountains; see photo below), sculptures, terraced backdrops, native stones, and concrete (Los Angeles Conservancy 2020).

Ira Keller Fountain, Portland Oregon (Cultural Landscape Foundation 2016).

***D6. Significance (con't)**

One of Halprin's earliest achievements was the kidney-shaped pool at the Donnell Garden was completed in 1948 (photo below). Designed by Church, in collaboration with Halprin while he was employed in the landscape architect's office, the pool's form interprets the salt marshes in the distance and may have been one of the country's first biomorphic pools (Cultural Landscape Foundation 2016). Its distinct shape, along with the abstracted sculpture by Adaline Kent, has become an icon of mid-century Modernism and California living.

Dewey Donnell Garden Pool (El Novillero) in Sonoma County (Cultural Landscape Foundation 2016).

Halprin was commissioned to design the landscapes at three of the residential colleges at the University of Santa Cruz in the 1950s: Cowell College, Stevenson College, and Crown College. His designs incorporated the redwood groves and ocean views that are characteristic of the campus as a whole, while his individual design aesthetic is evident in the concrete terraced patios and abstract sculptures and fountains (Cultural Landscape Foundation 2016). He also designed Sproul Plaza at University California Berkeley in 1962.

Sea Ranch, located on the Sonoma Coast, is his most well-known landscape project in the Bay Area (photo below). Halprin was hired to create a master plan for the residential community in 1965; he developed guidelines and recommendations for growth that are still adhered to today. Halprin integrated emerging environmental principals into his plan, attempting minimal intrusion into the native environment (see photo below). Houses were placed within the natural framework of the coastal hills, clustered between hedgerows to provide both wind protection and ocean views (Cultural Landscape Foundation 2016).

***D6. Significance (con't)**

Sea Ranch, Sonoma Cost (Cultural Landscape Foundation 2016).

Halprin continued to create until his death in 2009 at the age of 93(Los Angeles Conservancy 2020). He received numerous awards during his lifetime, including being elected a fellow in the American Society of Landscape Architects in 1969, the Architects Institute of America Gold Medal Award in 1979, and the National Medal of Arts in 2002, presented by then-President George W. Bush.

NRHP AND CRHR EVALUATION

Each of the buildings identified in Table 1 have been recorded on DPR 523 primary forms. These forms follow the main GGBTS district evaluation forms (DPR-523D). Buildings with the potential for individual eligibility are also documented on building, structure, object forms (DPR-523B).

Application of Significance Criteria

To be considered eligible for listing in the NRHP/CRHR under Criterion A/1, a property must be associated with events that have made a significant contribution to the broad patterns of our nation's, California's, or local history. GGBTS is proclaimed as the first Baptist Seminary in the west. However, this is more correctly stated for the Berkeley campus, which was established in 1947, more than a decade prior to the Marin campus. It was at the Berkeley campus where residences were established, including dormitories for women, were GGBTS was accredited by the State of California in 1949, and where the SBC accepted ownership of the school in May 1950. Therefore, although the Marin campus of GGBTS is associated with the continued growth of the Southern Baptist Seminary in California and the west, GGBTS was fully established and growing while at the Berkeley campus. Historical research revealed no specific contributions to the Southern Baptist Convention's growth. Because the historic record does not show the property to be associated with events that have made a significant contribution to history, it does not appear to meet NRHP/CRHR Criterion A/1.

*D6. Significance (con't)

To be considered eligible for listing in the NRHP/CRHR under Criterion B/2, a property must be associated with the lives of persons significant in our past. It must be shown that the person gained importance within his or her profession or group while working in the building. The establishment of a Baptist seminary in California is credited to Isam B. Hodges and the expansion of GGBTS in Berkeley is credited to Dr. Benjamin O. Herring and Dr. Harold K. Graves. Although Graves was responsible for the founding of the Marin campus of GGBTS, this does not rise to the level of significance necessary for NRHP or CRHR consideration. Also, while the Marin campus of GGBTS was designed by John Carl Warnecke and Lawrence Halprin, this property does not appear to be the most representative example of their work, discussed further under Criterion C. Therefore, the Marin campus of GGBTS does not appear to meet NRHP/CRHR Criterion B/2.

Under NRHP/CRHR Criterion C/3, a property must embody distinctive characteristics of a type, period, or method of installation, or represent the work of a master, or possess high artistic values. The GGBTS property was designed by architect John Carl Warnecke and landscape architect Lawrence Halprin. Warnecke specialized in modernist designs, such as the Hawaii State Capitol building, and contextual architecture that reflected his passion for structures that harmonized with the environment, as seen in Mira Vista Elementary School. Halprin specialized in bringing nature into urban spaces, especially through water features, as seen in the Ira Keller Fountain, and designing landscapes that were inspired by nature, such as Sea Ranch. The buildings are not examples of modernist work and there is minimal landscaping. While the GGBTS property has a park-like setting and the hillside is mirrored in the terracing of buildings and the main parking lot, the campus is not representative of Warnecke's or Halprin's work. As a whole, GGBTS lacks the architectural and design values of both masters, and therefore does not appear to possess sufficient design or construction value to warrant inclusion in the NRHP/CRHR under Criterion C/3.

Criterion D/4 generally applies to archaeological resources, or other resources that through study of construction details can provide information that cannot be obtained in other ways. Construction details about GGBTS have been documented. The property does not appear to be significant under this criterion because it is not likely to yield any additional important information about our history.

Integrity Consideration

GGBTS retains its integrity. The property has had no demolitions or additions which detract from the original design, materials, workmanship, or feeling of the buildings or campus. While some buildings were constructed at a later time, such as the library and Tichenor Village, these additions were done in such a way as to be compatible with the original design of the buildings and campus. None have been moved from their original location; therefore, GGBTS retains integrity of association and setting. However, eligibility for listing on the NRHP and the CRHR rests on twin factors of significance and integrity. A resource must have both significance and integrity to be considered eligible. Loss of integrity, if sufficiently great, will become more important than the historical significance a resource may possess and render it ineligible. Likewise, a resource can have complete integrity, but if it lacks significance, it must also be considered ineligible. Therefore, although GGBTS retains its integrity, it lacks significance and therefore does not appear eligible for listing in either the CRHR or the NRHP.

***D6. References (con't)**

American Institute of Architects. 2018 (January). Post-War Schools Portfolio II: John Carl Warnecke, FAIA. Available: https://aiacalifornia.org/post-war-schools-portfolio-ii-john-carl-warnecke-faia/. Accessed May 28, 2022.

Architectuul. 2022. Hawaii State Capitol. Available: http://architectuul.com/architecture/hawaii-state-capitol. Accessed May 28, 2022.

Baker, Robert A. 1979. Baptist History and Heritage Society. "Southern Baptist Beginnings". Available: https://www.baptisthistory.org/baptistorigins/southernbaptistbeginnings.html. Accessed February 21, 2022.

Cultural Landscape Foundation. 2016. The Landscape Architecture of Lawrence Halprin. Available: https://tclf.org/sites/default/files/microsites/halprinlegacy/. Accessed November 4, 2021.

Fahmy, Dalia. 2019. Pew Research Center. "7 Facts about Southern Baptists." Available: https://www.pewresearch.org/fact-tank/2019/06/07/7-facts-about-southern-baptists/. Accessed February 21, 2022.

Fairchild, Mary. 2019. Learn Religions. "Southern Baptist History". Available: https://www.learnreligions.com/southern-baptist-church-history-700525. Accessed February 21, 2022.

Gateway Seminary. 2021. Seminary History. Available: www.gs.edu/about/seminary-history/. Accessed June 29, 2021.

Graves, Harold K. 1983. Into the Wind: Personal Reflections on the Early Years of Golden Gate Baptist Theological Seminary. Nashville, Tennessee: Broadman Press.

Grimes, William. 2010. The New York Times. John Carl Warnecke, Architect to Kennedy, Dies at 91. April 22, 2010. Available: https://www.nytimes.com/2010/04/23/arts/design/23warnecke.html

Los Angeles Conservancy. 2020. Lawrence Halprin. Available: https://www.laconservancy.org/architects/lawrence-halprin. Accessed November 4, 2021.

Main History Museum. 2022. Artifacts, Photographs & Archives. Online Collections Database. Available: https://marinhistory.pastperfectonline.com/photo?only_images=on&page=1&search_criteria=seminary&utf8=%E2%9C%93.

National Park Service (NPS). 2001. National Historic Landmark Nomination form for Mabel McDowell Elementary School. NRHP Reference No. 1000068. Prepared by Storrow Kinsella Partnership Inc.

National Environmental Title Research (NETR), LLC. 2022. 1956, 1958, 1968, 1982, 1987, 1993, 2016, 2018 Aerial Photographs of GGBST campus. Available: http://www.historicaerials.com/. Accessed May 2022.

Seminaries and Bible Colleges. 2022. Golden Gate Baptist Theological Seminary. Available: http://seminariesandbiblecolleges.com/golden-gate-baptist-theological-seminary/. Accessed February 15, 2022.

Smith, Chris. 2010. The Press Democrat. John 'Jack' Warnecke, famed architect, dies at Sonoma County ranch. April 20, 2010. Available: https://www.pressdemocrat.com/article/news/john-jackwarnecke-famed-architect-dies-at-sonoma-county-ranch/

Wood, Jim. 2019. Marin Magazine. "The First Baptist Theological School in the Western US". Available: marinmagazine.com/arts-events/things-to-do/the-first-baptist-theological-school-in-the-western-us/. Accessed July 26, 2021.

State of California ♉ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 7 ***Resource Name or #:** (Assigned by recorder) Graves Administration Building / Map ID #25
P1. Other Identifier:

***P2. Location:** ϒ **Not for Publication** ☒ **Unrestricted**

***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** San Rafael **Date** **T** 01N ; **R** 06W ; ϒ **of** ϒ **of Sec** 34 ; **B.M.**

c. Address 201 Seminary Drive City Mill Valley Zip 94941

d. UTM: Zone 10S , 543593.60 mE/ 4193357.16 mN

e. Other Locational Data:

***P3a. Description:** The administration building is a two-story, 25,200-sf building with a rectangular plan. The building has a side-gabled roof clad in Spanish tiles with moderate eaves. On the east end of the building and along the primary façade, the first floor extends out passed the footprint of the second floor. This extension has a break along the primary façade to create the main entrance. The building features a curtainwall system with awning windows; metal panels are located at the base. Exposed concrete is visible at the gabled ends. Due to elevation changes accommodated by a staircase and retaining rock wall, only the second floor is visible from the majority of the courtyard at the rear, southern façade. A recessed secondary entrance, in-line with the primary entrance, is located on the southern façade.

***P3b. Resource Attributes:** HP15. Educational Building

***P4. Resources Present:** ☒ Building ϒ Structure ϒ Object ϒ Site ϒ District ϒ Element of District ϒ Other (Isolates, etc.)

P5b. Description of Photo: Primary (northern) façade, facing southeast, 11/22/2021

***P6. Date Constructed/Age and Source:** 1958-59 / aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ϒ Prehistoric ϒ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021

***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project.* Prepared for the County of Marin.

***Attachments:** ϒNONE ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record
ϒArchaeological Record ☒District Record ϒLinear Feature Record ϒMilling Station Record ϒRock Art Record
ϒArtifact Record ϒPhotograph Record ϒ Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** Graves Administration Building / Map ID #25 ***NRHP Status Code** 6Z

B1. Historic Name: Graves Administration Building
B2. Common Name: Graves Administration Building
B3. Original Use: administrative offices B4. Present Use: administrative offices
***B5. Architectural Style:**
***B6. Construction History:** Construction complete in 1958-1959.

***B7. Moved?** ☒**No** ϒ**Yes** ϒ**Unknown** **Date:** N/A **Original Location:** N/A
***B8. Related Features:** N/A

B9a. Architect: John Carl Warnecke b. Builder: unknown

***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A

This building does not appear to meet the criteria for individual listing on the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP). It was evaluated for inclusion in a potential historic district as part of the former Golden Gate Baptist Theological Seminary (GGBTS).

History of the Graves Administration Building at the Golden Gate Baptist Theological Seminary

The Graves Administration Building is part of the former GGBTS at 201 Seminary Drive in Mill Valley. The GGBTS DPR523 District Record provides a comprehensive history of the GGBTS campus and should be referenced to gain additional contextual information.

Based on aerial photography, the Graves Administration Building was constructed between 1959 and 1962.

B11. Additional Resource Attributes: (List attributes and codes) N/A

***B12. References:** See GGBTS District Record

B13. Remarks: none

***B14. Evaluator:** Alta Cunningham, MA, and Amber Grady, MA
***Date of Evaluation:** 3/24/2023

(This space reserved for official comments.)

P3a. Description (continued)

Photo 1. Primary (northern) façade. Facing southeast. Photo taken 11/22/2021.

Photo 2. Northeastern façade. Facing south. Photo taken 11/22/2021.

Photo 3. Secondary (southern) façade. Facing southwest. Photo taken 11/22/2021.

Photo 4. Secondary (southern) façade. Facing northwest. Photo taken 11/22/2021.

B10. Significance (continued)

NRHP and CRHR Evaluation

Application of Significance Criteria

To be considered eligible for listing in the NRHP/CRHR under Criterion A/1, a building must be associated with events that have made a significant contribution to the broad patterns of our nation's, California's, or local history. The administration building was constructed to help facilitate activities at GGBTS. The historic record did not show that the construction of this building was associated with any noteworthy or specific programs to advance GGBTS or the SBC. Because the historic record does not show the building to be associated with events that have made a significant contribution to history, it does not appear to meet NRHP/CRHR Criterion A/1.

B10. Significance (continued)

To be considered eligible for listing in the NRHP/CRHR under Criterion B/2, a building must be associated with the lives of persons significant in our past. It must be shown that the person gained importance within his or her profession or group while working in the building. The GGBTS was a respected program that reflected the work and contributions of many people; however, historical research did not reveal specific individually significant researchers or lecturers that have direct important association with the administration building. Also, while the building was designed by John Carl Warnecke, it does not appear to be the most representative example of his work, discussed further under Criterion C. Therefore, the administration building does not appear to meet NRHP/CRHR Criterion B/2.

Under NRHP/CRHR Criterion C/3, a building must embody distinctive characteristics of a type, period, or method of installation, or represent the work of a master, or possess high artistic values. The administration building was designed by architect John Carl Warnecke who specialized in modernist designs, such as the Hawaii State Capitol building, and contextual architecture that reflected his passion for structures that harmonized with the environment, as seen in Mira Vista Elementary School. The administration building is a typical institutional design, not representative of modernist design or Warnecke's typical work. While the administration building is the work of a master, it lacks architectural distinction, does not have artistic qualities, and therefore does not appear to possess sufficient design or construction value to warrant inclusion in the NRHP/CRHR under Criterion C/3.

Criterion D/4 generally applies to archaeological resources, or other resources that through study of construction details can provide information that cannot be obtained in other ways. Construction details about the administration building has been documented and are stored at the Gateway Seminary library in Ontario, California. The building does not appear to be significant under this criterion because it is not likely to yield any additional important information about our history.

Integrity Consideration

The administration building retains its integrity. The building has had no known alterations which detract from the original design, materials, workmanship, or feeling of the buildings. The building has not been moved from its original location, and therefore retains integrity of association and setting. However, eligibility for listing on the NRHP and the CRHR rests on twin factors of significance and integrity. A resource must have both significance and integrity to be considered eligible. Loss of integrity, if sufficiently great, will become more important than the historical significance a resource may possess and render it ineligible. Likewise, a resource can have complete integrity, but if it lacks significance, it must also be considered ineligible. Therefore, although the administration building retains integrity, it lacks significance and therefore does not appear eligible for listing in either the CRHR or the NRHP.

State of California ♁ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code Reviewer Date

Page 1 **of** 7 ***Resource Name or #:** (Assigned by recorder) Academic Building / Map ID #26
P1. Other Identifier: Broadus Hall / Building 2100

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** San Rafael **Date** ____ **T** 01N ; **R** 06W ; __ ϒ **of** __ ϒ **of Sec** 34 ; ____ **B.M.**
c. Address ____ City Mill Valley Zip 94941
d. UTM: Zone 10S , 543589.51 mE/ 4193352.88 mN
e. Other Locational Data:

***P3a. Description:** The Academic Building (Building 2100) is located on the eastern part of the GGBST campus, east of Gilbert Drive and south of Storer and Herring drives, and north of Chapel Drive. A courtyard is present between the Academic Building. The academic building is a two-story, 51,200-sf building with a hyphenated rectangular plan; the building is composed of four masses connected by narrow, single-story hyphens. The building has a side-gabled roof clad in Spanish tiles with moderate eaves. Exposed concrete is visible at the gabled ends. The building features a curtainwall system with awning windows; metal panels are located at the base.

***P3b. Resource Attributes:** HP15. Educational Building
***P4.Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: Primary (northern) façade, facing east, 11/22/2021.

***P6. Date Constructed/Age and Source:** 1958-59 / aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project.* Prepared for the County of Marin.

***Attachments:** ☐NONE ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record
☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** (Assigned by recorder) Academic Building / Map ID# 26 ***NRHP Status Code** 6Z

B1. Historic Name: Broadus Hall
B2. Common Name: Academic Building / Child Development Center
B3. Original Use: classrooms / chapel B4. Present Use: classrooms / chapel / child care center / bookstore
***B5. Architectural Style:**
***B6. Construction History:** Construction complete in 1959.

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown** **Date:** **Original Location:**
***B8. Related Features:** N/A

B9a. Architect: John Carl Warnecke b. Builder: unknown

***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A

This building does not appear to meet the criteria for individual listing on the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP). It was evaluated for inclusion in a potential historic district as part of the former Golden Gate Baptist Theological Seminary (GGBTS).

History of the Academic Building at the Golden Gate Baptist Theological Seminary

The Academic Building is part of the former GGBTS at 201 Seminary Drive in Mill Valley. The GGBTS DPR523 District Record provides a comprehensive history of the GGBTS campus and should be referenced to gain additional contextual information.

Based on aerial photography, the Academic Building was constructed between 1958 and 1959.

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:** See GGBTS District Record

B13. Remarks:

***B14. Evaluator:** Alta Cunningham, MA, and Amber Grady, MA
***Date of Evaluation:** 3/24/2023

(This space reserved for official comments.)

P3a. Description (continued)

The building is accessed from the courtyard located behind the administration building; double glass doors are located at each recessed hyphen. The southernmost hyphen is designed at a 90-degree angle. As with the administration building, only the second floor is visible from the courtyard.

Photo 1. Academic Building (Building 2100), northeastern-most section. Facing east. Photo taken 11/22/2021.

Photo 2. Academic Building (Building 2100). Facing southeast. Photo taken 11/22/2021.

Photo 3. Academic Building (Building 2100), breezeway between child development center and classrooms to the northeast. Facing southeast. Photo taken 11/22/2021.

Photo 4. Academic Building (Building 2100), child development center. Facing east. Photo taken 11/22/2021.

Photo 5. Courtyard with Academic Building on the left and Administration Building on the right. Facing northeast. Photo taken 11/22/2021.

B10. Significance (continued)

NRHP and CRHR Evaluation

Application of Significance Criteria

To be considered eligible for listing in the NRHP/CRHR under Criterion A/1, a property must be associated with events that have made a significant contribution to the broad patterns of our nation's, California's, or local history. The potential significance of the Academic Building can best be understood in the context of the whole GGBTS campus and was evaluated as such in the District Evaluation. The District Evaluation determined that because the historic record did not show the property to be associated with events that have made a significant contribution to history, it did not appear to meet NRHP/CRHR Criterion A/1. The Academic Building was constructed to help facilitate the goal of the GGBTS and the SBC. The historic record did not show that the construction of this building was associated with any noteworthy or specific programs to advance GGBTS or the SBC. Because the historic record does not show the academic building to be associated with events that have made a significant contribution to history, it does not appear to meet NRHP/CRHR Criterion A/1.

B10. Significance (continued)

To be considered eligible for listing in the NRHP/CRHR under Criterion B/2, a building must be associated with the lives of persons significant in our past. It must be shown that the person gained importance within his or her profession or group while working in the building. The GGBTS was a respected program that reflected the work and contributions of many people; however, historical research did not reveal specific individually significant researchers or lecturers that have direct important association with the academic building. Also, while the building was designed by John Carl Warnecke, it does not appear to be the most representative example of his work, discussed further under Criterion C. Therefore, the academic building does not appear to meet NRHP/CRHR Criterion B/2.

Under NRHP/CRHR Criterion C/3, a building must embody distinctive characteristics of a type, period, or method of installation, or represent the work of a master, or possess high artistic values. The academic building was designed by architect John Carl Warnecke who specialized in modernist designs, such as the Hawaii State Capitol building, and contextual architecture that reflected his passion for structures that harmonized with the environment, as seen in Mira Vista Elementary School. The academic building is a typical institutional design, not representative of modernist design or Warnecke's typical work. While the academic building is the work of a master, it lacks architectural distinction, does not have artistic qualities, and therefore does not appear to possess sufficient design or construction value to warrant inclusion in the NRHP/CRHR under Criterion C/3.

Criterion D/4 generally applies to archaeological resources, or other resources that through study of construction details can provide information that cannot be obtained in other ways. Construction details about the academic building has been documented and are stored at the Gateway Seminary library in Ontario, California. The building does not appear to be significant under this criterion because it is not likely to yield any additional important information about our history.

Integrity Consideration

The academic building retains its integrity. The building has had no known alterations which detract from the original design, materials, workmanship, or feeling of the buildings. The building has not been moved from its original location, and therefore retains integrity of association and setting. However, eligibility for listing on the NRHP and the CRHR rests on twin factors of significance and integrity. A resource must have both significance and integrity to be considered eligible. Loss of integrity, if sufficiently great, will become more important than the historical significance a resource may possess and render it ineligible. Likewise, a resource can have complete integrity, but if it lacks significance, it must also be considered ineligible. Therefore, although the academic building retains integrity, it lacks significance and therefore does not appear eligible for listing in either the CRHR or the NRHP.

State of California ♁ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code Reviewer Date

Page 1 **of** 5 ***Resource Name or #:** (Assigned by recorder) Cafeteria / Map ID #28
P1. Other Identifier:
ridge
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** San Rafael **Date** **T** 01N ; **R** 06W ; ☐ **of** ☐ **of Sec** 34 ; **B.M.**
c. Address Gilbert Drive City Mill Valley Zip 94941
d. UTM: Zone 10S , 543593.21 mE/ 4193465.43 mN
e. Other Locational Data:

***P3a. Description:**

The Cafeteria Building is located in the eastern portion of the GGBTS campus; Gilbert Drive is to the east, Herring Drive to the north, Storer Drive to the east, and the Library to the south. The Cafeteria Building is a one-story building with a raised basement exposed on the east end on the downhill side of the site. The building has a front gabled roof with wide eaves and clad in clay tiles and rectangular footprint. The exposed basement appears to be constructed of concrete while the first floor is a metal framed glass curtain walls. See Continuation Sheet, page 3.

***P3b. Resource Attributes:** HP15. Educational Building
***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)

P5b. Description of Photo: (view, date, accession #) Western and southern facades, facing north, 11/22/2021

***P6. Date Constructed/Age and Source:** 1958-59/ aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
455 Capitol Mall, Suite 300
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project.* Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record
☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** (Assigned by recorder) Cafeteria / Map ID #28 ***NRHP Status Code** 6Z
Page 2 **of** 5

B1. Historic Name: Cafeteria
B2. Common Name: Cafeteria
B3. Original Use: cafeteria B4. Present Use: cafeteria
***B5. Architectural Style:**
***B6. Construction History:** Construction complete in 1959.

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown** **Date:** N/A **Original Location:** N/A
***B8. Related Features:** N/A

B9a. Architect: John Carl Warnecke b. Builder: unknown

***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A

This building does not appear to meet the criteria for individual listing on the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP). It was evaluated for inclusion in a potential historic district as part of the former Golden Gate Baptist Theological Seminary (GGBTS).

History of the Cafeteria at the Golden Gate Baptist Theological Seminary

The Cafeteria is part of the former GGBTS at 201 Seminary Drive in Mill Valley. The GGBTS DPR523 District Record provides a comprehensive history of the GGBTS campus and should be referenced to gain addition contextual information.

Based on aerial photography, the Cafeteria was constructed between 1958 and 1959.

B11. Additional Resource Attributes: (List attributes and codes) N/A

***B12. References:** See GGBTS District Record

B13. Remarks: none

***B14. Evaluator:** Alta Cunningham, MA, and Amber Grady, MA
***Date of Evaluation:** 3/24/2023

(This space reserved for official comments.)

P3a. Description (continued)

The primary (western) façade includes two sets of glazed, aluminum framed double doors and the rest of the wall consists of fixed glass panels that are both clear and opaque. A full façade, wooden, slated privacy screen supports the wide eave; this also creates a cover for the entry ways.

The southern façade includes a small portion of the raised basement at the eastern end of the façade; one door and two large vents are present. The first-floor level included a pair of solid doors; the rest of the wall consists of fixed glass panels that are both clear and opaque.

The eastern façade includes the exposed portion of the raised basement the full length of the façade; there are number of solid doors and vents. The first-floor level includes fixed glass panels that are both clear and opaque.

Photo 1. Primary façade with protected wood grill screen. Facing southeast. Photo taken 11/22/2021.

Photo 2. Primary (western) façade. Facing east. Photo taken 11/22/2021.

B10. Significance (continued)

NRHP and CRHR Evaluation

Application of Significance Criteria

To be considered eligible for listing in the NRHP/CRHR under Criterion A/1, a property must be associated with events that have made a significant contribution to the broad patterns of our nation's, California's, or local history. The potential significance of the Cafeteria can best be understood in the context of the whole GGBTS campus and was evaluated as such in the District Evaluation. The District Evaluation determined that because the historic record did not show the property to be associated with events that have made a significant contribution to history, it did not appear to meet NRHP/CRHR Criterion A/1. No additional information has been discovered that would indicate that the Cafeteria individually made a significant contribution to the broad patterns of our nation's, California's, or local history; therefore, it does not appear to meet NRHP/CRHR Criterion A/1 as an individual property.

B10. Significance (continued)

To be considered eligible for listing in the NRHP/CRHR under Criterion B/2, a property must be associated with the lives of persons significant in our past. It must be shown that the person gained importance within his or her profession or group while working in the building. The establishment of a Baptist seminary in California is credited to Isam B. Hodges and the expansion of GGBTS in Berkeley is credited to Dr. Benjamin O. Herring and Dr. Harold K. Graves. The potential significance of the Cafeteria can best be understood in the context of the whole GGBTS campus and was evaluated as such in the District Evaluation. The District Evaluation determined that although Graves was responsible for the founding of the Marin campus of GGBTS, this does not rise to the level of significance necessary for NRHP or CRHR consideration and the Marin campus of GGBTS does not appear to meet NRHP/CRHR Criterion B/2. Also, while the Marin campus of GGBTS was designed by John Carl Warnecke and Lawrence Halprin, archival research has revealed no such association with regards to the Cafeteria, discussed further under Criterion C. Therefore, the Cafeteria does not appear to meet NRHP/CRHR Criterion B/2 as an individual property.

Under NRHP/CRHR Criterion C/3, a property must embody distinctive characteristics of a type, period, or method of installation, or represent the work of a master, or possess high artistic values. The potential significance of the Cafeteria can best be understood in the context of the whole GGBTS campus and was evaluated as such in the District Evaluation. While the GGBTS campus was designed by architect John Carl Warnecke and landscape architect Lawrence Halprin, significant figures in the fields of architecture, the District Evaluation determined that the campus was not representative of Warnecke's or Halprin's work and did not appear eligible for inclusion in the NRHP/CRHR under Criterion C/3. While the GGBTS campus was designed by architect John Carl Warnecke and landscape architect Lawrence Halprin archival research as revealed no such association with regards to the Cafeteria. The architect and builder of the Cafeteria are unknown and the building lacks the architectural and design values of a master, therefore does not appear to possess sufficient design or construction value to warrant inclusion in the NRHP/CRHR under Criterion C/3.

Criterion D/4 generally applies to archaeological resources, or other resources that through study of construction details can provide information that cannot be obtained in other ways. Construction details about the Cafeteria with regards to alterations and additions are unknown; however, the property does not appear to be significant under this criterion because it is not likely to yield any additional important information about our history.

Integrity Consideration

The Cafeteria appears to retain its integrity. The property has had visible no demolitions or additions which detract from the original design, materials, workmanship, or feeling of the building. The building has not been moved from its original location and no major alterations through the construction or demolition of surrounding buildings, structures, of features has occurred; therefore, the Cafeteria retains integrity of location, association, and setting. However, eligibility for listing on the NRHP and the CRHR rests on twin factors of significance and integrity. A resource must have both significance and integrity to be considered eligible. Loss of integrity, if sufficiently great, will become more important than the historical significance a resource may possess and render it ineligible. Likewise, a resource can have complete integrity, but if it lacks significance, it must also be considered ineligible. Therefore, although the Cafeteria retains its integrity, it lacks significance and therefore does not appear eligible for listing in either the CRHR or the NRHP.

State of California ♄ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 4 ***Resource Name or #:** (Assigned by recorder) President's Home / Map ID #4
P1. Other Identifier:
ridge
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** San Rafael **Date** **T** 01N ; **R** 06W ; ☐ **of** ☐ **of Sec** 34 ; **B.M.**
c. Address 157 Chapel Drive City Mill Valley Zip 94941
d. UTM: Zone 10S , 543174.28 mE/ 4193161.39 mN
e. Other Locational Data:

***P3a. Description:** The President's home is located in the southwestern portion of the GGBTS campus. The single-story building is a single-family residence that is surrounded by landscaping on all sides, including a driveway on the north side and a paved parking area on the east side. The Ranch-style residence consists of multiple rectangular-shaped volumes creating an irregular footprint with an inner courtyard. The residence It has a cross-gabled and hipped roof forms that are clad in composite shingles. The eaves appear to be boxed and capped with facia boards. See Continuation Sheet, page 3.

***P3b. Resource Attributes:** HP2. Single family property
***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)

P5b. Description of Photo: (view, date, accession #) Primary (eastern) façade, facing west, 11/22/2021

***P6. Date Constructed/Age and Source:** c1959-62/ aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
455 Capitol Mall, Suite 300
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project*. Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record
☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** (Assigned by recorder) President's Home / Map ID #4 ***NRHP Status Code** 6Z

B1. Historic Name: President's Home
B2. Common Name: President's Home
B3. Original Use: single family residence B4. Present Use: single family residence
***B5. Architectural Style:** Ranch
***B6. Construction History:** Constructed c1959-62.

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown** **Date:** N/A **Original Location:** N/A
***B8. Related Features:** N/A

B9a. Architect: unknown b. Builder: unknown

***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A

This building does not appear to meet the criteria for individual listing on the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP). It was evaluated for inclusion in a potential historic district as part of the former Golden Gate Baptist Theological Seminary (GGBTS).

History of the President's Home at the Golden Gate Baptist Theological Seminary

The President's Home is part of the former GGBTS at 201 Seminary Drive in Mill Valley. The GGBTS DPR523 District Record provides a comprehensive history of the GGBTS campus and should be referenced to gain addition contextual information.

Based on aerial photography, the President's Home was constructed between 1959 and 1962. It is somewhat isolated from the rest of the GGBTS campus.

B11. Additional Resource Attributes: (List attributes and codes) N/A

***B12. References:** See GGBTS District Record

B13. Remarks: none

***B14. Evaluator:** Alta Cunningham, MA, and Amber Grady, MA
***Date of Evaluation:** 3/24/2023

(This space reserved for official comments.)

P3a. Description (continued)

The primary (eastern) façade is asymmetrical with the entry recessed approximately in the middle consisting of a pair of wood panels doors flanked by side lights. There are windows under each of the projecting gable ends that flank the entry. The other facades were not visible from the public right-of-way.

Photo 1. Primary (eastern) façade. Facing west. Photo taken 11/22/2021.

B10. Significance (continued)

NRHP and CRHR Evaluation

Application of Significance Criteria

To be considered eligible for listing in the NRHP/CRHR under Criterion A/1, a property must be associated with events that have made a significant contribution to the broad patterns of our nation's, California's, or local history. The potential significance of the President's Home can best be understood in the context of the whole GGBTS campus and was evaluated as such in the District Evaluation. The District Evaluation determined that because the historic record did not show the property to be associated with events that have made a significant contribution to history, it did not appear to meet NRHP/CRHR Criterion A/1. No additional information has been discovered that would indicate that the President's House individually made a significant contribution to the broad patterns of our nation's, California's, or local history; therefore, it does not appear to meet NRHP/CRHR Criterion A/1 as an individual property.

B10. Significance (continued)

To be considered eligible for listing in the NRHP/CRHR under Criterion B/2, a property must be associated with the lives of persons significant in our past. It must be shown that the person gained importance within his or her profession or group while working in the building. The establishment of a Baptist seminary in California is credited to Isam B. Hodges and the expansion of GGBTS in Berkeley is credited to Dr. Benjamin O. Herring and Dr. Harold K. Graves. The potential significance of the President's Home can best be understood in the context of the whole GGBTS campus and was evaluated as such in the District Evaluation. The District Evaluation determined that although Graves was responsible for the founding of the Marin campus of GGBTS, this does not rise to the level of significance necessary for NRHP or CRHR consideration and the Marin campus of GGBTS does not appear to meet NRHP/CRHR Criterion B/2. Also, while the Marin campus of GGBTS was designed by John Carl Warnecke and Lawrence Halprin, archival research as revealed no such association with regards to the President's House, discussed further under Criterion C. Therefore, the President's House does not appear to meet NRHP/CRHR Criterion B/2 as an individual property.

Under NRHP/CRHR Criterion C/3, a property must embody distinctive characteristics of a type, period, or method of installation, or represent the work of a master, or possess high artistic values. The potential significance of the President's Home can best be understood in the context of the whole GGBTS campus and was evaluated as such in the District Evaluation. While the GGBTS campus was designed by architect John Carl Warnecke and landscape architect Lawrence Halprin, significant figures in the fields of architecture, the District Evaluation determined that the campus was not representative of Warnecke's or Halprin's work and did not appear eligible for inclusion in the NRHP/CRHR under Criterion C/3. While the GGBTS campus was designed by architect John Carl Warnecke and landscape architect Lawrence Halprin archival research as revealed no such association with regards to the President's Home. The architect and builder of the President's Home are unknown and the building lacks the architectural and design values of a master, therefore does not appear to possess sufficient design or construction value to warrant inclusion in the NRHP/CRHR under Criterion C/3.

Criterion D/4 generally applies to archaeological resources, or other resources that through study of construction details can provide information that cannot be obtained in other ways. Construction details about the President's Home with regards to alterations and additions are unknown; however, the property does not appear to be significant under this criterion because it is not likely to yield any additional important information about our history.

Integrity Consideration

The President's Home appears to retain its integrity. The property has had visible no demolitions or additions which detract from the original design, materials, workmanship, or feeling of the building. The building has not been moved from its original location and no major alterations through the construction or demolition of surrounding buildings, structures, of features has occurred; therefore, the President's Home retains integrity of location, association, and setting. However, eligibility for listing on the NRHP and the CRHR rests on twin factors of significance and integrity. A resource must have both significance and integrity to be considered eligible. Loss of integrity, if sufficiently great, will become more important than the historical significance a resource may possess and render it ineligible. Likewise, a resource can have complete integrity, but if it lacks significance, it must also be considered ineligible. Therefore, although the President's Home retains its integrity, it lacks significance and therefore does not appear eligible for listing in either the CRHR or the NRHP.

State of California ♉ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code Reviewer Date

Page 1 **of** 2 ***Resource Name or #:** (Assigned by recorder) Library / Map ID #27
P1. Other Identifier:
ridge
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** San Rafael **Date** **T** 01N ; **R** 06W ; ☐ **of** ☐ **of Sec** 34 ; **B.M.**
c. Address City Mill Valley Zip 94941
d. UTM: Zone 10S , 543665.72 mE/ 4193395.13 mN
e. Other Locational Data:

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Library Building is located in eastern portion of the GGBST campus. The Library Building is a single-story building with a side gabled, Spanish clay tile roof. The building exterior consists of exposed aggregate rock, with elevated end blocks of exposed aggregate rocks on the northern and southern façades. On the primary (western) façade, a slab cornice of vertical wood siding extends from the edge of the roof. The primary façade also presents a centered, recessed, main entrance with angled entrance walls.

***P3b. Resource Attributes:** HP15. Educational Building
***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)

P5b. Description of Photo: (view, date, accession #) Primary facade, facing west, 11/22/2021

***P6. Date Constructed/Age and Source:** c1977-82 / aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:**
Alta Cunningham & Kirsten Burrowes
Ascent Environmental
455 Capitol Mall, Suite 300
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project*. Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

Photo 1. Northern façade. Facing south. Photo taken 11/22/2021.

Photo 2. Primary (western) façade. Facing east. Photo taken 11/22/2021.

State of California ♉ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 4 ***Resource Name or #:** Bagby, Gill, and Maddox Halls / Map ID #s 40, 41, and 42
P1. Other Identifier:
ridge
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** San Rafael **Date** **T** 01N ; **R** 06W ; ☐ **of** ☐ **of Sec** 34 ; **B.M.**
c. Address Foreman Lane City Mill Valley Zip 94941
d. UTM: Zone 10S , 543275.36 mE/ 4193590.80 mN
e. Other Locational Data:

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Bagby, Gill, and Maddox halls are located in the northern portion of the GGBST campus; the three buildings are clustered together in an area bounded by Shuck Drive to the east and west, Hodges Drive to the south, and Foreman Lane to the north. Bagby Hall is closest to Foreman Lane with Maddox Hall to the east and Gill Hall to the south. All three buildings are multi-family residential and are two-story. (Continued on page 2)

***P3b. Resource Attributes:** HP3. Multiple family property
***P4.Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)

P5b. Description of Photo: (view, date, accession #) Primary (northwestern) façade of Bagby Hall, facing south, 11/22/2021

***P6. Date Constructed/Age and Source:** 1959 / aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:**
Alta Cunningham & Kirsten Burrowes
Ascent Environmental
455 Capitol Mall, Suite 300
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project*. Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

P3a. Description (continued)

Bagby Hall is a two-story, building with an offset footprint. It has a side gabled roof clad in tarpaper with wide eaves, exposed rafter tails, and facia boards. It is clad in a combination of horizontal and vertical T-111 wood siding. It includes at least 16 residential units that each have an exterior entry, on the primary (northwestern) façade, consisting of a single door with a transom window. The non-transom style windows appear to be sliders. The second-floor units are accessed by a partially enclosed, exterior staircase at the northeastern end of the building which is covered by the roof. The rear (southeastern) façade includes sixteen tri-part windows; the center window appears to be fixed while the flanking windows appear to be sliders. The southwestern and northeastern facades have no window or door openings.

Gill Hall is a two story, rectangular shaped building. It has a side-gabled, tarpaper roof with wide eaves, exposed rafter tails, and facia boards. It is clad in a combination of horizontal and vertical T-111 wood siding. It includes 9 residential units, 4 downstairs and 5 upstairs, that each have an exterior entry, on the primary (northern) façade, consisting of a single door with a transom window and one slider window. The second-floor units are accessed by a partially enclosed, exterior staircases at each end of the building which are covered by the roof. A utility room and mailboxes are located on the first floor at the western end of the building. The rear (southern) façade includes 8 tri-part windows; the center window appears to be fixed while the flanking windows appear to be sliders. The eastern and western facades have no window or door openings.

Maddox Hall includes 8 residential units and consists of a double story, rectangular shaped building with a side-gabled composite shingle roof. The exterior of each of the buildings includes T-111 siding, aluminum framed windows, and open stairs for access to the second story. The rear (southwestern) façade includes 8 tri-part windows; the center window appears to be fixed while the flanking windows appear to be sliders.

Bagby and Gill Halls include transoms located over the single personnel doors while Maddox Hall includes sidelights adjacent to each of the single personnel doors.

Photo 1. Primary (northern) facade of Gill Hall. Facing south. Photo taken 11/22/2021.

Photo 2. Southern and primary (eastern) façades of Maddox Hall. Facing northwest. Photo taken 11/22/2021.

Photo 3. From left to right: Maddox, Gill, and Bagby halls. Facing southeast. Photo taken 11/22/2021.

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PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code Reviewer Date

Page 1 **of** 3 ***Resource Name or #:** (Assigned by recorder) Cascading Triplex / Map ID #12
P1. Other Identifier: 10 Judson Lane
ridge
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** San Rafael **Date** ____ **T** 01N ; **R** 06W ; ☐ **of** ☐ **of Sec** 34 ; ____ **B.M.**
c. Address 10 Judson Lane City Mill Valley Zip 94941
d. UTM: Zone 10S , 543202.18 mE/ 4193733.72 mN
e. Other Locational Data:

***P3a. Description:** (Describe resource and its major elements. (Include design, materials, condition, alterations, size, setting, and boundaries)

The cascading triplex building is located in the northwestern portion of the GGBST campus. The building is a single-story cascading triplex with an irregular footprint and concrete cinder block foundation that includes three residential units. The building includes a side gabled roof with exposed rater tails and facia boards clad in composite shingle. The exterior is clad in T-111 wood siding. The primary façade includes aluminum framed windows and three single entry doors.

***P3b. Resource Attributes:** HP3. Multiple family property
***P4.Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)

P5b. Description of Photo: (view, date, accession #) Primary (eastern) façade, facing west, 11/22/2021

***P6. Date Constructed/Age and Source:** c1959-65/ aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
455 Capitol Mall, Suite 300
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project*. Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

Photo 1. Primary (eastern) façade. Facing north. Photo taken 11/22/2021.

Photo 2. Southern and eastern facades. Facing north. Photo taken 11/22/2021.

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DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 3 ***Resource Name or #:** (Assigned by recorder) Mallory Hall / Map ID #29
P1. Other Identifier:
ridge
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** San Rafael **Date** **T** 01N ; **R** 06W ; ☐ **of** ☐ **of Sec** 34 ; **B.M.**
c. Address 403 Storer City Mill Valley Zip 94941
d. UTM: Zone 10S , 543511.16 mE/ 4193567.29 mN
e. Other Locational Data:

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Mallory Hall is a dormitory building and is located in northeastern portion of the GGBST campus. Mallory Hall has a truncated H-shaped footprint; the short side of the "H," closest to Storer Drive, is two stories and the long side of the "H" is one story. It has a cross gabled roof with exposed rafter tails clad in composite shingles. The wood siding is oriented both vertically and horizontally. The primary (northwestern) façade includes a pair of doors and large, fixed window. Windows on the secondary and rear facades are aluminum framed sliders.

***P3b. Resource Attributes:** HP15. Educational Building
***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)

P5b. Description of Photo: (view, date, accession #) Primary facade, facing southeast, 11/22/2021

***P6. Date Constructed/Age and Source:** c1977-82 / aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:**
Alta Cunningham & Kirsten Burrowes
Ascent Environmental
455 Capitol Mall, Suite 300
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project*. Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

Photo 1. Northwestern façade, short end of the "H". Facing east. Photo taken 11/22/2021.

Photo 2. Secondary (southwestern) façade. Facing northeast. Photo taken 11/22/2021.

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PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
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Page 1 **of** 3 ***Resource Name or #:** (Assigned by recorder) Off-set Duplexes / Map ID #16, 36, and 43
P1. Other Identifier: 6 Judson Lane, 2 Oliver Lane, and 1 Lockett Lane

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**

***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** San Rafael **Date** ____ **T** 01N ; **R** 06W ; __ ☐ **of** __ ☐ **of Sec** 34 ; ____ **B.M.**

c. Address 6 Judson Lane, 2 Oliver Lane, and 1 Lockett Lane City Mill Valley Zip 94941

d. UTM: Zone 10S , __ mE/ __mN

e. Other Locational Data:

***P3a. Description:** There are three off-set duplexes; one on Judson Lane, one on Oliver Lane, and one on Lockett Lane. Each of the buildings is a single-story residence with two units. Each has an irregular footprint and sits on a concrete cinder block foundation. The side gabled roofs include exposed rafter tails and facia boards. The buildings are all clad in T-111 wood siding. Roofing material varies amongst the buildings and includes a variety of composite shingle, metal, and tarpaper. The primary façades include aluminum framed windows and two single personnel doors. Some of the building variations include horizontal wood siding underneath the window fixtures and exterior locker storage along the primary façade. (See continuation sheet, page 2)

***P3b. Resource Attributes:** HP3. Multiple family property
***P4.Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)
P5b. Description of Photo: (view, date, accession #) Oliver Lane, primary (northern) façade, facing southeast, 11/22/2021

***P6. Date Constructed/Age and Source:** c. 1962-65 / aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
455 Capitol Mall, Suite 300
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project*. Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

Photo 1. Judson Lane. Northern façade. Facing south. Photo taken 11/22/2021.

Photo 2. 1 Lockett Lane. Northern façade. Facing south. Photo taken 11/22/2021.

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Review Code Reviewer Date

Page 1 **of** 4 ***Resource Name or #:** Off-set Triplexes / Map ID #11, 14, 17, 18, 19, 33, 34, 35, 38, 39, and 45
P1. Other Identifier:
ridge
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** San Rafael **Date** **T** 01N ; **R** 06W ; ☐ **of** ☐ **of Sec** 34 ; **B.M.**
c. Address multiple (see page 2) City Mill Valley Zip 94941
d. UTM: Zone 10S , mE/ mN
e. Other Locational Data:

***P3a. Description:** There are 11 off-set triplexes; five of which are on Judson Lane, three on Oliver Lane, two on Foreman Lane, and one on Lockett Lane, at the northern end of the GGBTS campus. Each of the buildings are rectangular shaped, single-story offset triplexes consisting of three residential units. The buildings include a side gabled roof, exposed rafters, closed eves, and are clad in vertical wood siding. The primary façade includes aluminum framed windows and three single entry doors. The triplex includes a concrete cinder block foundation. Variations of the building include composite shingle and tarpaper roofing material as well as horizontal wood siding underneath windows along the primary façade and some replacement windows.

***P3b. Resource Attributes:** HP3. Multiple family property
***P4.Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)
P5b. Description of Photo: (view, date, accession #) Primary (eastern) façade, Judson Lane, facing west, 11/22/2021

***P6. Date Constructed/Age and Source:** see Continuation Sheet (page 2) / aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
455 Capitol Mall, Suite 300
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project*. Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

Off-set Triplexes		
Map ID#	**Address**	**Construction Date**
19	3 Judson Lane	1958-59
18	4 Judson Lane	1958-59
17	5 Judson Lane	1958-59
14	8 Judson Lane	1958-59
11	11 Judson Lane	c1962-65
35	3 Oliver Lane	1958-59
34	4 Oliver Lane	1958-59
33	5 Oliver Lane	1958-59
38	1 Foreman Lane	c1962-65
39	7 Foreman Lane	1958-59
45	3 Lockett Lane	c1966-68

Photo 1. Secondary (southern) façade of Judson Lane. Facing northwest. Photo taken 11/22/2021.

Photo 2. Foreman Lane, primary façade. Facing south. Photo taken 11/22/2021.

Photo 2. Oliver Lane, primary façade. Facing south. Photo taken 11/22/2021.

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NRHP Status Code 6Z

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Page 1 **of** 3 ***Resource Name or #:** (Assigned by recorder) Missionary House / Map ID #5
P1. Other Identifier: none
ridge
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** San Rafael **Date** ____ **T** 01N ; **R** 06W ; ☐ **of** ☐ **of Sec** 34 ; **B.M.**
c. Address 116 Mission Drive City Sacramento Zip 95819
d. UTM: Zone 10S, 543624.71 mE/ 4193117.18 mN
e. Other Locational Data:

***P3a. Description:** The Missionary House is located in the southeastern portion of the GGBST campus. This one-story, single-family home has a rectangular footprint and a side gabled roof with exposed rafter tails and facia boards on the gable ends. The southeastern corner of the roof has a cutout to accommodate a mature tree. The exterior is clad in stucco. There is a possible half story located along the eastern façade. Additionally, the single garage, located on the southern portion of the building, is attached to the house via the roof creating a breezeway. The breezeway entry has been infilled by a wood door and horizontal wood screening along the primary façade.

***P3b. Resource Attributes:** HP2. Single family property
***P4.Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)

P5b. Description of Photo: (view, date, accession #) Primary (western) façade, facing east, 11/22/2021

***P6. Date Constructed/Age and Source:** c1968-74 / aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project*. Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

P3a. Description (continued)

The primary (western) façade is asymmetrical with the entry recessed under the roof toward the northern end of the façade. The entry includes a craftsman-style, wood panel door with six, fixed windows; wood paneled and glazed sidelights; and a transom window. The entry is flanked by four windows with two on each side of the doorway; all windows appear to be vinyl framed replacements.

Photo 1. Horizontal wood siding privacy screen at breezeway between home and garage along primary (western) façade. Facing east. Photo taken 11/22/2021.

Photo 2. Primary (western) and southern facades. Facing east. Photo taken 11/22/2021.

Photo 3. Northern and primary (western) facades. Facing south. Photo taken 11/22/2021.

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Primary #
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Trinomial
NRHP Status Code 6Z

Other Listings
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Page 1 **of** 3 ***Resource Name or #:** 110/112 Chapel Drive (Map ID #6) and 16 Platt Court (Map ID #7)
P1. Other Identifier: Platt Village (two duplexes)
ridge
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**

***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** San Rafael **Date** ____ **T** 01N ; **R** 06W ; ___ ☐ **of** ___ ☐ **of Sec** 34 ; ____ **B.M.**

c. Address 110/112 Chapel Drive, 16 Platt Court City Mill Valley Zip 94941

d. UTM: Zone 10S , 543647.73 mE/ 4193084.19 mN

e. Other Locational Data:

***P3a. Description:** The two identical duplexes at 110-112 Chapel Drive and 16 Platt Court are located in the southern portion of the GGBST campus. 110-112 Chapel Drive duplex is located at the northeast corner of Seminary and Chapel drives; 16 Platt Court is located just to the east of 110-112 Chapel Drive. Each of the two buildings is a two-story duplex with a rectangular footprint and a cross-gable main roof. The building exteriors are clad in a mix of stucco and wood panel siding and include aluminum slider windows. Each garage is one-story and has a front gabled roof and a large, roll-up doors. Each entry includes a recessed solid wood, paneled front door and alcove with a partial rock wall with an exterior light; the entry is covered by a cantilevered front gabled roof. A portion of the wall next to each entry is also clad with rock. The rear of the second story includes pop-outs for a back deck.

***P3b. Resource Attributes:** HP3. Multiple Family Property
***P4.Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)
P5b. Description of Photo: Primary (northern) façade of Chapel Dr duplex, facing east, 11/22/2021

***P6. Date Constructed/Age and Source:** c1968-74 / aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project.* Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

Photo 2. Secondary (southern) façade of 110-112 Chapel Drive duplex. Facing north. Photo taken 11/22/2021.

Photo 2. Primary (northern) façade of Platt Court duplex. Facing southwest. Photo taken 11/22/2021.

Photo 3. Single entry door along eastern façade of Platt Court duplex. Facing west. Photo taken 11/22/2021.

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Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
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Page 1 **of** 3 ***Resource Name or #:** (Assigned by recorder) 20 Platt Court / Map ID #8
P1. Other Identifier: Platt Village (4-plex)
ridge
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** San Rafael **Date** ____ **T** 01N ; **R** 06W ; ___ ☐ **of** ___ ☐ **of Sec** 34 ; ____ **B.M.**
c. Address 20 Platt Court City Mill Valley Zip 94941
d. UTM: Zone 10S , 543668.83 mE/ 4193095 mN
e. Other Locational Data:

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The 4-plex at 20 Platt Court is located in the southern portion of the GGBST campus. The two story, U-shaped building consists of a two-story rectangular mass that includes the four residential units as well as two, one story masses that project out from the primary façade and contain the garages. The roof is cross gabled with boxed eaves and is clad in composite shingles. Each of the one-story projections include two garage doors and is capped in a front gabled roof. The exterior consists of painted stucco and aluminum frame windows.

***P3b. Resource Attributes:** HP3. Multiple Family Property
***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)

P5b. Description of Photo: (view, date, accession #) Primary (southern) façade, facing north, 11/22/2021

***P6. Date Constructed/Age and Source:** c1968-74 / aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
455 Capitol Mall, Suite 300
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project*. Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

P3a. Description (continued)

The primary (southern) façade is symmetrical with the entry alcove is located centrally along the façade. The entry alcove includes four single entry doors to each of the residential units; a iron and concrete staircase is present to provide access to the second floor units. The alcove is flanked by windows on both the first and second floor levels. A rock clad wall is present at the garages creating a partially enclosed courtyard between the parking lot/driveway area and the alcove.

The secondary and rear facades were not visible from the public right-of-way.

Photo 1. Primary (southern) façade, including entry alcove. Facing north. Photo taken 11/22/2021.

Photo 2. Platt Court fourplex. Facing north. Photo taken 11/22/2021.

Photo 3. Platt Court fourplex. Facing north. Photo taken 11/22/2021.

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PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 3 ***Resource Name or #:** (Assigned by recorder) 24-26 Platt Court / Map ID #9
P1. Other Identifier: Platt Village (symmetrical duplex)
ridge
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** San Rafael **Date** ____ **T** 01N ; **R** 06W ; ___ ☐ **of** ___ ☐ **of Sec** 34 ; ____ **B.M.**
c. Address 24-26 Platt Court City Mill Valley Zip 94941
d. UTM: Zone 10S , 543688.24 mE/ 4193077.78 mN
e. Other Locational Data:

***P3a. Description:** The symmetrical duplex at 24-26 Platt Court is located in the southern portion of the GGBST campus. The building consists of a rectangular, single-story duplex with stucco and horizontal wood siding clad exterior and a side-gabled, composite shingle roof. The eaves of the roof include exposed rafter tails and facia boards.

The primary (southwestern) façade of the building is symmetrical and includes a recessed area centrally located under the roof; the main entrances to the residences are located here. Additionally, a single personnel door is located at each end of the façade off of each of the two single roll-up garage doors.

The secondary and rear facades were not visible from the public right-of-way.

***P3b. Resource Attributes:** HP3. Multiple Family Property
***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)

P5b. Description of Photo: Primary (southwestern) façade, facing northeast, 11/22/2021

***P6. Date Constructed/Age and Source:** c1968-74 / aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
455 Capitol Mall, Suite 300
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project*. Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

Photo 1. Primary (southwestern) façade - personnel doors off of single garages. Facing north. Photo taken 11/22/2021.

Photo 2. Central main entrance on primary (southwestern) façade. Facing northeast. Photo taken 11/22/2021.

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PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 6 ***Resource Name or #:** Symmetrical Duplexes / Map ID #13, 15, 20, 21, 37, 44, 46, 48, 49, 50
P1. Other Identifier:

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**

***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** San Rafael **Date** **T** 01N ; **R** 06W ; ☐ **of** ☐ **of Sec** 34 ; **B.M.**

c. Address 5, 6, and 7 Green Lane; 7 and 9 Judson; 1 and 2 Rice Lane; 1 Oliver Lane; 2 and 4 Lockett Lane
City Mill Valley Zip 94941

d. UTM: Zone 10S , mE/ mN

e. Other Locational Data:

***P3a. Description:** There are 10 symmetrical duplex buildings spread throughout the GGBST campus; two on Judson Lane, two on Rice Lane, one on Oliver Lane, two on Lockett Lane, and three on Green Lane. Each of the buildings are rectangular shaped, single-story duplexes that sit on concrete cinder block foundations. Each has a side gabled, composite shingle roof with exposed, clipped rafter tails and facia boards at the gable ends. Each building is clad in T-111 wood siding exterior. Each of the primary (northern) façades is symmetrical and includes aluminum framed windows and two single personnel doors. The secondary facades have no window or door openings. The rear facades include aluminum framed windows.

***P3b. Resource Attributes:** HP3. Multiple family property

***P4.Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)

P5b. Description of Photo: Green Lane, primary (northern) façade, facing southwest 11/22/2021

***P6. Date Constructed/Age and Source:** see page 2 / aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021

***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project*. Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

P3a. Description (continued)

Symmetrical Duplexes		
Map ID#	**Address**	**Construction Date**
13	9 Judson Lane	c1962-65
15	7 Judson Lane	1958-59
20	1 Rice Lane	1958-59
21	2 Rice Lane	1958-59
37	1 Oliver Lane	c1962-65
44	2 Lockett Lane	c1966-68
46	4 Lockett Lane	c1966-68
58	5 Green Lane	c1968-74
49	6 Green Lane	c1968-74
50	7 Green Lane	c1968-74

Photo 1. Judson Lane, primary façade, facing south. Photo taken 11/22/2021.

Photo 2. Rice Lane, primary façade, facing southwest. Photo taken 11/22/2021.

Photo 3. Oliver Lane, primary façade, facing west. Photo taken 11/22/2021.

Photo 4. Lockett Lane, primary façade, facing south. Photo taken 11/22/2021.

Photo 5. Green Lane, primary façade, facing south. Photo taken 11/22/2021.

Photo 6. Green Lane, primary façade, recessed entry. Facing south. Photo taken 11/21/2021.

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PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 5 ***Resource Name or #:** (Assigned by recorder) Tichenor Village / Map ID #1, 2, and 3
P1. Other Identifier: Redford Hall (Map ID #1), Gray Hall (Map ID #2), Lawrence Hall (Map ID #3)

*P2. **Location:** ☐ **Not for Publication** ☒ **Unrestricted**

*a. **County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

*b. **USGS 7.5' Quad** San Rafael **Date** ____ **T** 01N ; **R** 06W ; ☐ **of** ☐ **of Sec** 34 ; ____ **B.M.**

c. Address 169, 167, and 165 Chapel Drive City Mill Valley Zip 94941

d. UTM: Zone 10S, 543020.41 mE/ 4193126.00 mN

e. Other Locational Data:

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
Tichenor village is located in the southwestern portion of the GGBST campus and includes three multi-family residential buildings; Redford (169 Chapel Drive), Gray (167 Chapel Drive), and Lawrence (165 Chapel Drive) halls. There is a small, one-story laundry building at the east end of Gray Hall. A parking area is to the east of the buildings. The area between Gray and Lawrence halls is paved. See Continuation Sheet, page 3.

***P3b. Resource Attributes:** HP3. Multiple family property
***P4.Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)

P5b. Description of Photo: Primary (northern) façade of Lawrence Hall, facing southwest, 11/22/2021.

***P6. Date Constructed/Age and Source:** c1977-82/ aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
455 Capitol Mall, Suite 300
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project*. Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

P3a. Description (continued)

All three of the buildings are two story, have rectangular footprints, and side gabled roofs clad in shingles with wide eaves with exposed rafter tails and facia boards. The buildings are wood framed and clad in T-111 siding. The primary façade of each building includes aluminum framed windows and rectangular fixed windows adjacent to the single-entry doors. There are wrought iron railings along the building exterior to access the second story entries. The rear façade of each building includes aluminum framed windows. The secondary facades of each building do not include any window or door openings.

Photo 1. Northern façade of Gray Hall. Facing southwest. Photo taken 11/22/2021.

Photo 2. Southern façade of Lawrence Hall. Facing north. Photo taken 11/22/2021.

Photo 3. Primary (southern) facade of Gray Hall. Facing west. Photo taken 11/22/2021.

Photo 4. Lawrence Hall (left) and Gray Hall (right). Facing west. Photo taken 11/22/2021.

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PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code Reviewer Date

Page 1 **of** 2 ***Resource Name or #:** (Assigned by recorder) Truett Hall / Map ID #30
P1. Other Identifier:
ridge
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** San Rafael **Date** **T** 01N ; **R** 06W ; ☐ **of** ☐ **of Sec** 34 ; **B.M.**
c. Address 401 Storer City Mill Valley Zip 94941
d. UTM: Zone 10S , 543464.80 mE/ 4193598.09 mN
e. Other Locational Data:

***P3a. Description:** Truett Hall is a dormitory building and is located in northeastern portion of the GGBST campus. It has a rectangular footprint, two stories, and has a gabled roof with exposed rafter tails. The wood siding is oriented both vertically and horizontally. The northeastern and southwestern facades include exterior staircases and entries into the internal corridors on the first and second floors where the individual residential units are accessed. The northwestern and southeastern facades include aluminum framed slider windows and a passthrough corridor on the first floor that includes the mailboxes, exterior storage closes, and bike racks.

***P3b. Resource Attributes:** HP3. Multiple Family Property
***P4.Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)

P5b. Description of Photo: (view, date, accession #) Primary (northeastern) facade, facing southwest, 11/22/2021

***P6. Date Constructed/Age and Source:** c1977-82 / aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
455 Capitol Mall, Suite 300
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project*. Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

Photo 1. Northwestern façade. Facing southeast. Photo taken 11/22/2021.

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DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code Reviewer Date

Page 1 **of** 4 ***Resource Name or #:** (Assigned by recorder) Wallace, Mahon, Carey Halls / Map ID #22, 23, 24
P1. Other Identifier:
ridge
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** San Rafael **Date** **T** 01N ; **R** 06W ; ☐ **of** ☐ **of Sec** 34 ; **B.M.**
c. Address Shuck Drive City Mill Valley Zip 94941
d. UTM: Zone 10S , 543161.76 mE/ 4193728.08 mN
e. Other Locational Data:

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Wallace, Mahone, and Carey Halls are located in the northeastern portion of the GGBTS campus. They are multi-family residential buildings configured in a U-shape in the area bounded by Shuck Drive on the north and Judson Lane on the east, west, and south. Wallace Hall is oriented north-south and located on the west side of the grouping, Mahon Hall is oriented east-west and located on the south side of the grouping, and Carey Hall is oriented north-south and located on the east side of the grouping. Parking lots are located to the north and east.

***P3b. Resource Attributes:** HP3. Multiple family property
***P4.Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)

P5b. Description of Photo: Southern façade of Mahon Hall, facing northeast, 11/22/2021

***P6. Date Constructed/Age and Source:** 1958-59/ aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
455 Capitol Mall, Suite 300
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project*. Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

P3a. Description (continued)

Each two-story building has a rectangular footprint and a side gabled roof with wide eaves, exposed rafter tails, and clad in composite shingles. Each is also clad in T-111 siding. There are at least 10 residential units in each building. Roofing material consists of composite shingle. The primary façade of each building includes aluminum framed windows and single-entry doors with transom windows above. There are wrought iron safety fences along the building exterior to access the second story. Additionally, the second-story contains an elevated walkway connecting the three buildings.

Photo 1. Primary facades of Carey (left), Mahone (center) and Wallace (right) halls. Facing south. Photo taken 11/22/2021.

Photo 2. Primary facades of Mahone (left) and Wallace (right) halls. Facing south. Photo taken 11/22/2021.

Photo 3. Corner of Carey and Mahon halls and elevated second-story walkway connecting the buildings. Facing south. Photo taken 11/22/2021.

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Primary#
HRI #
Trinomial

CONTINUATION SHEET

Property Name: 300 Storer Drive / Map ID #31
Page 1 of 3

Page 1 **of** 3 ***Resource Name or #:** (Assigned by recorder) 300 Storer Drive / Map ID #31
P1. Other Identifier:

*P2. **Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** San Rafael **Date** ____ **T** 01N ; **R** 06W ; ☐ **of** ☐ **of Sec** 34 ; ____ **B.M.**
c. Address 300 Storer Drive City Mill Valley Zip 94941
d. UTM: Zone 10S , 543484.15 mE/ 4193707.90 mN
e. Other Locational Data:

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

300 Storer Drive is located in the northwestern portion of the GGBTS campus at the northeastern corner of Storer Drive and Reed Boulevard. The two-story, Contemporary-style residence has a low pitched, side gabled roof and a rectangular footprint. The roof includes wide eaves, the southwestern corner of which is supported by square, wooden posts to cover the entryway. The first floor is constructed of concrete cinderblock and the second floor is wood framed construction clad in horizontal wood siding, likely T-111.

***P3b. Resource Attributes:** HP2. Single family property
***P4.Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)

P5b. Description of Photo: (view, date, accession #) Southern façade, facing north, 11/22/2021

***P6. Date Constructed/Age and Source:** c1956-58 / aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
455 Capitol Mall, Suite 300
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project*. Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

P3a. Description (continued)

The second story exterior includes vertical wood siding and a single personnel door along the southern façade. Both stories include aluminum frame windows.

The primary (southern) façade includes the front door with a transom window above, which is recessed under the southwestern corner of the roof, and two windows. The two windows appear to be aluminum framed sliders with plain wooden trim. The western façade, which was only partially visible from the right-of-way, includes at least seven windows; three of the windows are sliders and there is a grouping of four fixed windows. The eastern façade includes two floors; the first floor includes a double personnel door flanked by four windows and three single roll-up garage doors at the first floor and five windows at the second floor. All of the windows on the eastern façade appear to be sliders and the one on the second floor include plain wooden trim. The northern façade was not visible from the right-of-way.

Photo 1. Southern façade. Facing north. Photo taken 11/22/2021.

Photo 2. Eastern façade. Facing northwest. Photo taken 11/22/2021.

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PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 3 ***Resource Name or #:** (Assigned by recorder) Laundry Building / Map ID #47
P1. Other Identifier:
ridge
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** San Rafael **Date** **T** 01N ; **R** 06W ; ☐ **of** ☐ **of Sec** 34 ; **B.M.**
c. Address City Mill Valley Zip 94941
d. UTM: Zone 10S , 543336.67 mE/ 4193713.36 mN
e. Other Locational Data:

***P3a. Description:** The laundry building is located in the northern portion of the GGBST campus, near the Lockett and Green buildings. It is surrounded to the east, west, and south by concrete walkways; the paved area to the west is enclosed by a wooden fence and includes metal posts for clothes lines. Two paved walkways extend east and connect the building to the network of sidewalks and ultimately to the parking lot to the south. The laundry building is a single-story building with a rectangular footprint and a flat, tarpaper roof with wide eaves and exposed rafter tails. A wooden trellis is present along the primary (eastern) façade that is supported by wooden posts. It is wood framed and clad in T-111 siding.

***P3b. Resource Attributes:** HP4. Ancillary Building
***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)

P5b. Description of Photo: Primary (eastern) façade, looking northwest, 11/22/2021

***P6. Date Constructed/Age and Source:** c1966-68 / aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
455 Capitol Mall, Suite 300
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project*. Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

P3a. Description (continued)

The eastern façade includes three aluminum frame windows, one fixed and two sliders, and a single door with two vents. A bench is located under the windows.

The southern façade includes a breezeway created by the wooden trellis and wide eave supported by a fence. A single door with two vents is also present.

The northern façade appears to have three vents, but no window or door openings.

Photo 1. Primary (eastern) façade. Facing west. Photo taken 11/22/2021.

Photo 2. Primary (eastern) façade, overhanging wooden trellis. Facing south. Photo taken 11/22/2021.

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PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 1 ***Resource Name or #:** (Assigned by recorder) Landscape Department / Map ID #32
P1. Other Identifier:
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** San Rafael **Date** **T** 01N ; **R** 06W ; ☐ **of** ☐ **of Sec** 34 ; **B.M.**
c. Address Shuck Drive City Mill Valley Zip 94941
d. UTM: Zone 10S , 543073.19 mE/ 4193760.46 mN
e. Other Locational Data:

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Landscape Department building is located in the northwestern portion of the GGBST campus, west of Judson Lane. The building consists of a single story, rectangular shaped building with a side gabled roof and corrugated metal exterior. Three large, roll-up garage doors, as well as two single personnel doors, are located on the primary façade (facing west).

***P3b. Resource Attributes:** HP4. Ancillary Building
***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)

P5b. Description of Photo: (view, date, accession #) Primary façade, facing north, 11/22/2021

***P6. Date Constructed/Age and Source:** c1974 / aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
455 Capitol Mall, Suite 300
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021
***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project.* Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

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PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 2 ***Resource Name or #:** (Assigned by recorder) Utility Building / Map ID #10
P1. Other Identifier:

*P2. **Location:** ☐ **Not for Publication** ☒ **Unrestricted**

***a. County** Marin **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** San Rafael **Date** ____ **T** 01N ; **R** 06W ; ___ ☐ **of** ___ ☐ **of Sec** 34 ; ____ **B.M.**

c. Address Harrington Drive City Mill Valley Zip 94941

d. UTM: Zone 10S, 543605.03 mE/ 4193564.95 mN

e. Other Locational Data:

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The utility building is located along the eastern portion of the GGBST campus, off of Herring Drive near Strawberry Drive. The utility building is a rectangular shaped single-story building that is built into the surrounding hillside. The building includes a flat roof with a gradual slope towards the northern façade. The exterior consists of cinderblock and metal louvered vents along the northern and eastern facades. A single, wooden personnel door is located along the northern façade, adjacent to the louvered vents.

***P3b. Resource Attributes:** HP4. Ancillary Building

***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other , etc.)

P5b. Description of Photo: (view, date, accession #) Primary (southeastern) façade, facing north, 11/22/2021

***P6. Date Constructed/Age and Source:** c1958-62/aerial imagery (Marin History Museum, Historicaerials.com)
☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
North Coast Land Holdings, LLC
2350 Kerner Blvd, Suite 360
San Rafael, CA 94901

***P8. Recorded by:** Alta Cunningham & Kirsten Burrowes
Ascent Environmental
455 Capitol Mall, Suite 300
Sacramento, CA 95814

***P9. Date Recorded:** Nov. 22, 2021

***P10. Survey Type:** Intensive

***P11. Report Citation:** Ascent. 2023. *Historical Resource Evaluation Report for the North Coast Land Holdings Project.* Prepared for the County of Marin.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

Photo 1. Primary (southwestern) façade. Facing north. Photo taken 11/22/2021.

Appendix F

Bio Resources Tech Study

Biological Resources Technical Memorandum

North Coast Land Holdings Project

Prepared For:

Tammy Taylor, Senior Planner,
County of Marin,
Community Development Agency

Prepared By:

Ascent Environmental
1111 Broadway, Suite 600
Oakland, CA 94607

Contact:
Tanya Jones, Project Manager
Ted Thayer, Wildlife Biologist

June 2022

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2.2 Sensitive natural communities 5

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LIST OF ABBREVIATIONS

CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
project	North Coast Land Holdings Project

1 INTRODUCTION

The proposed North Coast Land Holdings Project (project) would redevelop the former Golden Gate Baptist Theological Seminary property on the Strawberry Peninsula in unincorporated Marin County (Figure 1). The proposed development would include improvements to an existing academic campus, relocation of an existing daycare center, construction of a new fitness center, construction of a new residential care facility, upgrades to existing housing and construction of new housing, retention and improvements to existing open space and recreation areas, and creation of new bicycle and pedestrian paths throughout the property.

This report summarizes the methods and results of a reconnaissance survey, database queries, and a review of the 2010 Biological Resources Assessment prepared by WRA Environmental Consultants (WRA 2010). The 2010 Biological Resources Assessment covered a portion of the project site (Seminary Knoll, Student Village, Seminary Point, Seminary Vista West, Chapel Hill, and Seminary Vista East) and is included in this memorandum because it provides additional information about land cover that was identified in a portion of the project site at that time. Information on the soils, landcover types, special-status species, sensitive habitats, and potential jurisdictional waters that occur or that have the potential to occur within the project site is presented in this report. This report also contains initial findings related to the potential for the project to impact these resources.

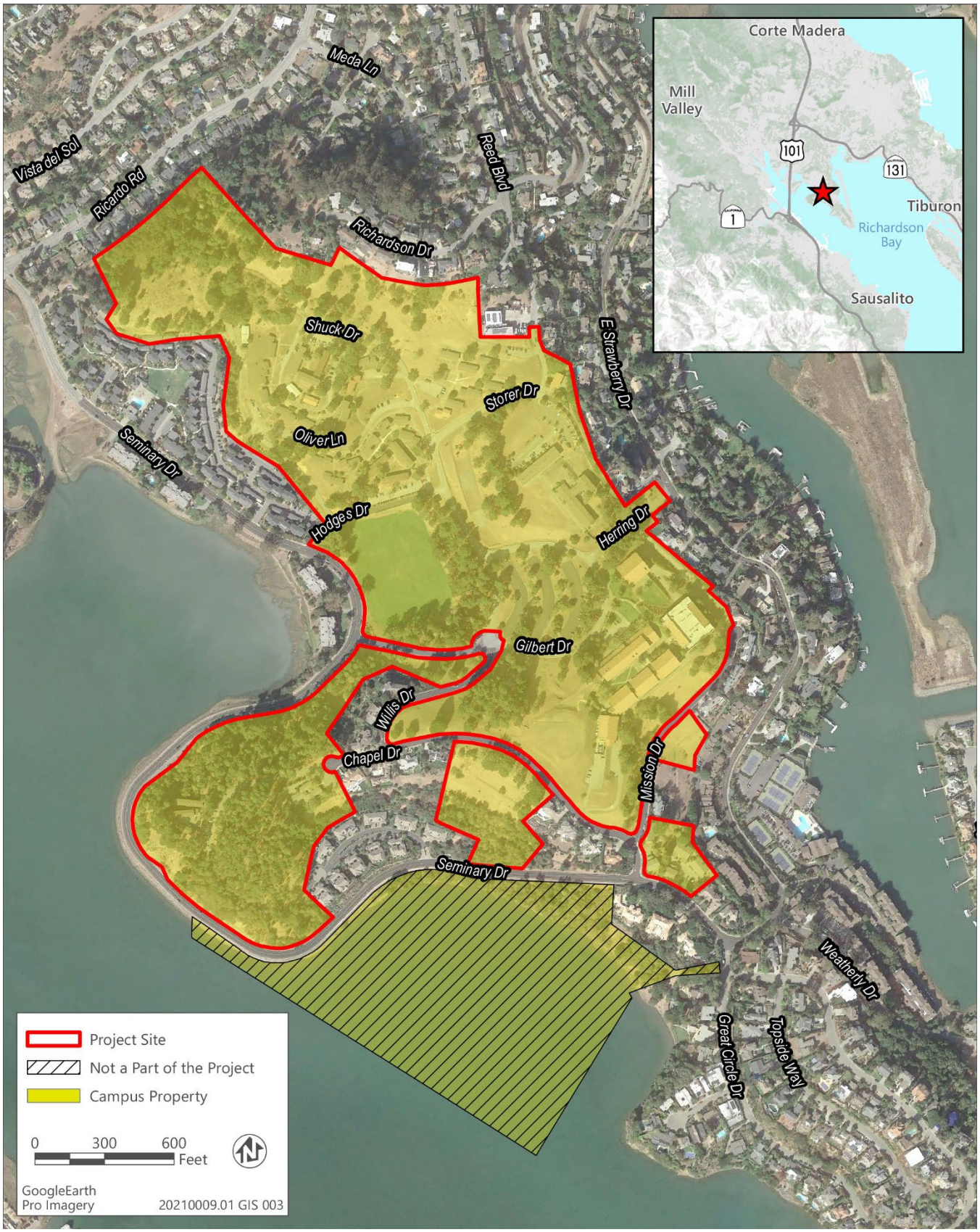
2 METHODS

The project site evaluated in this technical memorandum is shown below in Figure 1. To assess the existing conditions within the project site, a reconnaissance survey was conducted by an Ascent biologist on October 5, 2021. In addition, a search of the California Natural Diversity Data Base (CNDDB) and California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants within the Bolinas, San Geronimo, Novato, Petaluma Point, San Quentin, San Francisco North, Point Bonita, and San Rafael U.S. Geological Survey 7.5-minute quadrangles (9-quad search area, minus one quad due to the location of the project near the coast) was conducted to identify any recorded occurrences of special-status botanical or animal species in or near the project site. The Marin Fine Scale Vegetation Web Map (CNPS 2021a) was used to identify land cover in the project site, and a search of available reports and other planning documents applicable to the project site was conducted, including the 2010 Biological Resources Assessment, which covered a portion of the project site encompassing the Seminary Knoll, Student Village, Seminary Point, Seminary Vista West, Chapel Hill, and Seminary Vista East (WRA 2010).

2.1 SPECIAL-STATUS SPECIES

For the purpose of this report, special-status species are defined as species that are legally protected or that are otherwise considered sensitive by federal, state, or local resource agencies. Special-status species are species, subspecies, or varieties that fall into one or more of the following categories, regardless of their legal or protection status:

- officially listed by California or the federal government as endangered, threatened, or rare;
- a candidate for state or federal listing as endangered, threatened, or rare;
- taxa (i.e., taxonomic category or group) that meet the criteria for listing, even if not currently included on any list, as described in the definition of endangered, rare, or threatened species in the California Environmental Quality Act (CEQA) Guidelines, California Code of Regulations (CCR) Section 15380;
- species identified by California Department of Fish and Wildlife (CDFW) as species of special concern;
- species listed as fully protected under the California Fish and Game Code;
- species afforded protection under local planning documents; and



Sources: Adapted by Ascent in 2021.

Figure 1 Project Site

- plant taxa considered by the CDFW to be "rare, threatened, or endangered in California" and assigned a California Rare Plant Rank (CRPR). The CDFW system includes five rarity and endangerment ranks for categorizing plant species of concern, the three that are considered special-status for the purpose of this report area summarized as follows:
  - CRPR 1A - Plants presumed to be extinct in California;
  - CRPR 1B - Plants that are rare, threatened, or endangered in California and elsewhere; and
  - CRPR 2 - Plants that are rare, threatened, or endangered in California but more common elsewhere.

The term "California species of special concern" is applied by CDFW to animals not listed under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA), but that are considered to be declining at a rate that could result in listing, or that historically occurred in low numbers and known threats to their persistence currently exist. CDFW's fully protected status was California's first attempt to identify and protect animals that were rare or facing extinction. Most species listed as fully protected were eventually listed as threatened or endangered under CESA; however, some species remain listed as fully protected but do not have simultaneous listing under CESA. Fully protected species may not be taken or possessed at any time and no take permits can be issued for these species except for scientific research purposes or for relocation to protect livestock.

2.2 SENSITIVE NATURAL COMMUNITIES

CDFW maintains a list of plant communities that are native to California (CDFW 2021). Sensitive natural communities are ranked by CDFW from S1 to S3, where S1 is critically imperiled, S2 is imperiled, and S3 is vulnerable. CDFW's natural-community rarity rankings follow the 2009 NatureServe Conservation Status Assessments, in which all alliances are listed with a global (G) and state (S) rank, where G1 is critically imperiled, G2 is imperiled, G3 is vulnerable, G4 is apparently secure, and G5 is secure. These communities may or may not contain special-status species or their habitat. Impacts to sensitive natural communities should be analyzed under CEQA.

3 RESULTS

3.1 SOILS

The soils underlying the project site were determined using a previously prepared soils map of the area (WRA 2010), overlayed with the current project site boundary and verified using the current soils map for the entire project site (USDA 2021). There are three types of soils present in the project site and described below.

3.1.1 Los Osos-Urban Land-Bonnydoon Complex, 15-30 percent slopes

The Los Osos-Urban Land-Bonnydoon Complex, 15-30 percent slopes, soil type consists of approximately 40 percent Los Osos and similar soils, 35 percent urban land, 15 percent Bonnydoon and similar soils, and 10 percent other minor components (WRA 2010). The Los Osos soil type is well drained and is formed from weathered sandstone or shale. The Bonnydoon soil type is a somewhat excessively drained soil that is also formed from weathered sandstone or shale. Urban land is not a native soil, but is made up of asphalt, concrete, and other materials.

3.1.2 Los Osos-Urban Land-Bonnydoon Complex, 30 -50 percent slopes

The Los Osos-Urban Land-Bonnydoon Complex, 30-50 percent slopes, soil type consists of approximately 40 percent Los Osos and similar soils, 30 percent urban land, 20 percent Bonnydoon and similar soils, and 8 percent other minor components (WRA 2010). The description of the components of this complex are the same as given in Section 3.1.1.

3.1.3 Xerorthents, Fill

A small portion of the project site in the vicinity of the existing sports field is made up of xerothents fill (WRA 2010). This fill may be composed of various soil types that have been rearranged and modified from their original characteristics.

3.2 LAND COVER

The land cover types present in the project site were determined using the Marin County Fine Scale Vegetation Map, a Biological Resources Assessment covering a portion of the project site (WRA 2010), the Manual of California Vegetation Online (CNPS 2022a), and a reconnaissance-level survey on October 5, 2021. The Marin County Fine Scale Vegetation Map represents the state of the landscape in 2018 and adheres to the National Vegetation Classification (CNPS 2021a). The map classes in the fine scale vegetation map generally correspond to the alliance level of the National Vegetation Classification and the Manual of California Vegetation, and the map was created using computer-based models, aerial photo interpretation, and field verification. Although the Marin County Fine Scale Vegetation Map is highly accurate and survey plots were performed for this effort in many areas, there were no survey plots allocated to the project site for this mapping effort (CNPS 2021a), and its accuracy within the project site may not be as high as in other portions of the county. A biological resources assessment, which included field surveys, was conducted in 2010 by WRA Environmental Consultants for a portion of the current project site (i.e., the Seminary Knoll, Student Village, Seminary Point, Seminary Vista West, Chapel Hill, and Seminary Vista East portions of the project site) and classified vegetation to the alliance level where possible using the Manual of California Vegetation 2nd Edition (WRA 2010). Although the 2010 assessment is older than the Marin County Fine Scale Vegetation Map, it provides additional information about land cover that was identified in a portion of the project site at that time. Results from both sources of land cover data are disclosed in this report.

This section describes the land cover types within the project site, including land cover types defined as California sensitive natural communities (CDFW 2021), from both the Marin County Fine Scale Vegetation Map and the WRA report (2010). Figure 2 shows the vegetation types project site from the Marin County Fine Scale Vegetation Map only. Four additional vegetation types (i.e., California sagebrush scrub, French broom scrub, acacia woodland, and needle grass – melic grass grassland) were described in the WRA report as occurring in the project site, but they have not been mapped by the Marin County Fine Scale Vegetation Map. The acreages of the land cover types identified by both the Marin Fine Scale Vegetation Map and WRA report are shown in Table 1.

Table 1 Land Cover Types within the Project site

Land Cover Type	Acreage
Coast Live Oak Woodland[1]	26.71
Acacia Woodland[2]	n/a
Eucalyptus Woodland[1]	2.97
Douglas Fir/Tan Oak/Madrone Forest[1]	2.20
Monterey Pine Forest[1]	9.69
Redwood Forest[1]	0.51
California Annual and Perennial Grassland[1]	20.62

Land Cover Type	Acreage
Coyote Brush Scrub[1]	0.77
California Sagebrush Scrub[2]	n/a
French Broom Scrub[2]	n/a
Needle Grass – Melic Grass Grassland[2]	≥ 1.7*
Developed[1]	33.75
Total	**97.22**

Notes: [1]Mapped by Marin Fine Scale Vegetation Map adjusted by Ascent based on field survey; [2]Type listed in WRA report

* Acreage listed in WRA (2010) for a portion of the project site, and overlaps with other land cover types and not counted toward total acreage.

n/a = Land cover type was reported by WRA (2010) as occurring in a portion of the project site (no acreage provided). Type was not identified as occurring in the project site by the Marin County Fine Scale Map.

Source: Data downloaded from Golden Gate National Parks Conservancy in 2022 and WRA 2010; Adapted by Ascent Environmental in 2022.

3.2.1 Coast Live Oak Woodland

Coast live oak (*Quercus agrifolia*) (*Quercus agrifolia* alliance [CNPS 2022b]) is identified on the Marin Fine Scale Vegetation Map and the 2010 Biological Resources Assessment of the project site. The alliance is defined by native coast live oak making up greater than 50 percent of the canopy cover of the stand. Coast live oak woodland occurs in canyon bottoms, slopes, and flat areas where sandy or loamy soils are deep with high organic matter content. Within the project site, coast live oak woodland contains a mix of native species oaks, California bay (*Umbellularia californica*), poison oak (*Toxicodendron diversilobum*), California blackberry (*Rubus ursinus*), and creeping snowberry (*Symphoricarpos mollis*), with an understory of grasses and forbs (WRA 2010).

3.2.2 Acacia Woodland

Acacia woodland land cover type, consisting of nonnative trees, was described in the WRA report. Although this land cover type was not mapped, it was identified as occurring in the Seminary Point area and between Chapel Drive and Seminary Drive (WRA 2010) within Coast Live Oak Woodland. While this land cover type is not included in the Manual of California Vegetation, its documentation in the previous Biological Resources Assessment (WRA 2010) and its potential to be the focus of removal, warrants its discussion here.

3.2.3 Eucalyptus Woodland

Eucalyptus woodland, a nonnative plant community, is identified on the Marin Fine Scale Vegetation Map and described in the WRA report as occurring along the northern portion of the project site (WRA 2010). An additional area that was identified as "forest fragment" in the Marin Fine Scale Vegetation Map was determined to be Eucalyptus woodland by an Ascent biologist. This land cover type is made up of Tasmanian blue gum (*Eucalyptus globulus*) and red iron bark (*E. sideroxylon*). The understory of this eucalyptus woodland within the project site is dominated by French broom (*Genista monspessulana*) with few grasses and forbs (WRA 2010).

3.2.4 Douglas Fir/Tan Oak/Madrone Forest

This land cover type is shown on the Marin Fine Scale Vegetation Map at the extreme north end of the project site (Figure 2). This land cover type is not currently described in the Manual of California Vegetation (CNPS 2022a); however, its inclusion in the Manual of California Vegetation is pending and, therefore, it is included in this report. Within the project site, it is dominated by native Douglas fir (Pseudotsuga menziesii) with co-dominant and understory of native species (tanoak [*Notholithocarpus densiflorus*] and madrone [*Arbutus menziesii*]. The understory of this land cover type contains also various native shrub species.

Sources: Adapted by Ascent in 2021.

Figure 2 Land Cover

3.2.5 Monterey Pine Forest

Monterey pine forest is shown on the Marin Fine Scale Vegetation Map and was described in the WRA report (WRA 2010). A stand that was identified as Douglas Fir/Tan Oak/Madrone Forest on the Marin Fine Scale Vegetation Map within the center of the project site was determined to be Monterey pine forest during the reconnaissance survey on October 15, 2021 (Figure 2). Most of the Monterey pine forest within the project site consists of relatively open stands of Monterey pine (*Pinus radiata*) with an understory of grasses and forbs. Monterey pine stands that boarder coast live oak stands within the project site contains an understory of small coast live oaks, California bay, and poison oak. The Monterey pines on the site, while native to California, were planted in previously open grasslands as early as the 1950s (WRA 2010) and are not native to the project site. Monterey pine forest in the project site is not one of the three native stands of Monterey pine in California (Stephens et al. 2004), and therefore not a sensitive natural community (CDFW 2021).

3.2.6 Redwood Forest

At the corner of Seminary Drive and Hodges Drive there is a small stand of native coast redwood (*Sequoia sempervirens*) (Figure 2). This stand is classified on the Marin Fine Scale Vegetation Map as Evergreen Hardwood, but was determined to be dominated by redwood by following the reconnaissance survey. These trees were likely planted in this location at the edge of the athletic field. This small stand meets the definition of redwood forest due to the percentage of redwood in the canopy (CNPS 2022c); however, the understory of the stand is highly disturbed and does not function as habitat for species that would normally be found in redwood forest. Due to the likelihood that this stand was planted in this location and the lack of understory due to disturbance, this land cover type within the project area is not considered to be a sensitive natural community (CDFW 2021).

3.2.7 California Annual and Perennial Grassland

California annual and perennial grassland is identified on the Marin Fine Scale Vegetation Map as occurring in more open parts of the project site (Figure 2), and described in the previous Biological Resources Assessment as Non-Native Annual Grassland (WRA 2010). This land cover type is dominated by nonnative grasses and forbs including bromes (*Bromus* spp.), oats (*Avena* spp.), barleys (*Hordeum* spp.), and geraniums (*Geranium* spp.). Native forbs may also be present including California poppy (*Eschscholzia californica*), blue dicks (*Dichelostemma capitatus*), and lupines (*Lupinus* spp.). Few trees and shrubs are present within this land cover type (WRA 2010).

3.2.8 Coyote Brush Scrub

A portion of the project site identified as "shrub fragment" on the Marin Fine Scale Vegetation Map in the Seminary Knoll area was determined to be coyote brush scrub during the reconnaissance survey (Figure 2). Native coyote brush (*Baccharis pilularis*) forms the dominant species within this habitat type, although the species may be present as an understory species in adjacent oak woodland as well. Within the coyote brush scrub habitat, the understory is made up of native and nonnative grasses, including purple needlegrass (*Stipa pulchra*) (WRA 2010).

3.2.9 California Sagebrush Scrub

Native California sagebrush (*Artemisia californica*) is the dominant species in this landcover type, making up at least 60 percent of the relative cover within the land cover type. The understory of this landcover type is made up of native and nonnative grasses, including purple needlegrass and melic grasses (*Melica* spp.) (WRA 2010). California sagebrush scrub is not present on the Marin Fine Scale Vegetation Map or shown in Figure 2. However, this land cover type was identified as occurring in the project site by the previous Biological Resources Assessment; although this land cover type was not mapped and its location is unknown (WRA 2010).

3.2.10 French Broom Scrub

French broom scrub is dominated by the nonnative invasive broom species *Genista monspessulana*. The areas of this land cover type are typically devoid of understory and may contain some overstory trees that are not dominant (WRA 2010). French broom scrub is not present on the Marin Fine Scale Vegetation Map or shown in Figure 2. However, this land cover type was identified in the previous Biological Resources Assessment ; although this land cover type was not mapped and its location is unknown (WRA 2010).

3.2.11 Needle Grass – Melic Grass Grassland

The needle grass – melic grass grassland vegetation alliance was formally known as purple needlegrass grassland. This vegetation type was documented in the WRA report (WRA 2010) to occur within the Seminary Point, Seminary Vista West, Student Village, and Seminary Knoll portions of the project site, and is dominated by native and nonnative grasses and forbs (WRA 2010). If the relative cover of purple needle grass, *Nassella* spp., or *Melica* spp. meets the definition of the alliance in the Manual of California Vegetation, this land cover is defined as a sensitive natural community by CDFW (CDFW 2021). Needle grass – melic grass grassland is not present on the Marin Fine Scale Vegetation Map or shown in Figure 2; however, this land cover type was identified in the WRA report (as occurring within the project area (WRA 2010).

3.2.12 Developed

The Marin Fine Scale Vegetation Map identified a large portion of the project site as being made up of existing development (Figure 2). While planted trees, shrubs and nonnative grasses may be present as landscaping, sports fields, and street trees, this part of the project site is dominated by the built environment.

3.3 SPECIAL STATUS SPECIES

This section describes the results of the search of the CNDDB and CNPS databases, the reconnaissance visit to the site, and a search of available reports and other planning documents applicable to the project site.

3.3.1 Special-Status Botanical Species

The search of the CNPS (CNPS 2021b) and CNDDB (CNDDB 2021) databases identified 74 special-status botanical species that occur within the 9-quad search area (Appendix A, Table A-1). Of these 74 special-status plants, 30 are likely to occur within the project site based on their ranges and the presence of suitable land cover types (Section 3.2) and soils (Section 3.1). These species are shown along with their normal blooming period in Table 2. Project construction and vegetation removal could result in loss of individual special-status plants and habitats. These impacts may be significant under CEQA.

Table 2 Special-Status Botanical Species with the Potential to Occur in the Project site

Species	Source	Potential Blooming Period[1]										
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Napa false indigo *Amorpha californica* var. *napensis*	CNDDB/CNPS											
Bent-flowered fiddleneck *Amsinckia lunaris*	CNDDB/CNPS											
Marin manzanita *Arctostaphylos virgata*	CNDDB/CNPS											
San Francisco Bay spineflower *Chorizanthe cuspidata* var. *cuspidata*	CNDDB/CNPS								(?)			
Franciscan thistle *Cirsium andrewsii*	CNDDB/CNPS											
San Francisco collinsia *Collinsia multicolor*	CNDDB/CNPS		(?)									
Western leatherwood *Dirca occidentalis*	CNDDB/CNPS				(?)							
Koch's cord moss *Entosthodon kochii*	CNDDB/CNPS	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Minute pocket moss *Fissidens pauperculus*	CNDDB/CNPS	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Marin checker lily *Fritillaria lanceolata* var. *tristulis*	CNDDB/CNPS											
Fragrant fritillary *Fritillaria liliacea*	CNDDB/CNPS											
Diablo helianthella *Helianthella castanea*	CNDDB/CNPS											
Congested-headed hayfield tarplant *Hemizonia congesta* ssp. *congesta*	CNDDB/CNPS											
Santa Cruz tarplant *Holocarpha macradenia*	CNDDB/CNPS											
Point Reyes horkelia *Horkelia marinensis*	CNDDB/CNPS											
Thin-lobed horkelia *Horkelia tenuiloba*	CNDDB/CNPS								(?)			
Small groundcone *Kopsiopsis hookeri*	CNDDB/CNPS											
Marsh microseris *Microseris paludosa*	CNDDB/CNPS							(?)				
Marin County navarretia *Navarretia rosulata*	CNDDB/CNPS											
Choris' popcornflower *Plagiobothrys chorisianus* var. *chorisianus*	CNDDB/CNPS											
San Francisco popcornflower *Plagiobothrys diffusus*	CNDDB/CNPS											

Species	Source	Potential Blooming Period[1]										
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
North Coast semaphore grass *Pleuropogon hooverianus*	CNDDB/CNPS											
Oregon polemonium *Polemonium carneum*	CNDDB/CNPS											
Adobe sanicle *Sanicula maritima*	CNDDB/CNPS											
Scouler's catchfly *Silene scouleri* ssp. *scouleri*	CNDDB/CNPS									(?)		
San Francisco campion *Silene verecunda* ssp. *verecunda*	CNDDB/CNPS		(?)					(?)	(?)			
Santa Cruz microseris *Stebbinsoseris decipiens*	CNDDB/CNPS											
Two-fork clover *Trifolium amoenum*	CNDDB/CNPS											
San Francisco owl's-clover *Triphysaria floribunda*	CNDDB/CNPS											
Coastal triquetrella *Triquetrella californica*	CNDDB/CNPS	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: CNPS = California Native Plant Society Inventory of Rare and Endangered Plants; CNDDB= California Natural Diversity Data Base; CRPR = California Rare Plant Rank

(?) denotes a period when blooming may occur but is not typical. N/A denotes species that do not have a flowers or a blooming period.

[1] The potential blooming period is blooming period published by CNPS based on recorded blooming for each species across its range and throughout time. Actual blooming periods of each species vary by year and across their ranges. The only way to know when a particular plant species is blooming in a given area is by visual confirmation of blooming in reference populations

3.3.2 Special-Status Animal Species

Although the CNDDB record search identified 41 special-status animal species documented within the 9-quad search area (Appendix A, Table A-2), eight special-status animal species were noted as known to occur or could occur within or directly adjacent to the project site. The potential for species to occur was based on species range, the presence of land cover types potentially suitable for the species (Section 3.2), and other habitat variables. These eight species, along with their listing status, preferred habitat, and potential for occurrence in the project site are summarized in below. All 41 species identified in the search are described Table A-2 in Appendix A.

MONARCH BUTTERFLY

The western population of monarch butterfly (*Danaus plexippus*) overwinters within wind protected eucalyptus, Monterey pine, and cypress groves along the coast. These overwintering roosts are typically located within 1.5 miles from the ocean or bays. Stands of mature trees within the project site are likely to be suitable for use as overwintering roosts (WRA 2010). In addition, individual monarch butterflies, larvae, and host plants have been recorded within the vicinity of the project site (Western Monarch and Milkweed Mapper 2022).

Adult monarch butterflies require a diversity of nectar resources for feeding during migration and breeding and milkweed host plants (*Asclepias* spp.) to complete their lifecycle (USFWS 2020a). During the spring and summer, adult females lay eggs on milkweed host plants, which are the only food source for larvae. Monarch butterflies may forage in various habitats within the project site, and milkweed host plants may occur in the grasslands and oak woodlands on site. Due to documented decreases in overwintering populations, the USFWS determined that the listing of monarch as threatened or endangered was warranted, but precluded by higher priority actions (USFWS 2020b).

Vegetation removal for construction and as part of the forest management plan could result in the loss of overwintering roosts and milkweed host plants. The potential significance of environmental impacts related to this issue will be addressed in the EIR.

SPECIAL-STATUS FISHES

The project site (Figure 1) does not contain habitat for special-status fishes; however, Richardson Bay, which is a part of the San Francisco Bay estuary, is adjacent to the project site. The waters of Richardson Bay are suitable habitat for Coho Salmon – Central California Coast Evolutionary Significant Unit (*Oncorhynchus kisutch*), which is listed under the ESA and CESA as endangered; and Steelhead – Central California Coast Distinct Population Segment (*Oncorhynchus mykiss irideus*) (Marin Watershed Program 2022), and Green sturgeon – southern DPS (*Acipenser medirostris*) which are listed under the ESA as threatened. Longfin Smelt (*Spirinchus thaleichthys*), which is a CDFW Species of Special Concern, may also be present in Richardson Bay. While the project would not involve fill, construction, or other direct impacts to tidal and submerged areas, Richardson Bay is located adjacent to the project site, and indirect impacts to special-status fishes may occur, such as a result of runoff from project activities. The potential significance of environmental impacts related to this issue will be addressed in the EIR.

WHITE-TAILED KITE AND OTHER NESTING BIRDS

American peregrine falcon (*Falco peregrinus anatum*) and bald eagle (*Haliaeetus leucocephalus*) have been reported to occur in the project site; however, these species are not likely to nest within the project site. The project site lacks the tall buildings or cliffs that would be suitable nesting habitat for American peregrine falcon, and the existing disturbance within the site makes nesting by bald eagles unlikely. White-tailed kite (*Elanus leucurus*) is a CDFW fully protected species that may occur within the project site year-round, and is less sensitive to disturbance than bald eagle. White-tailed kites forage within grasslands, emergent wetlands, and meadows, preying on small mammals, birds, insects, reptiles, and amphibians. Individuals nest in oaks, willows, or other tree stands with dense canopies for cover near foraging habitat (CWHR 2005). The grasslands within the project site and the nearby wetlands provide foraging habitat for white-tailed kite, and oaks and other trees within the project site may provide suitable nesting habitat for the species. White-tailed kites nest from February to October. In addition to white-tailed kite, common raptors and other common bird species are also likely to nest within the project site. Nests of common raptors and other nesting birds are protected under Section 3503 and Section 3503.5 of the California Fish and Game Code. Vegetation removal and construction activities could result in the disturbance and loss of nests of white-tailed kite and other nesting birds. The potential significance of environmental impacts related to this issue will be addressed in the EIR.

SPECIAL-STATUS BATS

Pallid bat (*Antrozous pallidus*) is a CDFW Species of Special Concern. This bat species is found in chaparral, coastal scrub, woodland, and grassland habitat. Pallid bats roost alone, in small groups, or in large groups, within crevices, caves, abandoned buildings, and the trunk cavities of large oaks and other tree species. Maternity roosts contain pups from late April through August and disperse in August through October (WBWG 2005a). Pallid bats may roost in buildings and large trees within the project site. Construction of the project and vegetation removal could result in loss of individual bats and roosts

Townsend's big eared bat (*Corynorhinus townsendii*) is a CDFW Species of Special Concern. This bat species is found throughout California in a variety of habitats. Townsend's big eared bat roosts primarily in caves and abandoned mines; however, the species has also been reported to use buildings, bridges, rock crevices and hollows in trees. Maternity colonies form between March and June and pups are born in June (WBWG 2005b). Townsend's big-eared bats could use buildings within the project site as roost sites. Therefore, construction of the project could result in loss of individual bats and roosts.

Western red bats (*Lasiurus blossevilli*) roost individually in dense clumps of foliage in riparian trees, orchards, and ornamental trees. Western red bats give birth to pups in June and the pups typically fly by August (Shump and

Shump 1982). Mature broad-leaved trees in the project site may provide suitable roosting locations for this species. Vegetation removal could result in loss of individual bats and suitable roost trees.

The potential significance of environmental impacts related to these issues will be addressed in the EIR.

3.3.3 Sensitive Natural Communities and Sensitive Habitat Types

The Seminary Point, Seminary Vista West, Student Village, and Seminary Knoll portions of the project site were identified in the WRA report as containing needle grass – melic grass grassland vegetation alliance (WRA 2010); however, the 2010 WRA report did not survey the entirety of the current project site, and this land cover type is not present on the more recent Marin County Fine Scale Vegetation Map. Therefore, the extent of this vegetation alliance within the whole project area is not known. Needle grass – melic grass grassland is designated by CDFW as a sensitive natural community. Coast live oak woodland is not considered a sensitive natural community by CDFW; however, oak woodlands are protected from conversion by the Oak Woodlands Conservation Act (Public Resources Code Section 21083.4) and are considered a sensitive habitat type in California. The potential significance of environmental impacts related to sensitive natural communities will be addressed in the EIR.

3.3.4 Potentially Jurisdictional Wetlands and Waters

A regulatory wetland delineation has not been performed within the project site, and the 2010 Biological Resources Assessment did not indicate the presence of any potentially jurisdictional wetlands or other waters in the portion of the project site that was covered in that report (WRA 2010). However, the 2010 report did not cover the entirety of the project site. Moreover, because a formal wetland delineation has not been performed, it cannot be ruled out that other potentially jurisdictional wetlands occur in the project site. A search of the National Wetlands Inventory showed that the project site contains two intermittent streams that flow under Seminary Drive and discharge into Richardson Bay near Brickyard Beach (USFWS 2022). However, no project related disturbance is anticipated to occur within the portion of the project site where these intermittent drainages are located, and therefore, no alteration of these waters is expected.

4 REFERENCES

California Department of Fish and Wildlife.2021. Webpage on Natural Communities. List of Sensitive Natural Communities. Available: https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities#sensitive%20natural%20communities. Accessed April 2022.

California Native Plant Society. 2021a. *Vegetation Classification of Alliances and Associations in Marin County, California.* Prepared for: Tamalpais Lands Collaborative (One Tam). Prepared by: Jennifer Buck-Diaz, Kendra Sikes, and Julie M. Evens. California Native Plant Society, Vegetation Program. Sacramento, CA.

———. 2021b. Inventory of Rare and Endangered Plants (online edition, v8-02). Results of electronic records search. California Native Plant Society, Sacramento, CA. Available: http://www.rareplants.cnps.org. Accessed July 2021.

———. 2022a. A Manual of California Vegetation, Online Edition. California Native Plant Society, Sacramento, CA. Available: http://www.cnps.org/cnps/vegetation/ Accessed April 2022.

———. 2022b. A Manual of California Vegetation, Online Edition. *Quercus agrifolia* Forest and Woodland Alliance. California Native Plant Society, Sacramento, CA. Available: http://www.cnps.org/cnps/vegetation/ Accessed April 2022.

———. 2022c. A Manual of California Vegetation, Online Edition. *Sequoia sempervirens* Forest & Woodland Alliance. California Native Plant Society, Sacramento, CA. Available: http://www.cnps.org/cnps/vegetation/ Accessed April 2022.

California Natural Diversity Database. 2021. Results of electronic records search. California Department of Fish and Wildlife, Biogeographic Data Branch. Sacramento, CA. Accessed July 2021.

CDFW. *See*. California Department of Fish and Wildlife.

CNDDB. *See* California Natural Diversity Database.

CNPS. *See* California Native Plant Society.

CWHR. *See* California Wildlife Habitat Relationship System.

California Wildlife Habitat Relationship System. 2005. *Life history account for white-tailed kite (Elanus leucurus)*. California Department of Fish and Wildlife, California Interagency Wildlife Task Group. Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=1659&inline=1. Accessed April 2022.

Marin Watershed Program. 2022. *Richardson Bay Watershed, History and Habitat*. Marin Watershed Program. Available: https://www.marinwatersheds.org/richardson-bay-watershed-history-and-habitat. Accessed March 2022.

Shump, K. A. and A. U. Shump. 1982. *Lasuirus borealis*. *Mammalian Species* No. 183, pp. 1-6. The American Society of Mammologists.

Stephens, Scott L., D. Pirrto, and D. Carmagno. 2004. *Fire Regimes and Resultant Forest Structure in Native Ano Nuevo Monterey Pine (*Pinus radiata*) Forest, California*.

USDA. *See* U.S. Department of Agriculture.

U.S. Department of Agriculture. 2021. Natural Resources Conservation Service Web soil service. Soil Map – Marin County California. Available: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed: September 2021.

U.S. Fish and Wildlife Service. 2020a (September). *Monarch* (*Danaus plexippus*) Species Status Assessment Report, version 2.1.

———. 2020b. *U.S. Fish and Wildlife Service Finds Endangered Species Act Listing for Monarch Butterfly Warranted but Precluded*. News Release- U.S. Fish and Wildlife Service. December 15, 2020. Available: https://www.fws.gov/news/ShowNews.cfm?ref=u.s.-fish-and-wildlife-service-finds-endangered-species-act-listing-for-&_ID=36817#:~:text=December%2015%2C%202020&text=After%20a%20thorough%20assessment%20of,on%20higher%2Dpriority%20listing%20actions. Accessed February 2, 2021.

———. 2022. National Wetlands Inventory Mapper. Available: https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper. Accessed: March 2022.

USFWS. *See* U.S. Fish and Wildlife Service

Western Bat Working Group. 2005a. Species Account: *Antrozous pallidus* Pallid Bat. Prepared by Rick Sherwin. Updated at the 2005 Portland Biennial Meeting by Daniela A. Rambaldini. Available: http://wbwg.org/western-bat-species/ Accessed: October 2011.

———. 2005b. Species Account: *Corynorhinus townsedii* Townsend's Big-Eared Bat. Updated at the 2005 Portland Biennial Meeting by Anoinette Piaggio. Available: http://wbwg.org/western-bat-species/. Accessed: October 2011.

Western Monarch and Milkweed Mapper. 2022. Occurrence Database. Data accessed from the Western Monarch Milkweed Mapper, a project by the Xerces Society, U.S. Fish and Wildlife Service, Idaho Department of Fish and Game, and Washington Department of Fish and Wildlife. Available: www.monarchmilkweedmapper.org. Accessed: March 2022.

WRA. *See* WRA Environmental Consultants.

WRA Environmental Consultants. 2010. *Biological Resources Assessment, Golden Gate Baptist Theological Seminary, Marin County, California*. Prepared for: Hart Marin. Prepared by: WRA Environmental Consultants. San Rafael, CA.

Appendix A

Special-Status Species Tables

Methods

The species tables in this appendix were developed through a review of relevant databases, and other available information. Vegetation types and habitat were identified through two reconnaissance surveys of the project site conducted on October 5, 2021 and September 1, 2022, the Marin County Fine Scale Vegetation Web Map, (CNPS 2021), and a previous biological resources assessment of a portion of the project site (WRA 2010). The National Wetlands Inventory (USFWS 2022) was reviewed for the potential occurrence of aquatic features. The California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2022) and CDFW's California Natural Diversity Database (CNDDB) (CNDDB 2022) were reviewed for specific information on documented observations of special-status species previously recorded in the project site and vicinity. A search of the CNDDB and CNPS was conducted for the following U.S. Geological Survey 7.5' quadrangles surrounding the project site: Bolinas, San Geronimo, Novato, Petaluma Point, San Quentin, San Francisco North, Point Bonita, and San Rafael.

Table A-1 Special-Status Botanical Species Known to Occur in the Project Region and Their Potential for Occurrence in the Project site

Species	Federal Status [1]	State Status [1]	CRPR Status [1]	Habitat and Blooming Period	Potential for Occurrence [2]
Franciscan onion *Allium peninsulare* var. *franciscanum*			1B.2	Cismontane woodland, valley and foothill grassland. Clay soils; often on serpentine; sometimes on volcanics. Dry hillsides. 16–1148 feet in elevation. Blooms as early as April in some locations. In most locations blooms May–June.	**Not expected to occur:** The project site does not include serpentine or volcanic based soils.
Sonoma alopecurus *Alopecurus aequalis* var. *sonomensis*	E		1B.1	Species found in wet areas within freshwater marshes, swamps, and riparian scrub with other wetland species. 15–1,180 feet in elevation. Blooms May–July.	**Not expected to occur:** The project site does not include any freshwater marshes, swamps, or riparian scrub. Within Marin County the species is known to occur only from the Point Reyes, Tomales Bay, and Stinson Beach areas (CNPS 2022).
Napa false indigo *Amorpha californica* var. *napensis*			1B.2	Species found in openings in forest or woodland or in chaparral. 100–2,410 feet in elevation. Blooms April–July.	**May to occur:** The project site contains forested habitat suitable for the species. The project site is within the current distribution of the species and portions of the project site are within the species' elevational range.
Bent-flowered fiddleneck *Amsinckia lunaris*			1B.2	Species found within cismontane woodland, valley and foothill grassland, and coastal bluff scrub. 10–2,610 feet in elevation. Blooms March–June.	**May to occur:** The project site contains forested habitat suitable for the species. The project site is within the elevational range of this species.
Franciscan manzanita *Arctostaphylos franciscana*	E		1B.1	Species found on serpentine outcrops in chaparral. 20–980 feet in elevation. Blooms February–April.	**Not expected to occur:** Serpentine outcrops are not found within the project site.
Mt. Tamalpais manzanita *Arctostaphylos montana* ssp. *montana*			1B.3	Species found on serpentine slopes in chaparral and grassland. 490–2,230 feet in elevation. Blooms February–April.	**Not expected to occur:** Serpentine soils are not found within the project site.
Presidio manzanita *Arctostaphylos montana* ssp. *ravenii*	E	E	1B.1	Species found on open, rocky serpentine slopes. 150–700 feet in elevation. Blooms February–March.	**Not expected to occur:** Serpentine soils are not found within the project site.

Species	Federal Status [1]	State Status [1]	CRPR Status [1]	Habitat and Blooming Period	Potential for Occurrence [2]
Marin manzanita *Arctostaphylos virgata*			1B.2	Species found within broadleafed upland forest, closed-cone coniferous forest, chaparral, and north coast coniferous forest on sandstone or granitic soils. 10–2,620 feet in elevation. Blooms January–March.	**May to occur:** The project site contains forested habitat suitable for the species. The project site is within the elevational range of this species.
Marsh sandwort *Arenaria paludicola*	E	E	1B.1	Species found growing through dense mats of *Typha, Juncus, Scirpus*, etc. in freshwater marsh and swamps. Sandy soil. 10–560 feet in elevation. Blooms May–August.	**Not expected to occur:** The project site does not include any freshwater marsh or swamp habitat.
Coastal marsh milk-vetch *Astragalus pycnostachyus* var. *pycnostachyus*			1B.2	Species found within mesic sites in dunes, coastal scrub, along streams or coastal salt marshes. 0–510 feet in elevation. Blooms April–October.	**Not expected to occur:** The project site does not include any mesic sites that would be suitable for this species. Within Marin County the species is known to occur only from the Point Reyes, Tomales Bay, and Stinson Beach areas (CNPS 2022).
Alkali milk-vetch *Astragalus tener* var. *tener*			1B.2	Species found on alkali flats, flooded lands in annual grassland, or in playas or vernal pools. 0–550 feet in elevation. Blooms March–June.	**Not expected to occur:** Alkaline soils are not found within the project site.
Thurber's reed grass *Calamagrostis crassiglumis*			2B.1	Species usually found in marshy swales surrounded by grassland or coastal scrub, or in marshes and swamps. 20–160 feet in elevation. Blooms May–August.	**Not expected to occur:** The project site does not include any marshy swales, marsh or swamp habitat that would be suitable for this species.
Tiburon mariposa-lily *Calochortus tiburonensis*	T	T	1B.1	Species found on open, rocky, slopes in serpentine grassland. 160–490 feet in elevation. Blooms March–June.	**Not expected to occur:** Serpentine soils are not found within the project site.
Coastal bluff morning-glory *Calystegia purpurata* ssp. *saxicola*			1B.2	Species found in coastal dunes, coastal scrub, coastal bluff scrub, and north coast coniferous forest. 30–340 feet in elevation. Blooms as early as March in some locations, normally blooms, April–September.	**Not expected to occur:** The project site does contain scrub habitat; however, within Marin County the species is known to occur only from the Point Reyes, and Bodega Bay areas (CNPS 2022).
Seaside bittercress *Cardamine angulata*			2B.1	Species found in wet areas and streambanks within north coast coniferous forest and lower montane coniferous forest. 300–510 feet in elevation. Blooms as early as January in some locations normally blooms, March–July.	**Not expected to occur:** Wet areas and streambanks within upland vegetation types are not found within the project site.
Bristly sedge *Carex comosa*			2B.1	Species found in marshes, swamps, and wet places such as lake margins within coastal prairie and grasslands. One site below sea level is on an island in the Delta. -15–5,320 feet in elevation. Blooms May–September.	**Not expected to occur:** The project site does not include any marsh, swamp, or lake margins within coastal prairie or grasslands that would be suitable for this species.
Lyngbye's sedge *Carex lyngbyei*			2B.2	Species found in brackish and freshwater marshes and swamps. 0–660 feet in elevation. Blooms April–August.	**Not expected to occur:** The project site does not include any marsh habitat that would be suitable for this species.
Northern meadow sedge *Carex praticola*			2B.2	Species found in moist to wet meadows and seeps. 50–10,500 feet in elevation. Blooms May–July.	**Not expected to occur:** Wet meadows and seeps are not found within the project site.

Species	Federal Status [1]	State Status [1]	CRPR Status [1]	Habitat and Blooming Period	Potential for Occurrence [2]
Tiburon paintbrush *Castilleja affinis* var. *neglecta*	E	T	1B.2	Species found on rocky serpentine sites within valley and foothill grassland. 390–1,310 feet in elevation. Blooms April–June.	**Not expected to occur:** Serpentine soils are not found within the project site.
Nicasio ceanothus *Ceanothus decornutus*			1B.2	Species found in chaparral and maritime chaparral on serpentinite, rocky, and sometimes clay soils. 770–950 feet in elevation. Blooms March–May.	**Not expected to occur:** Serpentine soils are not found within the project site.
Mason's ceanothus *Ceanothus masonii*		R	1B.2	Species found on serpentine ridges or slopes in chaparral or transition zone. 590–1,510 feet in elevation. Blooms March–April.	**Not expected to occur:** Serpentine soils are not found within the project site.
Point Reyes salty bird's-beak *Chloropyron maritimum* ssp. *palustre*			1B.2	Species usually found in coastal salt marsh with *Salicornia, Distichlis, Jaumea, Spartina*, etc. 0–380 feet in elevation. Blooms June–October.	**Not expected to occur:** The project site does not include any marsh habitat that would be suitable for this species.
San Francisco Bay spineflower *Chorizanthe cuspidata* var. *cuspidata*			1B.2	Species found on sandy soil on terraces and slopes within coastal bluff scrub, coastal dunes, coastal prairie, and coastal scrub. 10–710 feet in elevation. Normally blooms April–July and sometimes as late as August.	**May to occur:** The project site contains suitable coastal scrub and grassland habitat. The project site is within the elevational range of this species.
Franciscan thistle *Cirsium andrewsii*			1B.2	Species found in coastal bluff scrub, broadleaved upland forest, coastal scrub, and coastal prairie. Sometimes found in serpentine seeps. 0–490 feet in elevation. Blooms March–July.	**May to occur:** The project site contains forested habitat suitable for the species. The project site is within the elevational range of this species.
Mt. Tamalpais thistle *Cirsium hydrophilum* var. *vaseyi*			1B.2	Species found in serpentine seeps and streams within meadows, chaparral, upland forest, and woodland. 590–2,000 feet in elevation. Blooms May–August.	**Not expected to occur:** Serpentine soils are not found within the project site.
Presidio clarkia *Clarkia franciscana*	E	E	1B.1	Species found on serpentine outcrops in grassland or scrub. 70–1,000 feet in elevation. Blooms May–July.	**Not expected to occur:** Serpentine soils are not found within the project site.
Round-headed Chinese-houses *Collinsia corymbosa*			1B.2	Species found in coastal dunes. 30–100 feet in elevation. Blooms April–June.	**Not expected to occur:** There are no coastal dunes within the project site.
San Francisco collinsia *Collinsia multicolor*			1B.2	Species found within closed-cone coniferous forest and coastal scrub on decomposed shale (mudstone) mixed with humus, or sometimes on serpentine. 100–820 feet in elevation. Blooms as early as February in some conditions. Typical blooming in March–May.	**May to occur:** The project site contains forested habitat suitable for the species and is within the elevational range of this species.

Species	Federal Status [1]	State Status [1]	CRPR Status [1]	Habitat and Blooming Period	Potential for Occurrence [2]
Western leatherwood *Dirca occidentalis*			1B.2	Species found on brushy slopes and mesic sites including riparian areas in mixed evergreen and foothill woodland communities. 80–1,390 feet in elevation. Blooms most often January–March, and as late as April in some conditions.	**May to occur:** The project site contains brushy areas that could be suitable for this species.
Koch's cord moss *Entosthodon kochii*			1B.3	Species found growing on soil along riverbanks within woodland communities. 610–1,200 feet in elevation.	**Not expected to occur:** The project site does not contain riverine habitat for this species.
Tiburon buckwheat *Eriogonum luteolum* var. *caninum*			1B.2	Species found in chaparral, valley and foothill grassland, cismontane woodland, coastal prairie on sandy to gravelly sites serpentine soils. 0–2,300 feet in elevation. Blooms May–September.	**Not expected to occur:** Serpentine soils are not found within the project site.
Minute pocket moss *Fissidens pauperculus*			1B.2	Species found growing on damp soil in dry streambeds and on streambanks along the coast in north coast coniferous and redwood forest. 30–3,360 feet in elevation.	**Not expected to occur:** The project site does not contain stream habitat for this species.
Marin checker lily *Fritillaria lanceolata* var. *tristulis*			1B.1	Species found in canyons, riparian areas, and rock outcrops within coastal bluff scrub, coastal scrub, and coastal prairie. Often found on serpentine soils. 50–490 feet in elevation. Blooms February–May.	**May to occur:** The project site contains coastal scrub and grassland habitat suitable for the species. The project site is within the elevational range of this species.
Fragrant fritillary *Fritillaria liliacea*			1B.2	Species often found on serpentine soils; however, various soils reported though usually on clay. Found in coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland. 10–1,310 feet in elevation. Blooms February–April.	**May to occur:** The project site contains grassland habitat suitable for the species. The project site is within the elevational range of this species.
Blue coast gilia *Gilia capitata* ssp. *chamissonis*			1B.1	Species found in coastal dunes and coastal scrub. 10–660 feet in elevation. Blooms April–July.	**Not expected to occur:** The project site contains scrub habitat; however, within Marin County the species is known to occur only from the Point Reyes, Tomales Bay, and Stinson Beach areas (CNPS 2022; Calflora 2022).
Woolly-headed gilia *Gilia capitata* ssp. *tomentosa*			1B.1	Species found on rocky serpentine outcrops on the coast, within coastal bluff scrub and grassland. 70–410 feet in elevation. Blooms May–July.	**Not expected to occur:** Serpentine soils are not found within the project site.
Dark-eyed gilia *Gilia millefoliata*			1B.2	Species found in coastal dunes. 5–200 feet in elevation. Blooms April–July.	**Not expected to occur:** coastal dune habitat is not found within the project site.
Diablo helianthella *Helianthella castanea*			1B.2	Species usually found in the chaparral/oak woodland interface in rocky, azonal soils; however, also found in coastal scrub, riparian woodland, and grasslands. Often found growing in partial shade. 150–3,500 feet in elevation. Blooms March–June.	**May to occur:** The project site contains oak and grassland habitat suitable for the species. The portions of the project site are within the elevational range of this species.

Species	Federal Status [1]	State Status [1]	CRPR Status [1]	Habitat and Blooming Period	Potential for Occurrence [2]
Congested-headed hayfield tarplant *Hemizonia congesta* ssp. *congesta*			1B.2	Species grows in grassy valleys and on hills in grasslands, also found in fallow fields and along roadsides. 70–2,130 feet in elevation. Blooms April–November.	**May to occur:** The project site contains grassland habitat suitable for the species. The portions of the project site are within the elevational range of this species.
Marin western flax Hesperolinon congestum	T	T	1B.1	Species found in serpentine barrens and in serpentine grassland and chaparral. 200–1,210 feet in elevation. Blooms April–July.	**Not expected to occur:** Serpentine soils are not found within the project site.
Water star-grass *Heteranthera dubia*			2B.2	Species found in still or slow-moving water within marshes and swamps. Requires a pH of 7 or higher. Usually located in slightly eutrophic waters. 50–4,950 feet in elevation. Blooms July–October.	**Not expected to occur:** The project site does not include any marsh habitat that would be suitable for this species.
Santa Cruz tarplant *Holocarpha macradenia*	T	E	1B.1	Species often found with nonnatives on light, sandy soil or sandy clay within coastal prairie, coastal scrub, and grassland communities. 30–720 feet in elevation. Blooms June–October.	**May to occur:** The project site contains grassland and scrub habitat suitable for the species. Portions of the project site are within the elevational range of this species.
Kellogg's horkelia *Horkelia cuneata* var. *sericea*			1B.1	Species found on old dunes, coastal sandhills, and other openings within closed-cone coniferous forest, coastal scrub, coastal dunes, and chaparral. 20–710 feet in elevation. Blooms April–September.	**Not expected to occur:** The project site contains closed-cone coniferous forest and scrub habitat; however, within Marin County the species is only known from the Point Reyes area (CNPS 2022; Calflora 2022).
Point Reyes horkelia *Horkelia marinensis*			1B.2	Species found on sandy flats and dunes near the coast in grassland or scrub plant communities. 10–2,540 feet in elevation. Blooms May–September.	**May to occur:** The project site contains grassland and scrub habitat suitable for the species. Portions of the project site are within the elevational range of this species.
Thin-lobed horkelia *Horkelia tenuiloba*			1B.2	Species found on sandy soils and mesic openings within broadleaved upland forest, chaparral, and grassland. 160–1,640 feet in elevation. Blooms normally from May–July. Will bloom as late as August under certain conditions.	**May to occur:** The project site contains grassland, forest, and scrub habitat suitable for the species. Portions of the project site are within the elevational range of this species.
Island tube lichen *Hypogymnia schizidiata*			1B.3	Species grows on bark and wood of hardwoods and conifers within chaparral and closed-cone coniferous forest. 1,180–1,330 feet in elevation.	**Not expected to occur:** The project site contains closed-cone coniferous forest and scrub habitat; however, within Marin County the species is only known from the Point Reyes area (CNPS 2022).
Small groundcone *Kopsiopsis hookeri*			2B.3	Species found in open woods, shrubby places within north coast coniferous forest. Generally, grows on *Gaultheria shallon*. 390–4,710 feet in elevation. Blooms April–August.	**May to occur:** The project site contains grassland, woodland, and forest habitat suitable for the species. Portions of the project site are near the elevational range of this species.
Beach layia *Layia carnosa*	E	E	1B.1	Species found on sparsely vegetated, semi-stabilized coastal dunes, usually behind foredunes. 0–100 feet in elevation. Blooms March–July.	**Not expected to occur:** Coastal dune habitats are not found within the project site.

Species	Federal Status [1]	State Status [1]	CRPR Status [1]	Habitat and Blooming Period	Potential for Occurrence [2]
Rose leptosiphon *Leptosiphon rosaceus*			1B.1	Species found within coastal bluff scrub communities. 30–460 feet in elevation. Blooms April–July.	**Not expected to occur:** The project site contains scrub habitat; however, within Marin County the species is only known from the Point Reyes, Tomales, and Valley Ford areas (CNPS 2022).
San Francisco lessingia *Lessingia germanorum*	E	E	1B.1	Species found on remnant dunes and open sandy soils relatively free of competing plants within coastal scrub communities. 10–510 feet in elevation. Blooms as early as June under some conditions, but normally in bloom July–November.	**Not expected to occur:** The project site does not contain remnant dunes or other open sandy soils. Species is not known to occur within Marin County (CalFlora 2022).
Tamalpais lessingia *Lessingia micradenia* var. *micradenia*			1B.2	Species usually found on serpentine soils in serpentine grassland or serpentine chaparral. Often found on roadsides. 200–1,000 feet in elevation. Blooms as early as June under some conditions, but normally in bloom July–October.	**Not expected to occur:** Serpentine soils are not found within the project site.
Marsh microseris *Microseris paludosa*			1B.2	Species found in closed-cone coniferous forest, cismontane woodland, coastal scrub, and valley and foothill grassland. 20–980 feet in elevation. Blooms normally in April–June; however, may bloom in July under some conditions.	**May to occur:** The project site contains woodland, forest, scrub, and grassland habitat suitable for the species. The project site is within the elevational range of this species.
Marin County navarretia *Navarretia rosulata*			1B.2	Species found in dry, open rocky places within closed-cone coniferous forest and chaparral. Species can occur on serpentine. 660–2,080 feet in elevation. Blooms May–July.	**May to occur:** The project site contains forested and scrub habitat suitable for the species. The project site is within the elevational range of this species.
White-rayed pentachaeta *Pentachaeta bellidiflora*	E	E	1B.1	Species found on open dry rocky slopes and grassy areas within valley and foothill grassland and cismontane woodland. Species often grows on soils derived from serpentine bedrock. 120–2,000 feet in elevation. Blooms March–May.	**Not expected to occur:** Serpentine soils are not found within the project site.
Choris' popcornflower *Plagiobothrys chorisianus* var. *chorisianus*			1B.2	Species found on mesic sites within chaparral, coastal scrub, and coastal prairie. 50–530 feet in elevation. Blooms March–June.	**May to occur:** The project site contains scrub and grassland habitat suitable for this species.
San Francisco popcornflower *Plagiobothrys diffusus*		E	1B.1	Species historically found on grassy slopes with marine influence in valley and foothill grassland and coastal prairie. 150–1,180 feet in elevation. Blooms March–June.	**May to occur:** The project site contains grassland habitat suitable for the species. The project site is just below the elevational range of this species; however still may occur.
Hairless popcornflower *Plagiobothrys glaber*			1A	Species found in coastal salt marshes, wet alkaline meadows, vernal pools, and seeps. 20–590 feet in elevation. Blooms March–May.	**Not expected to occur:** The project site does not include any marsh or other wet habitats that would be suitable for this species. Alkaline soils are not present.

Species	Federal Status [1]	State Status [1]	CRPR Status [1]	Habitat and Blooming Period	Potential for Occurrence [2]
North Coast semaphore grass *Pleuropogon hooverianus*		T	1B.1	Species found in wet grassy, usually shady areas in broadleafed upland forest, north coast coniferous forest, meadows, and seeps. Sometimes found in freshwater marsh associated with forest environments. 150–3,810 feet in elevation. Blooms April–June.	**May to occur:** The project site contains forested habitat suitable for the species. Portions of the project site are within the elevational range of this species.
Oregon polemonium *Polemonium carneum*			2B.2	Species found in coastal prairie, coastal scrub, and lower montane coniferous forest. 0–6,000 feet in elevation. Blooms April–September.	**May to occur:** The project site contains grassland, scrub, and forested habitat suitable for the species.
Tamalpais oak *Quercus parvula* var. *tamalpaisensis*			1B.3	Species found in lower montane coniferous forest. 330–2,460 feet in elevation. Blooms March–April.	**Not expected to occur:** The project site does not include the lower montane coniferous forest habitat suitable for this species. The project site is also below the elevational range of the species, which is restricted to the slopes of Mt. Tamalpais and ridgelines to the north (Calflora 2022).
Adobe sanicle *Sanicula maritima*		R	1B.1	Species found in meadows, seeps, valley and foothill grassland, chaparral, and coastal prairie on moist clay or ultramafic soils. 100–790 feet in elevation. Blooms February–May.	**May to occur:** The project site contains grassland habitat suitable for the species. The project site is within the elevational range of this species.
Point Reyes checkerbloom *Sidalcea calycosa* ssp. *rhizomata*			1B.2	Species is found in freshwater marshes near the coast. 20–310 feet in elevation. Blooms April–September.	**Not expected to occur:** The project site does not include any marsh habitat that would be suitable for this species.
Marin checkerbloom *Sidalcea hickmanii* ssp. *viridis*			1B.1	Species found on serpentine or volcanic soils within chaparral communities. Species sometimes appears after burns. 160–1,410 feet in elevation. Blooms May–June.	**Not expected to occur:** Serpentine and volcanic soils are not found within the project site.
Scouler's catchfly *Silene scouleri* ssp. *scouleri*			2B.2	Species found in coastal bluff scrub, coastal prairie, and valley and foothill grassland. 0–1,970 feet in elevation. Blooms during the period March–May, or June–August, and as late as September depending on conditions.	**May to occur:** The project site contains grassland and scrub habitat suitable for the species. The project site is within the elevational range of this species.
San Francisco campion *Silene verecunda* ssp. *verecunda*			1B.2	Species found in coastal scrub, valley and foothill grassland, coastal bluff scrub, chaparral, and coastal prairie. Often grows on mudstone or shale, with one recorded site on serpentine. 10–2,120 feet in elevation. Most frequently in March–June, but may bloom as early as February and as late as August depending on conditions.	**May to occur:** The project site contains grassland and scrub habitat suitable for the species. The project site is within the elevational range of this species.
Long-styled sand-spurrey *Spergularia macrotheca* var. *longistyla*			1B.2	Species found in alkaline marshes, swamps, meadows, and seeps. 0–840 feet in elevation. Blooms February–May.	**Not expected to occur:** The project site does not include any marsh or other wet habitats that would be suitable for this species. Alkaline soils are not present.

Species	Federal Status [1]	State Status [1]	CRPR Status [1]	Habitat and Blooming Period	Potential for Occurrence [2]
Santa Cruz microseris *Stebbinsoseris decipiens*			1B.2	Species grows in open areas in loose or disturbed soil, usually derived from sandstone, shale or serpentine, on seaward slopes within broadleafed upland forest, closed-cone coniferous forest, coastal prairie, coastal scrub, valley and foothill grassland, and chaparral. 30–1,640 feet in elevation. Blooms April–May.	**May to occur:** The project site contains areas of closed-cone forest, grassland and scrub habitat suitable for this species. The project site is within the elevational range of this species.
Tamalpais jewelflower *Streptanthus batrachopus*			1B.3	Species grows on talus serpentine outcrops in Closed-cone coniferous forest, chaparral communities. 1,100–2,200 feet in elevation. Blooms April–July.	**Not expected to occur:** Serpentine soils are not found within the project site.
Tiburon jewelflower *Streptanthus glandulosus* ssp. *niger*	E	E	1B.1	Species found in shallow soils and rocky serpentine slopes within valley and foothill grassland communities. 100–490 feet in elevation. Blooms May–June.	**Not expected to occur:** Serpentine soils are not found within the project site.
Mt. Tamalpais bristly jewelflower *Streptanthus glandulosus* ssp. *pulchellus*			1B.2	Species found on serpentine slopes within chaparral and valley and foothill grassland communities. 490–2,630 feet in elevation. Blooms May–July and as late as August under certain conditions.	**Not expected to occur:** Serpentine soils are not found within the project site.
Suisun Marsh aster *Symphyotrichum lentum*			1B.2	Species grows in marshes and swamps (brackish and freshwater). Most often seen along sloughs with *Phragmites, Scirpus*, blackberry, *Typha*, etc. 0–100 feet in elevation. Blooms May–November, but may begin blooming in April in some conditions.	**Not expected to occur:** The project site does not include any marsh habitat that would be suitable for this species.
Two-fork clover *Trifolium amoenum*	E		1B.1	Species found in valley and foothill grassland and coastal bluff scrub. Sometimes found on serpentine soil, open sunny sites, or swales. Most recently cited on roadside and eroding cliff face. 20–1,020 feet in elevation. Blooms April–June.	**May to occur:** The project site contains grassland and scrub habitat suitable for this species. The project site is within the elevational range of this species.
Saline clover *Trifolium hydrophilum*			1B.2	Species found in alkaline marshes, swamps, mesic valley and foothill grassland, and vernal pools. 0–980 feet in elevation. Blooms April–June.	**Not expected to occur:** The project site does not include any marsh or other wet habitats that would be suitable for this species. Alkaline soils are not present.
San Francisco owl's-clover *Triphysaria floribunda*			1B.2	On serpentine and non-serpentine substrate (such as at Pt. Reyes) within coastal prairie, coastal scrub, and valley and foothill grassland. 0–490 feet in elevation. Blooms April–June.	**May to occur:** The project site contains grassland and scrub habitat suitable for this species. The project site is within the elevational range of this species.
Coastal triquetrella *Triquetrella californica*			1B.2	Species grows on gravel or thin soil over outcrops within 100ft from the coast in coastal scrub, grasslands. Often found in open gravels on roadsides, hillsides, rocky slopes, and fields. 30–330 feet in elevation.	**May to occur:** The project site contains grassland and scrub habitat suitable for this species. The project site is within the elevational range of this species.

Notes: CESA = California Endangered Species Act; CEQA = California Environmental Quality Act; CRPR = California Rare Plant Rank; ESA = Federal Endangered Species Act; NPPA = Native Plant Protection Act

[1] Legal Status Definitions

Federal :
E Endangered (legally protected by ESA)
T Threatened (legally protected by ESA)

State:
E Endangered (legally protected by CESA)
T Threatened (legally protected by CESA)
R Rare (legally protected by NPPA)

California Rare Plant Ranks:
1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)
2 Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

Threat Ranks
0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3-Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

[2] Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present on the project site due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

May to occur: Suitable habitat is available at the project site and project site is within the current known distribution of the species; however, there are little to no other indicators that the species might be present.

Known to occur: The species, or evidence of its presence, was observed at the project site during reconnaissance surveys, or was reported by others.

Sources: CNDDB 2022; CNPS 2022; Calflora 2022.

Table A-2 Special-Status Animal Species Known to Occur in the Project Region and Their Potential for Occurrence in the Project site

Species	Federal Status [1]	State Status [1]	Habitat	Potential for Occurrence [2]
Invertebrates				
Bay checkerspot butterfly *Euphydryas editha bayensis*	T		Species restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. *Plantago erecta* is the primary host plant; *Orthocarpus densiflorus* and *O. purpurscens* are the secondary host plants.	**Not expected to occur:** Serpentine soils and associated grasslands are not found within the project site.
California freshwater shrimp *Syncaris pacifica*	E	E	Species is endemic to Marin, Napa, and Sonoma counties. Found in low elevation, low gradient streams where riparian cover is moderate to heavy. Shallow pools away from main streamflow. In winter is found under cut banks with exposed roots. In summer is found on leafy branches touching water.	**Not expected to occur:** The project site does not contain low gradient streams with riparian cover.
Callippe silverspot butterfly *Speyeria callippe callippe*	E		Species is restricted to the northern coastal scrub of the San Francisco peninsula. Hostplant is *Viola pedunculata*. Most adults found on east facing slopes. Males congregate on hilltops in search of females.	**Not expected to occur:** The project site is located outside the range of the species, which is restricted to the San Francisco peninsula.
Mission blue butterfly *Plebejus icarioides missionensis*	E		Species inhabits grasslands of the San Francisco peninsula. The species has three larval host plants: *Lupinus albifrons*, *L. variicolor*, and *L. formosus*, of which *L. albifrons* most often used.	**Not expected to occur:** The project site is located outside the range of the species, which is restricted to the San Francisco peninsula.
Monarch - California overwintering population *Danaus plexippus* pop. 1			Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	**May occur:** The project site is located within the range of winter roosting for the species. Groves of eucalyptus on within the project site my provide sufficient shelter from wind to support overwintering monarchs.
Western bumble bee *Bombus occidentalis occidentalis*		S1S2*	Bumble bees have three basic habitat requirements: suitable nesting sites for the colonies, availability of nectar and pollen from floral resources throughout the duration of the colony period (spring, summer, and fall), and suitable overwintering sites for the queens.	**Not expected to occur:** Grassland habitat for the species is present within the project site; however, there have been no documented occurrences within Marin County since 1963 (CNDDB 2021), and the project is outside of the current distribution of the species (Xerces Society 2018).
Fish				
Coho salmon - central California coast ESU *Oncorhynchus kisutch* pop. 4	E	E	Federally listed populations between Punta Gorda and San Lorenzo River. State listing includes populations south of Punta Gorda. Species require beds of loose, silt-free, coarse gravel for spawning. Suitable streams and rivers also need cover, cool water and sufficient dissolved oxygen.	**May to occur (Adjacent):** While the natural wetland inventory (USFWS 2022) shows two intermittent streams within the project site, the project site does not include streams, or rivers that would be suitable habitat for this species. However, project activities may occur adjacent to San Francisco Bay where this species may be present.

Species	Federal Status [1]	State Status [1]	Habitat	Potential for Occurrence [2]
Eulachon *Thaleichthys pacificus*	T		Species found in Klamath River, Mad River, Redwood Creek and in small numbers in Smith River and Humboldt Bay tributaries. Species spawns in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand and woody debris.	**Not expected to occur:** The project site does not include streams or rivers that would be habitat for this species.
Green sturgeon – southern DPS *Acipenser medirostris* pop. 1	T	SC	Klamath/North coast flowing waters, Sacramento/San Joaquin flowing waters. These are the most marine species of sturgeon. Abundance increases northward of Point Conception. Spawns in the Sacramento, Klamath, and Trinity Rivers. Spawns at temperatures between 8-14 degrees C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	**May to occur (Adjacent):** While the natural wetland inventory (USFWS 2022) shows two intermittent streams within the project site, the project site does not include streams, or rivers that would be suitable habitat for this species. However, project activities may occur adjacent to San Francisco Bay where this species may be present.
Longfin smelt *Spirinchus thaleichthys*	C	SC	Species found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 parts per thousand (ppt), but can be found in completely freshwater to almost pure seawater.	**May to occur (Adjacent):** The project site includes the San Francisco Bay that would be habitat for this species. While project activities would not occur within the Bay, activities may occur adjacent to the Bay where this species could be present.
Sacramento splittail *Pogonichthys macrolepidotus*		SC	Species is endemic to the lakes and rivers of the Central Valley, but now confined to the Delta, Suisun Bay and associated marshes, slow moving river sections, and dead-end sloughs. Requires flooded vegetation for spawning and foraging for young.	**Not expected to occur:** The project site does not include the Delta, Suisun Bay or associated marshes that are habitat for this species.
Southern coastal roach *Hesperoleucus venustus subditus*		SC	Found in the drainages of Tomales Bay and northern San Francisco Bay in the north, and drainages of Monterey Bay in the south.	**Not expected to occur:** While the natural wetland inventory (USFWS 2022) shows two intermittent streams within the project site, the project site does not include streams that would be suitable habitat for this species.
Steelhead - central California coast DPS *Oncorhynchus mykiss irideus* pop. 8	T		Central California coast DPS is found from Russian River, south to Soquel Creek and to, but not including Pajaro River. Also found in San Francisco and San Pablo Bay basins.	**May to occur (Adjacent):** While the National Wetlands Inventory (USFWS 2022) shows two intermittent streams within the project site, the project site does not include streams or rivers that would be suitable habitat for this species. However, project activities may occur adjacent to San Francisco Bay where this species may be present.
Tidewater goby *Eucyclogobius newberryi*	E	SC	Species found in brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	**Not expected to occur:** The project site does not include brackish water habitat that would be suitable for this species.

Species	Federal Status [1]	State Status [1]	Habitat	Potential for Occurrence [2]
Tomales roach *Lavinia symmetricus* ssp. 2		SC	Species found in tributaries to Tomales Bay.	**Not expected to occur:** The project site is located outside the range of the species, which is restricted to tributaries to Tomales Bay.
Amphibians and Reptiles				
California giant salamander *Dicamptodon ensatus*		SC	Species is known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County and east to Napa County. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	**Not expected to occur:** The project site does not provide freshwater aquatic habitat suitable for the species; therefore, upland habitat within the project site is not expected to be occupied.
California red-legged frog *Rana draytonii*	T	SC	Species found in lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	**Not expected to occur:** Permanent freshwater aquatic habitat suitable for breeding by the species does not occur within or near the project site; therefore, wetlands and upland habitat within the project site is not expected to be occupied.
Foothill yellow-legged frog *Rana boylii*		SC	Species is found in partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis. The project site is within the North Coast population which is not listed under CESA or a Candidate for listing under ESA.	**Not expected to occur:** The project site does not contain perennial stream habitat suitable for this species.
Western pond turtle *Actinemys marmorata*		SC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, throughout California below 6,000 feet elevation. Species needs basking sites and suitable upland habitat (sandy banks or grassy open fields) up to 0.3 mile from water for egg-laying.	**Not expected to occur:** The project site does not contain freshwater marsh or slow-moving perennial stream habitat that is suitable for this species.
Birds				
Alameda song sparrow *Melospiza melodia pusillula*		SC	Species is a resident of salt marshes bordering south arm of San Francisco Bay. Inhabits *Salicornia* marshes; nests low in *Grindelia* bushes (high enough to escape high tides) and in *Salicornia*.	**Not expected to occur:** The project site is located outside of the known range of the species, which does not extend into Marin County (Shuford and Gardali 2008)
American peregrine falcon *Falco peregrinus anatum*		FP	Species found near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds, and human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	**Known to occur:** The cliffs and other similar habitat for nesting are not present within or adjacent to the project site. However, the species has been reported to occur in the project area (Appendix A of the Project EIR)
Bald eagle *Haliaeetus leucocephalus*		E FP	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	**Known to occur:** The species has been reported to occur in the project area (Appendix A of the Project EIR); however, with the existing disturbance on the project site nesting is not likely to occur.

Species	Federal Status [1]	State Status [1]	Habitat	Potential for Occurrence [2]
Bank swallow *Riparia riparia*		T	A colonial nester, this species nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	**Not expected to occur:** The vertical banks and cliffs for nesting are not present within or adjacent the project site.
Black swift *Cypseloides niger*		SC	Species is found in the coastal belt of Santa Cruz and Monterey counties; central and southern Sierra Nevada; San Bernardino and San Jacinto mountains. Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above the surf; forages widely.	**Not expected to occur:** The project site is located outside of the known range of the species, which does not extend into Marin County (Shuford and Gardali 2008).
Burrowing owl *Athene cunicularia*		SC	Species found in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Species is a subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel for nest burrows.	**Not expected to occur:** The nearest documented location of the species is approximately 7.0 miles away from the project site, northwest of Mt. Tamalpais (CNDDB 2021), and the grassland within the project site is not likely to support burrowing habitat (WRA 2010).
California (Ridgway's) clapper rail *Rallus obsoletus obsoletus*	E	E FP	Species is found in salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	**Not expected to occur:** The project site does not contain the salt or brackish marsh habitat required for this species. The nearest saltwater marsh to the project site is separated from the project site by Seminary drive and existing residential buildings.
California black rail *Laterallus jamaicensis coturniculus*		T FP	Species inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	**Not expected to occur:** The project site does not contain the salt or freshwater marsh habitat required for this species. The nearest saltwater marsh to the project site is separated from the project site by Seminary drive and existing residential buildings.
Northern harrier *Circus cyaneus*		SC	Species is found in coastal scrub, Great Basin grassland, riparian scrub, valley and foothill grassland, wetlands, coastal saltwater marsh, and freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	**Not expected to occur:** The project site contains shrubby upland vegetation, and saltwater marsh areas within and adjacent to the project site provide foraging habitat for this species. However, the existing disturbance within the project site makes the upland areas likely unsuitable for this ground nesting raptor species.
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*		SC	Species is a resident of the San Francisco Bay region, in fresh and saltwater marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**Not expected to occur:** The project site does not contain the salt marsh habitat required for this species. The nearest saltwater marsh to the project site is separated from the project site by Seminary drive and existing residential buildings.

Species	Federal Status [1]	State Status [1]	Habitat	Potential for Occurrence [2]
San Pablo song sparrow *Melospiza melodia samuelis*		SC	Species is a resident of salt marshes along the north side of San Francisco and San Pablo bays. Inhabits tidal sloughs in the *Salicornia* marshes; nests in *Grindelia* bordering slough channels.	**Not expected to occur:** The project site does not contain the salt marsh habitat required for this species. The nearest saltwater marsh to the project site is separated from the project site by Seminary drive and existing residential development.
Short-eared owl *Asio flammeus*		SC	Species is found in swamp lands, both fresh and salt, lowland meadows, and irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	**Not expected to occur:** The project site does not contain the marsh and wet lowland meadow habitat required for this species.
Western snowy plover *Charadrius alexandrinus nivosus*	T	SC	Species is found on sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	**Not expected to occur:** The project site does not contain the sandy beaches or other sandy gravelly or friable soils for nesting.
White-tailed kite *Elanus leucurus*		FP	Species found in rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**May occur:** The project site contains trees that are potentially suitable for nesting and open areas within and adjacent to the project site provide foraging habitat for this species.
Mammals				
American badger *Taxidea taxus*		SC	Species is most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**Not expected to occur:** Grassland, scrub, and forest habitat is present within the project site; however, existing development and human use of the project site and vicinity likely to prevent occupancy.
Pallid bat *Antrozous pallidus*		SC	Species found in chaparral, coastal scrub, desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, riparian woodland, Sonoran desert scrub, upper montane coniferous forest, and valley and foothill grassland. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**May to occur:** The project site contains mature trees that may contain cavities suitable for roosting. Some unused buildings within the project site may also provide roosting habitat for the species.
Point Reyes jumping mouse *Zapus trinotatus orarius*		SC	Species found primarily in bunch grass marshes on the uplands of Point Reyes. Also present in coastal scrub, grassland, and meadows. Builds grassy nests on ground under vegetation, and burrows in winter.	**Not expected to occur:** The project site is located outside of the known range of the species, which is confined to the coastal area of Point Reyes and the Marin Headlands (Collins 1998a).
Point Reyes mountain beaver *Aplodontia rufa phaea*		SC	Species found in the coastal area of Point Reyes near springs or seepages, along north-facing slopes of hills and gullies in areas overgrown with sword ferns and thimbleberries.	**Not expected to occur:** The project site is located outside of the known range of the species, which is confined to the coastal area of Point Reyes.

Species	Federal Status [1]	State Status [1]	Habitat	Potential for Occurrence [2]
Salt-marsh harvest mouse *Reithrodontomys raviventris*	E	E FP	Species is found only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat, but may occur in other marsh vegetation types and in adjacent upland areas. Does not burrow, build loosely organized nests. Requires higher areas for flood escape.	**Not expected to occur:** The project site does not contain the salt marsh or other Richardson Bay habitats. Habitat required for this species. The nearest salt water marsh to the project site is separated from the project site by Seminary drive and existing residential development.
Salt-marsh wandering shrew *Sorex vagrans halicoetes*		SC	Species found in the salt marshes of the south arm of San Francisco Bay. Medium high marsh 6-8 feet above sea level where abundant driftwood is scattered among Salicornia.	**Not expected to occur:** The project site is located outside of the known range of the species, which not known to occur in Marin County (Collins 1998b). The nearest salt water marsh to the project site is separated from the project site by Seminary drive and existing residential development.
San Pablo vole *Microtus californicus sanpabloensis*		SC	Species is found in the saltmarshes of San Pablo Creek, on the south shore of San Pablo Bay. Constructs burrow in soft soil. Forms a network of runways leading from the burrow.	**Not expected to occur:** The project site is located outside of the known range of the species, which is confined to the shores of San Pablo Bay.
Southern sea otter *Enhydra lutris nereis*	T	FP	Species found in nearshore marine environments from about Ano Nuevo, San Mateo County to Point Sal, Santa Barbara County. Needs canopies of giant kelp and bull kelp for rafting and feeding. Prefers rocky substrates with abundant invertebrates.	**Not expected to occur:** Suitable habitat of giant and bull kelp are not present in the project site.
Suisun shrew *Sorex ornatus sinuosus*		SC	Species known from the tidal marshes of the northern shores of San Pablo and Suisun bays. Requires dense low-lying cover and driftweed and other litter above the mean hightide line for nesting and foraging.	**Not expected to occur:** The project site is located outside of the known range of the species, which is confined to the shores of San Pablo Bay and Suisun Bay.
Ringtail *Bassariscus astutus*		FP	Riparian habitats, forest habitats, and shrub habitats used for denning and foraging in lower to middle elevations.	**Not expected to occur:** Ringtail have not been documented within or adjacent to the project site; however, the species is not tracked in the CNDDB. Forest and scrub habitats are present within the project site; however, existing development and human use of the project site and vicinity likely to prevent occupancy.
Townsend's big-eared bat *Corynorhinus townsendii*		SC	Species is found throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	**May to occur:** The species is highly associated with cave and mine habitats, and no caves or mines are present in the project site. However, some unused buildings within the project site may also provide roosting habitat for the species.

Species	Federal Status [1]	State Status [1]	Habitat	Potential for Occurrence [2]
Western red bat *Lasiurus blossevillii*		SC	Species is found in cismontane woodland, lower montane coniferous forest, riparian forest, riparian woodland. Roosts primarily in trees, 2-40 feet above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	**May to occur:** While the species is primarily found in riparian habitats, the project site contains mature trees that may provide the appropriate leaf density for roosting bats.

Note: CEQA = California Environmental Quality Act; CNDDB = California Natural Diversity Database; DPS= Distinct Population Segment; ESU = Evolutionary Significant Unit; USFWS = U.S. Fish and Wildlife Service

* This species is included as a special-status species due to previous listing as Candidate Endangered by the California Fish and Game Commission. This candidate status was overturned by the courts in 2020; however, the species still warrants consideration under CEQA.

[1] Legal Status Definitions

Federal:

E Endangered (legally protected)
T Threatened (legally protected)
C Candidate (no formal protection)

State:

FP Fully protected (legally protected)
SC Species of special concern (no formal protection other than CEQA consideration)
E Endangered (legally protected)
T Threatened (legally protected)
S1 Critically Imperiled (no formal protection other than CEQA consideration)
S2 Imperiled (no formal protection other than CEQA consideration)

[2] Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present in the project site due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

May to occur: Suitable habitat is available in the project site and project site is within the current distribution of the species; however, there are little to no other indicators that the species might be present.

Known to occur: The species, or evidence of its presence, has been reported by others.

Source: CNDDB 2022; Collins 1998a; Collins 1998b; Shuford and Gardali 2008; USFWS 2022; Xerces Society 2018

REFERENCES

Calflora. 2022. *Information on California plants for education, research, and conservation, with data contributed by public and private individuals and institutions, including the Consortium of California Herbaria. The Calflora Database*. Available: http://www.calflora.org/. Accessed: March 2022.

California Native Plant Society. 2021. *Vegetation Classification of Alliances and Associations in Marin County, California*. Prepared for: Tamalpais Lands Collaborative (One Tam). Prepared by: Jennifer Buck-Diaz, Kendra Sikes, and Julie M. Evens. California Native Plant Society, Vegetation Program. Sacramento, CA.

_____. 2022. *Inventory of Rare and Endangered Plants (online edition, v8-02)*. Results of electronic records search. California Native Plant Society, Sacramento, CA. Available: http://www.rareplants.cnps.org. Accessed September 2022.

California Natural Diversity Database. 2021. Results of electronic records search. California Department of Fish and Wildlife, Biogeographic Data Branch. Sacramento, CA. Accessed July 2021.

Collins, P. W. 1998a. Point Reyes jumping mouse, *Zapus trinotatus orarius*. In. *Terrestrial Mammal Species of Special Concern in California. B.C. Bolster Ed.* California Department of Fish and Game, Wildlife Branch. Sacramento, CA.

_____. 1998b. Salt marsh wandering shrew, *Sorex vagrans halicoetes*. In. *Terrestrial Mammal Species of Special Concern in California. B.C. Bolster Ed.* California Department of Fish and Game, Wildlife Branch. Sacramento, CA.

CNDDB. *See* California Natural Diversity Database.

CNPS. *See* California Native Plant Society.

Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

U.S. Fish and Wildlife Service. 2022. National Wetlands Inventory Mapper. Available: https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper Accessed: March 2022.

USFWS. *See* U.S. Fish and Wildlife Service.

WRA. 2010. *Biological Resources Assessment, Golden Gate Baptist Theological Seminary, Marin County, California*. Prepared for: Hart Marin. Prepared by: WRA Environmental Consultants. San Rafael, CA.

Xerces Society. 2018. *A Petition to the State of California Fish and Game Commission to List the Crotch bumble bee (Bombus crotchii), Franklin's bumble bee (Bombus franklini), Suckley cuckoo bumble bee (Bombus suckleyi), and western bumble bee (Bombus occidentalis occidentalis) as Endangered under the California Endangered Species Act*. October 2018.

Appendix G

Supplemental Bio Memo

March 22, 2023

Tammy Taylor
Senior Planner,
County of Marin, Community Development Agency
3501 Civic Center Dr STE 308
San Rafael, CA 94903

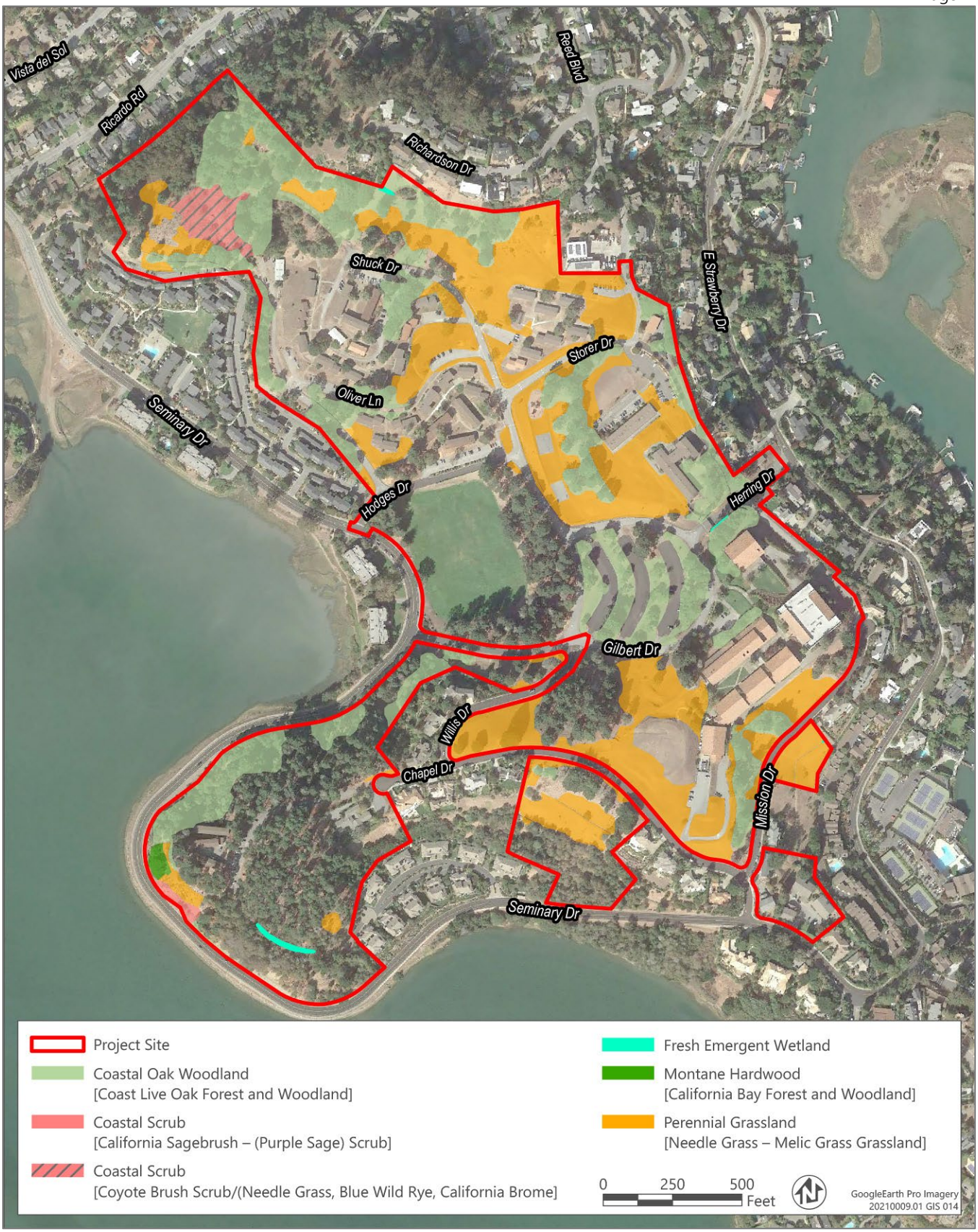
Subject: Sensitive Natural Communities and Sensitive Habitat Types at the North Coast Land Holdings Project Site

Dear Tammy,

This letter report describes the methods and results of a sensitive natural communities and sensitive habitats survey conducted on September 1, 2022 at the site of the North Coast Land Holdings (project), located at 201 Seminary Drive in Mill Valley, California. This report is supplemental to the Biological Resources Technical Memorandum for the project (Ascent 2022) to more thoroughly document the vegetation communities and other habitats present on the project site to determine whether they qualify as sensitive natural communities and other sensitive habitats pursuant to CEQA.

Sensitive natural communities are those native plant communities defined by the California Department of Fish and Wildlife (CDFW) as having limited distribution statewide or within a county or region and that are often vulnerable to environmental effects of projects (CDFW 2022). There are three sensitive natural communities at the project site, including 16.94 acres of Needle Grass – Melic Grass Grassland, 0.94 acre of Coyote Brush Scrub/(Needle Grass, Blue Wild Rye, California Brome), and 0.14 acre of California Bay Forest and Woodland.

Sensitive habitats include sensitive natural communities designated by CDFW, as well as those that are of special concern to resource agencies or are afforded specific consideration through CEQA, Section 1602 of the California Fish and Game Code, Section 404 of the Clean Water Act (CWA), and the state's Porter-Cologne Water Quality Control Act. In addition to sensitive natural communities, sensitive habitats on the project site include 17.11 acres of Coast Live Oak Forest and Woodland, 0.17 acre of California Sagebrush – (Purple Sage) Scrub, and 0.04 acre of fresh emergent wetland. (Figure 1).



Sources: Data downloaded from Golden Gate National Parks Conservancy in 2022; adapted by Ascent in 2022

Figure 1 Sensitive Natural Communities and Sensitive Habitats

BIOLOGICAL AND HISTORICAL SETTING

The project is an approximately 104.8-acre historical seminary campus located on the Strawberry Point peninsula in Richardson Bay, south Marin County and is within the Marin Hills California Level IV ecoregion, characterized by mountains and hills between San Francisco Bay and the San Andreas Fault. The project site is bordered by Seminary Drive to the southwest and west, and suburban residential neighborhoods to the north, northeast and south. The site is composed primarily of a mix of hardscape (e.g., paved roads, buildings) and native and naturalized vegetation cover. Prior to major grading for development of the seminary between 1953 and 1954 (Photo 1), the project site was characterized by open grasslands and patches of coastal scrub vegetation communities around the perimeter of the peninsula.

Source: Heig. 1982.

Photo 1 - Aerial view of the seminary and surrounding area from 1954.

The project site is locally surrounded by ecological preserves and recreation areas, including the 182,116-acre Golden Gate National Recreation Area to the west, and hundreds of acres of Marin County Parks Open Space Preserves to the north and east of the project site. These preserves protect and support sensitive natural communities in their original historical composition of native species and give an indication of what historical vegetation communities were present, locally and regionally, prior to development of the project site and surrounding area.

SURVEY METHODS

Prior to the conducting the field survey, Ascent botanists reviewed aerial photographs and biological and geological technical reports of prior surveys conducted for NCLH as well as studies conducted on nearby preserves to identify any unique soil types, sensitive plant communities, and aquatic features potentially present on the project site.

Ascent botanists Shannon Hickey and Pam Brillante conducted the survey for sensitive habitats and sensitive natural communities on September 1, 2022, in accordance with the protocols described in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018).

During the survey, the project site was traversed on foot by walking meandering transects. All vegetation communities present were surveyed thoroughly to determine if the vegetation communities meet the criteria for a sensitive natural community according to *A Manual of California Vegetation* (Sawyer et al. 2009). All plant species observed were recorded and identified to the highest taxonomic level necessary using *The Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin et al. 2012). Any sensitive habitats including sensitive natural communities were digitally mapped using an Arrow Series® GNSS Global Positioning System unit.

RESULTS

Sensitive Natural Communities

The project site supports three plant communities that qualify as sensitive natural communities: Needle Grass – Melic Grass Grassland, Coyote Brush Scrub / (Needle Grass, Blue Wild Rye, California Brome), and California Bay Forest and Woodland. These communities are displayed in Figure 1 and Table 1, and described below, including representative photos.

CDFW designates sensitive natural communities based on their state rarity and threat ranking using NatureServe's Heritage Methodology. Natural communities with rarity ranks of S1 to S3, where S1 is critically imperiled, S2 is imperiled, and S3 is vulnerable, are considered sensitive natural communities to be addressed in the environmental review processes of CEQA and its equivalents. These communities may or may not contain special-status plants or their habitat (CDFW 2022).

The sensitive natural communities at the project site are described on a grosser scale, using the California Wildlife Habitat Relationships system (CWHR) (CDFW 2022). They are described at an alliance level in this report, including membership rules, according to the *Manual of California Vegetation* (MCV) (Sawyer et al. 2009). Species composition of a natural vegetation community defined in MCV must meet at least one stated membership rule. Table 1 includes a crosswalk between the CWHR and MCV naming convention, as well as the CDFW rarity ranking and corresponding acreage of each community.

Table 1 Sensitive Natural Communities and Sensitive Habitats at the Project Site

CMV	CWHR	CDFW Rarity Ranking	Acres
Needle Grass – Melic Grass Grassland	Perennial Grassland	S3	16.94
Coyote Brush Scrub / (Needle Grass, BlueWild Rye, California Brome)	Coastal Scrub	S3	0.94
California Bay Forest and Woodland	Montane Hardwood	S3	0.14

Needle Grass - Melic Grass Grassland

In this alliance, California melic (*Melica californica*), Torrey's melic (*Melica torreyana*), nodding needle grass [*Nassella (syn. Stipa) cernua*], foothill needle grass [*Nassella (syn. Stipa) lepida*] and/or purple needle grass [*Nassella (syn. Stipa) pulchra*] is dominant or characteristically present in the herbaceous layer with other perennial grasses and herbs including hook three-awn (*Aristida ternipes*), milkvetch (*Astragalus* spp.), wild oat (*Avena* spp)., brome (*Bromus* spp.), dense pine reed-grass (*Calamagrostis koelerioides*), fairy lantern *(Calochortus* spp.), morning-glory (*Calystegia* spp.), soap plant (*Chlorogalum pomeridianum*), clarkia (*Clarkia* spp.), common sandaster, (*Corethrogyne filaginifolia*), doveweed (*Croton setiger*), cryptantha (*Cryptantha* spp.), wild carrot (*Daucus pusillus*), [*Dichelostemma* (syn. *Dipterostemon*) *capitatum*], blue wild-rye (*Elymus glaucus*), wild buckwheat (*Eriogonum* spp.), storksbill (*Erodium* spp.), California poppy (*Eschscholzia californica*), California fescue (*Festuca californica*), mustard (*Hirschfeldia incana*), narrow tarplant (*Holocarpha virgata*), meadow barley (*Hordeum brachyantherum*), June grass (*Koeleria macrantha*), goldfields (*Lasthenia* spp.), plantain (*Plantago* spp.), Nevada blue grass (*Poa secunda*), sanicle (*Sanicula* spp.), western blue-eyed grass (*Sisyrinchium bellum*), clover (*Trifolium* spp), and/or fescue [*Vulpia* spp. (*syn. Festuca*)].

- Emergent trees and shrubs may be present at low cover. The herbaceous layer is generally less than 1 meter in height and cover is open to continuous. Any one of the following membership rules must be met: purple needle grass > 5 percent absolute cover as a characteristic to dominant species in the herbaceous layer.
- Purple needle grass usually > 10 percent relative cover of the herbaceous layer.
- Purple needle grass or nodding needle grass is characteristically present in the herbaceous layer with at least 2 percent absolute cover.
- Purple needle grass (or other needle grass species) has a clear presence in the stand with > 5 percent absolute cover in the herbaceous layer.
- Nodding needle grass > 30 percent relative cover in the herbaceous layer as a characteristic grass.
- California melic and/or purple needle grass > 30 percent relative cover in the herbaceous layer. Other species including Lemmon's needle grass [*Achnatherum (syn. Stipa) lemmonii]*, wild oat, brome, hayfield tarweed (*Hemizonia congesta*), wild rye [*Lolium (syn. Festuca) perennis]*, California plantain (*Plantago erecta)*, and/or English plantain (*Plantago lanceolata*) may intermix as dominant, co-dominant or characteristic taxa in associations of this alliance.
- Torrey's melic > 30 percent relative cover in the herbaceous layer and is commonly associated with serpentinite soils.
- Big squirreltail (*Elymus multisetus)* or squirreltail (*Elymus* elymoides) > 30 percent relative cover in the herbaceous layer on serpentine soils.
- California melic, Torrey's melic, and/or purple needle grass are > 30 percent relative cover in stands. Wild oat, brome, hayfield tarweed, wild rye, California plantain, English plantain, and/or clover species. intermix at > 50 percent relative cover, or > 30 percent relative cover in associations of this alliance.

Needle Grass – Melic Grass Grassland has a State Rarity Ranking of S3 (vulnerable) and comprises approximately 16.94 acres of the project site. Distribution of this vegetation community around the campus is patchy and fragmented, occurring between and around numerous buildings, paved roads, parking lots, sidewalks, and ornamental landscaping.

All the grassland in and around the campus was recently mowed at the time of the survey and the survey was conducted at the beginning of September during a drought year, making it difficult to characterize species composition in this vegetation community. However, other indications confirmed that the majority of grassland on the project site meets at least one membership rule for Needle Grass – Melic Grass Grassland [greater than 5 percent absolute cover of purple needle grass, nodding needle grass, or foothill needle grass]. Ascent botanists were able to identify grass debris laying on the ground as needle grass (*Stipa sp*.; synonym of *Nassella* sp.) and clumping of mowed bunch grasses at greater than 5 percent could be easily distinguished from mowed annual grasses and forbs (Photos 2 and 3); two open grassland areas along the northern and southern project boundaries that had not been mowed at the time of the survey supported greater than 5 to 30 percent of purple needle grass (Photos 4 and 5); and grassland areas distributed across the project site that were surveyed by WRA in 2010 were identified as purple needlegrass grassland, composed of greater than 10 percent purple needle grass and foothill needle grass (WRA 2010). Therefore, it is assumed that the mowed grassland on the project site meets the membership rules for this sensitive natural community.

Source: Ascent Environmental in 2022

Photo 2 - Mowed Needle Grass - Melic Grass Grassland, facing southwest toward Locket Drive.

Source: Ascent Environmental in 2022

Photo 3 - Mowed Needle Grass - Melic Grass Grassland, facing west towards Chapel Drive.

Source: Ascent Environmental in 2022

Photo 4 - Needle Grass - Melic Grass Grassland, facing north towards Richardson Drive (not mowed).

Source: Ascent Environmental in 2022

Photo 5 - Needle Grass - Melic Grass Grassland, facing north towards Chapel Drive (not mowed).

Source: Ascent Environmental in 2022

Photo 6 - Needle Grass - Melic Grass Grassland with higher cover of annual grasses, facing east towards Shuck Drive (not mowed)

Species composition at the time of the surveys, in the two open areas that were not mowed (northwest corner of the project site and along the southern boundary, east of Seminary Cove Drive) includes a combination of native perennial grasses (5 percent to 35 percent cover), nonnative annual and perennial grasses (10 percent to 40 percent cover) and weedy forbs (Photos 5 and 6): purple needle grass, Torrey's melic, California melic , blue wild-rye , common velvet grass (*Holcus lanatus*), harding grass (*Phalaris aquatica*), slender oat (*Avena barbata*), yellow star thistle (*Centaurea solstitialis*), Italian thistle (*Carduus pycnocephalus*), cow parsnip (*Heracleum lanatum*), and field bindweed (*Convolvulus arvensis*).

<u>Coyote Brush Scrub / (Needle Grass, Blue Wild Rye, California Brome)</u>

In this alliance, coyote brush (*Baccharis pilularis*), California coffeeberry (*Frangula californica*) and/or coast silk tassel is dominant to co-dominant in the shrub canopy with California sage brush *(Artemisia californica*), blueblossom *(Ceanothus thyrsiflorus*), California hazelnut *(Corylus cornuta*), orange bush monkeyflower *(Diplacus aurantiacus*), California buckwheat *(Eriogonum fasciculatum*), seaside woolly sunflower (*Eriophyllum staechadifolium),* salal *(Gaultheria shallon),* ocean spray (*Holodiscus discolor*), deerweed [*Lotus scoparius (syn. Acmispon glaber)*], yellow bush lupine (*Lupinus arboreus*), wax myrtle (*Morella californica*), California blackberry (*Rubus ursinus*), white sage (Salvia apiana), purple sage (*Salvia leucophylla),* and poison oak (*Toxicodendron diversilobum*). Emergent trees may be present at low cover including bishop pine (*Pinus muricata*), Douglas-fir (*Pseudotsuga menziesii*), coast live oak (*Quercus agrifolia*) *or* California bay (*Umbellularia californica*). Any one of the following membership rules must be met:

- Coyote brush > 15 percent shrub cover over grassy understory; coyote brush relative cover > 50 percent than other shrub species.
- Coyote brush > 50 percent absolute cover in the shrub layer.
- California coffeeberry > 30 percent relative cover in the shrub canopy with coyote brush, poison oak, and other shrubs in mesic uplands.

- Coast silk tassel > 50 percent relative cover in the shrub canopy with coyote brush and other shrubs.
- Coyote brush > 50 percent relative cover in the shrub canopy, or > 30% with California coffeeberry, poison oak, and/or blackberry (*Rubus* spp.).

The coyote brush scrub in the northwestern corner of the project site comprises 0.94 acre (Photo 7). The coyote brush scrub has Needle Grass-Melic Grass Grassland in the understory (greater than 5 percent). Therefore, this natural community most closely resembles the sensitive natural community, Coyote Brush Scrub / (Needle Grass, Blue Wild Rye, California Brome), which has a Rarity Ranking of S3 (vulnerable). However, the cover area of coyote brush (*Baccharis pilularis*) appears to be increasing from what was mapped in 2010 by WRA. The understory appears to be transitioning to annual grassland with a high cover of slender oat (greater than 35 percent) and there appears to be an increase in the presence of French broom (*Genista monspessulana*) compared to landcover that was mapped in 2010 by WRA. French broom has a California Invasive Plant Council (Cal-IPC) "High" rating, defined as having "severe ecological impacts on physical processes, plant and animal communities, and vegetation structure" (Cal-IPC 2022). Other species observed in this community include California melic, blue wild-rye, harding grass, and ripgut brome (*Bromus diandrus*) in the understory, and poison oak and California bay saplings in the overstory.

Source: Ascent Environmental in 2022

Photo 7 - Coyote Brush Scrub / (Needle Grass, Blue Wild Rye, California Brome), facing north.

California Bay Forest and Woodland

California bay is dominant or co-dominant in the tree or tall shrub canopy of this alliance with big-leaf maple (*Acer macrophyllum*), California buckeye (*Aesculus californica*), white alder (*Alnus rhombifolia*), red alder (*Alnus rubra*), Pacific madrone (*Arbutus menziesii*), California hazelnut, Southern California black walnut (*Juglans californica*), *tanoak* (*Notholithocarpus densiflorus*), foothill pine (*Pinus sabiniana*), western sycamore (*Platanus racemosa*), Douglas-fir (Pseudotsuga menziesii), coast live oak, canyon live oak (*Quercus chrysolepis),* interior live oak (*Quercus wislizeni*), and coast redwood (*Sequoia sempervirens*). Any one of the following membership rules must be met:

- Conifers < 30 percent relative cover in canopy, California bay > 30 percent relative cover in the tree canopy.
- California bay usually > 50 percent relative cover in the overstory as a tree or tall shrub; when with interior live oak > 30 percent relative cover.
- California bay > 50 percent relative cover in the tree canopy, or > 30 percent relative cover with coast live oak.

California Bay Forest and Woodland, located along the southwestern boundary of the project site, has a State Rarity Ranking of S3 (vulnerable) and comprises approximately 0.14 acre. California bay is the dominant species in the overstory with annual grasses in the understory.

Other Sensitive Habitats

Coast Live Oak Woodland and Forest

Coast live oak is dominant or co-dominant in the upland tree canopy with big-leaf maple (*Acer macrophyllum*), Pacific madrone, Southern California black walnut, blue oak (Quercus douglasii), California black oak (*Quercus kelloggii)*, valley oak (*Quercus lobata*), and California bay. To meet the membership rules of the MCV alliance one of the following must be true: Coast live oak comprises greater than 50 percent of the relative cover in the tree canopy; if California bay or madrone trees are present, then coast live oak is greater than 30 percent of the relative cover in the tree canopy.

In this habitat type, coast live oak is the dominant canopy species in a single tree stratum over a shrub or herb understory and tree canopy closure ranges from 10-60 percent. The coast live oak trees often occur in a patchy distribution within a shrub matrix of species such as toyon (*Heteromeles arbutifolia*), common manzanita (*Arctostaphylos manzanita*), deer brush (*Ceanothus* spp.), and poison oak with a sparse understory of herbs. Alternatively, depending mainly on disturbance history, the oaks may be embedded in a grassland matrix comprised of a diverse mix of perennial bunchgrasses, [e.g., California brome [*Bromus carinatus* (*syn. Bromus sichensis var. Carinatus*)], purple needle grass), shrubs, and annual grasses and forbs.

Coast live oak woodland forest comprises 17.11 acres distributed throughout the project site. This habitat contains a mix of native species, including coast live oak and California bay in the overstory and California blackberry, poison oak, creeping snowberry (*Symphoricarpos mollis*), and French broom seedlings in the shrub layer, with an understory of nonnative annual grasses, including slender oat and bristly dogtail grass (*Cynosurus echinatus*).

Oak woodlands are recognized as sensitive habitats pursuant to the Oak Woodlands Conservation Act and Public Resources Code Section 21083.4, regardless of whether the oak woodland vegetation alliance is a designated sensitive natural community. Coast live oak woodland is not designated a sensitive natural community; however, it is a sensitive habitat type pursuant to CEQA.

The Marin County Wide Plan includes the following measure related to the protection of Oak woodlands:

- Policy BIO-1.3. Protect Woodlands, Forests, and Tree Resources. Protect large native trees, trees with historical importance; oak woodlands; healthy and safe eucalyptus groves that support colonies of monarch butterflies, colonial nesting birds, or known raptor sites; and forest habitats. Prevent the untimely removal of trees through implementation of standards in the Development Code and the Native Tree Preservation and Protection Ordinance. Encourage other local agencies to adopt tree preservations ordinances to protect native trees and woodlands, regardless of whether they are located in urban or undeveloped areas.

California Sagebrush - (Purple Sage) Scrub

California sagebrush and/or purple sage are dominant or co-dominant in the shrub canopy with chamise (*Adenostoma fasciculatum*), coyote brush, bladderpod [*Cleome isomeris (syn. Peritoma arborea*)], orange bush monkeyflower, bush sunflower (*Encelia californica*), brittlebush (*Encelia farinosa*), desert tea (*Ephedra californica*), interior goldenbush (*Ericameria linearifolia*), coastal wild buckwheat (*Eriogonum cinereum),* California buckwheat, golden –yarrow (*Eriophyllum confertiflorum*), chaparral yucca (*Hesperoyucca whipplei*), coastal goldenbush (*Isocoma menziesii*), heart-leaved keckiella (*Keckiella cordifolia*), southern honeysuckle (*Lonicera subspicata*), deerweed, laurel sumac (*Malosma laurina),* prickly pear (*Opuntia littoralis),* evergreen buckthorn (*Rhamnus ilicifolia),* lemonade berry

(*Rhus integrifolia),* sugar bush (*Rhus ovata*), white sage, black sage (*Salvia mellifera)* and poison oak. Emergent trees or tall shrubs may be present at low cover, including Southern California black walnut, coast live oak or black elderberry (*Sambucus nigra*). Any one of the following membership rules must be met:

- California sagebrush > 3 times cover of coyote brush and other shrub species.
- California sagebrush > 60 percent relative cover in the shrub canopy.
- California sagebrush > 60 percent relative cover in the shrub canopy or laurel sumac or orange bush monkeyflower sometimes > 30 percent relative cover.
- Both California sagebrush and California buckwheat have 30-60 percent relative cover in the shrub canopy.
- Purple sage > 30 percent relative cover, often codominant with California sagebrush.
- Purple sage > 60 percent relative cover in the shrub canopy.
- California sagebrush > 50 percent relative cover in the shrub canopy.

California Sagebrush – (Purple Sage) Scrub is located along the southwestern boundary of the project site, comprising approximately 0.17 acre. California sagebrush is the dominant species in this community. Other species observed include coyote brush and fennel.

Fresh Emergent Wetland

Wetlands that qualify as waters of the United States according to Section 404 of the Clean Water Act and or Waters of the State under the Porter-Cologne Water Quality Control Act are subject to regulation under state and federal law.

There is a total 0.04 acre of fresh emergent wetland present in two roadside ditches and along a drainage feature that appears to be the result of irrigation runoff from an adjacent residential property. The fresh emergent wetland on the project site is dominated by rabbitsfoot grass (*Polypogon monspeliensis*) and tall flatsedge (*Cyperus eragrostis*), which are common opportunistic, weedy hydrophytic species.

DISCUSSION

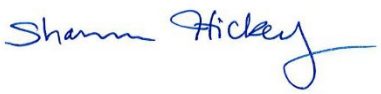
The project site is underlain by a Franciscan Complex mélange that is predominantly sandstone and shale, including chert outcrops (PRA 2016). It is likely that the presence of chert outcrops is the reason relic perennial grassland persists and has not converted to annual grassland despite significant excavation and development activities at the project site and surrounding areas, starting in the 1950s, and despite the presence of nonnative and invasive annual grasses in proximity to areas supporting perennial grassland.

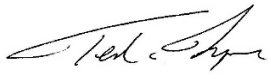
According to research for the National Park Service (NPS) in the nearby Marin Headlands, there appears to be an association between chert soils and native perennial grasslands. "At the landscape scale, the grasslands sampled in the Marin Headlands form a consistent and repeatable vegetation type that appears to be closely associated with soil derived from Franciscan complex chert, which is relatively uncommon elsewhere in the San Francisco Bay Area" (NPS 2013). Moreover… "the Marin Headlands grasslands found on chert-derived soils appear relatively resistant to undergoing succession. Succession proceeds more rapidly in productive soils (Prach et al. 1993) and it seems that the chert-derived soils are relatively shallow and less productive; hence, many grasslands in the study area have not type-converted even after decades without disturbances from grazing or fire. Like many portions of the San Francisco Bay Area, the geology of the Marin Headlands is complex and unique. Substrate or soil type has a large effect on the patterning of vegetation and dynamics" (NPS 2013).

While the project site supports Needle Grass – Melic Grass Grassland in and around the campus and as an understory to coyote brush scrub, much of this vegetation community on the project site is fragmented, between buildings and paved roads, is regularly mowed, and surrounded by development. The small patch size of the onsite perennial grassland and surrounding human disturbances reduce the habitat quality of these grasslands for native fauna. There are preserves (i.e., Golden Gate National Recreation Area, Ring Mountain Preserve, Old Saint Hilary's Preserve, La

Cresta Open Space, Atkinson Open Space, Mt Burdell Preserve) within a few miles of the project site where the characteristic signature of perennial grasslands (e.g., rough, clumpy texture) can be seen from Google Earth aerial imagery and these preserves boast the presence of protected relic perennial grasslands on their lands. Therefore, while this vegetation community is considered vulnerable in the context of the distribution of relic perennial grassland statewide, loss of perennial grassland patches from the project site would not represent a significant impact to this resource in the region because it is not functioning as a high-quality natural community and there is an abundance of high-functioning native perennial grasslands protected in preserves surrounding the project site.

Sincerely,





Name Shannon Hickey
Title Botanist and Wetland Ecologist

Ted Thayer
Senior Biologist

Project File (20210009.01)

REFERENCES

Ascent Environmental. 2022. *Biological Resources Technical Memorandum for the North Coast Land Holdings Project*. Sacramento, CA.

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken (eds.). 2012. The Jepson Manual: Vascular Plants of California, Second Edition. Berkeley: University of California Press.

California Department of Fish and Wildlife. 2018. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*.

California Department of Fish and Wildlife. 2022. Definition of Sensitive Natural Communities. Available: https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities#sensitive%20natural%20communities. Accessed September 27, 2022.

Cal-IPC. 2022. California Invasive Plant Council. Database of Invasive Species. Berkely, CA. Available: https://www.cal-ipc.org/plants/profile/genista-monspessulana-profile/. Accessed on October 11, 2022.

CDFW. *See* California Department of Fish and Wildlife.

Heig, James (editor). 1984. *Pictorial History of Tiburon: A California Railroad Town*. Scottswall Associates: San Francisco, CA.

PRA. *See* Purcell, Rhoades, and Associates.

Prach, K., P. Pysek, and P. Smilauer. 1993. On the rate of succession. Oikos 66:343–346. Cited in National Park Service. 2013.

Purcell, Rhoades, and Associates. 2016. *Preliminary Geotechnical Design Report at the Seminary for North Coast Land Holdings, LLC*. Pleasant Hill, CA.

National Park Service. 2013. *Native Component Grasslands of the Marin Headlands. Natural Resources Technical Report.* U.S. Department of the Interior. Fort Collins, CO.

NPS. *See* National Park Service.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. *A Manual of California Vegetation*, Second Edition. California Native Plant Society, Sacramento. Available: https://vegetation.cnps.org/. Accessed September 27, 2022

WRA Environmental Consultants. 2010. *Biological Resources Assessment of the Golden Gate Baptist Theological Seminary Marin County, California*. Prepared for North Coast Land Holdings. Mill Valley, CA.

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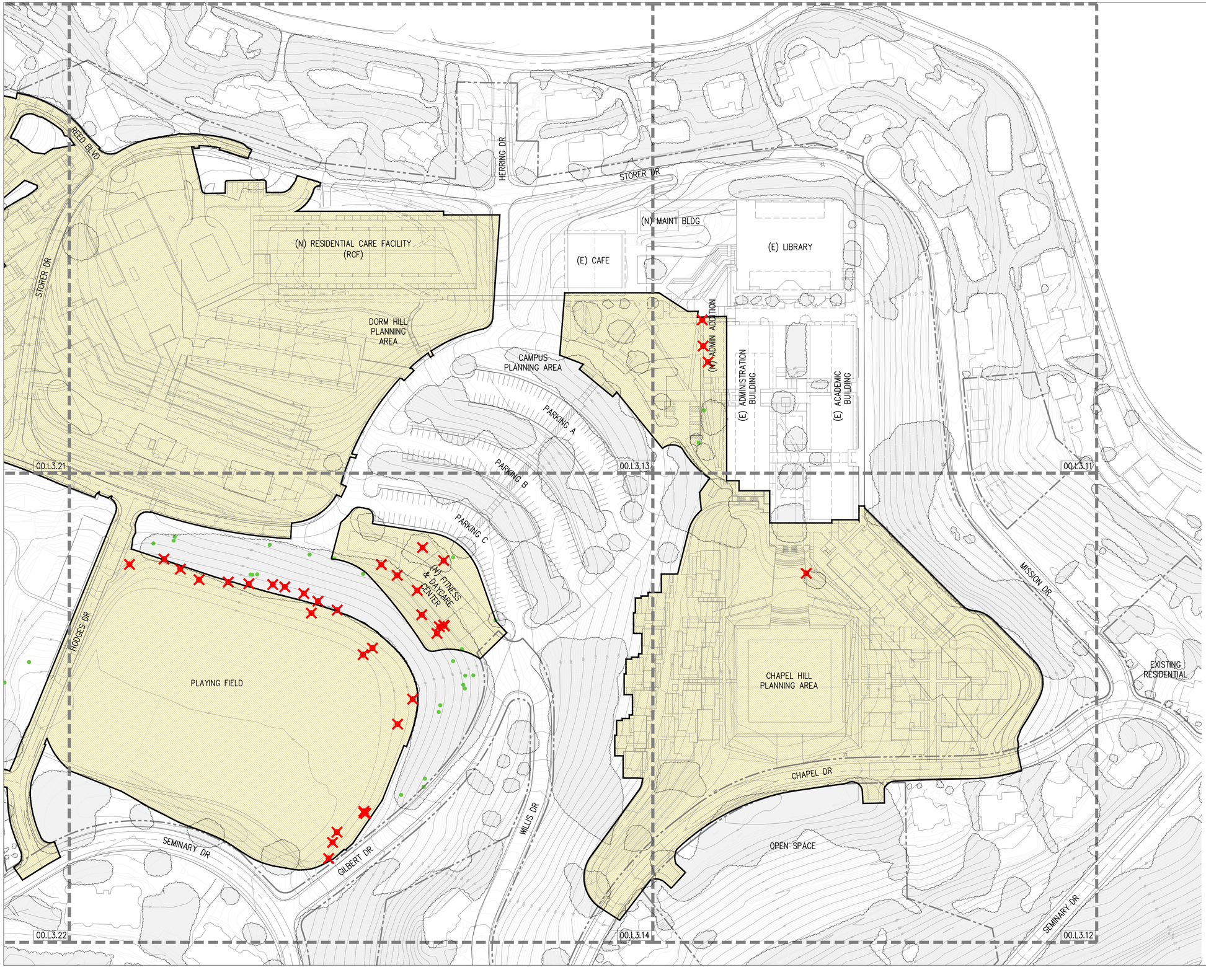
Appendix H

Forest Management and Tree Removal Plan



FOREST MANAGEMENT NOTES:

The Seminary site includes existing stands of native and non-native tree species, including coast live oak, California buckeye, Monterey pine, and acacia. Protected trees designated for removal, within the limits of grading and immediately adjacent areas, are identified on Sheets L3.11–L3.14 and Sheets L3.21–L3.24. Protected trees will be replaced at a ratio of 3:1 consistent with the Marin County Tree Ordinance (See Sheets L1.10A and L1.20A for plant lists and quantities). Other trees, consisting of predominantly non-native species within the shaded canopy symbol, generally occur outside the limits of grading.

Management goals for trees beyond the construction limits are to promote native tree establishment and improving the health of the existing trees. The other critical goal is to reduce public safety risks for both fire and structural failure of trees near public use and residential areas. Dead and dying trees will be removed and retained trees pruned to limit fire hazards (See Vegetation Management Sheets L4.10 and L4.20). Non-native, pyrophytic, and invasive species such as acacia will be removed. The stands of Monterey pine, which are at the end of their healthy lifespan and now pose significant fire and safety risks, will be removed as advised by a qualified arborist and the County Fire Marshall.

LEGEND

- EXISTING OAK TREE TO REMAIN
- PROTECTED TREE TO BE REMOVED
- EXISTING TREE CANOPY
- APPROXIMATE EXTENT OF GRADING

PROTECTED TREES TO BE REMOVED: 89

SEE 40 SCALE PLANS FOR TREE IDENTIFICATION NUMBERS, SPECIES AND DIAMETER AT BREAST HEIGHT

SEE ARBORIST REPORT FOR DETAILS

0 40' 80' 160'

PROJECT NORTH

NORTH COAST LAND HOLDINGS LLC
201 Seminary Drive
Mill Valley, CA 94941

CAVAGNERO
JOSEPH CAVAGNERO ASSOCIATES ARCHITECTS
1044 Sansome Street, Suite 200 T: 415.399.9944
San Francisco, California 94111 F: 415.399.9945

swa

REV	DATE	DESCRIPTION
	10.05.2015	PLANNING SUBMITTAL SET
	05.16.2016	PLANNING RESUBMITTAL SET
	01.31.2020	PLANNING / MP RESUBM SET

THE SEMINARY

201 SEMINARY DRIVE
MILL VALLEY, CA 94941

FOREST MANAGEMENT AND TREE REMOVAL PLAN EAST

1" = 80'

BLDG. TYPE
00

SHEET NO.
L3.10

LEGEND

- EXISTING OAK TREE TO REMAIN
- T 100 COAST LIVE OAK, 15" — PROTECTED TREE TO BE REMOVED
- DIAMETER AT BREAST HEIGHT
- T 100 — PHYSICAL TAG NUMBER PER ARBORIST REPORT
- WP 100 — WAY POINT NUMBER PER ARBORIST REPORT
- EXISTING TREE CANOPY
- SEE ARBORIST REPORT FOR DETAILS

0 20' 40' 80'

PROJECT NORTH

NORTH COAST LAND HOLDINGS LLC
201 Seminary Drive
Mill Valley, CA 94941

CAVAGNERO
MARK CAVAGNERO ASSOCIATES ARCHITECTS
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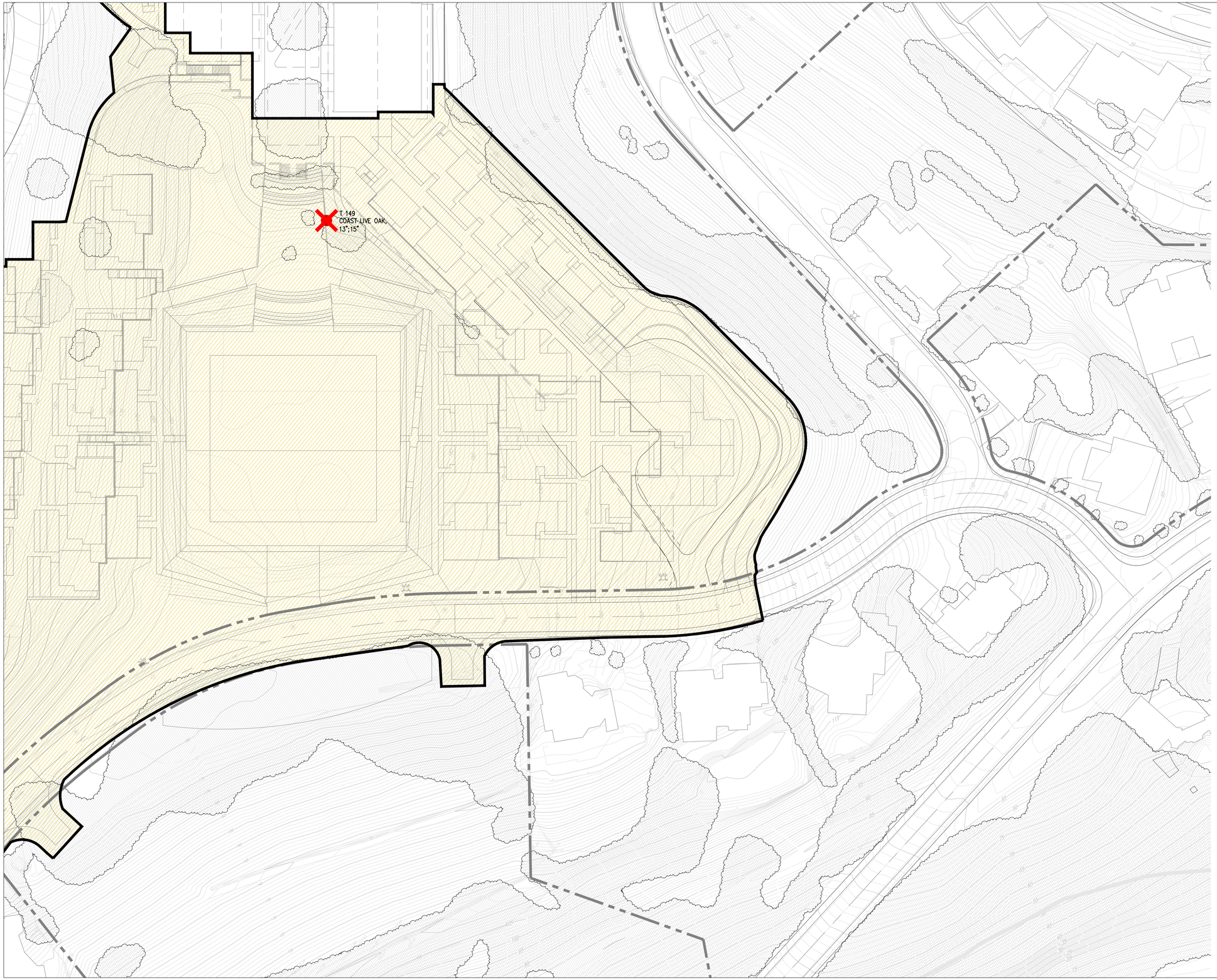
THE SEMINARY
201 SEMINARY DRIVE
MILL VALLEY, CA 94941

FOREST MANAGEMENT AND TREE REMOVAL PLAN
EAST
1" = 40'

BLDG. TYPE
00

SHEET NO.
L3.11



LEGEND

- EXISTING OAK TREE TO REMAIN
- T 100 / COAST LIVE OAK, 15" — PROTECTED TREE TO BE REMOVED; DIAMETER AT BREAST HEIGHT
- T 100 — PHYSICAL TAG NUMBER PER ARBORIST REPORT
- WP 100 — WAY POINT NUMBER PER ARBORIST REPORT
- EXISTING TREE CANOPY

SEE ARBORIST REPORT FOR DETAILS

0 20' 40' 80'

PROJECT NORTH

NORTH COAST LAND HOLDINGS LLC
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Mill Valley, CA 94941

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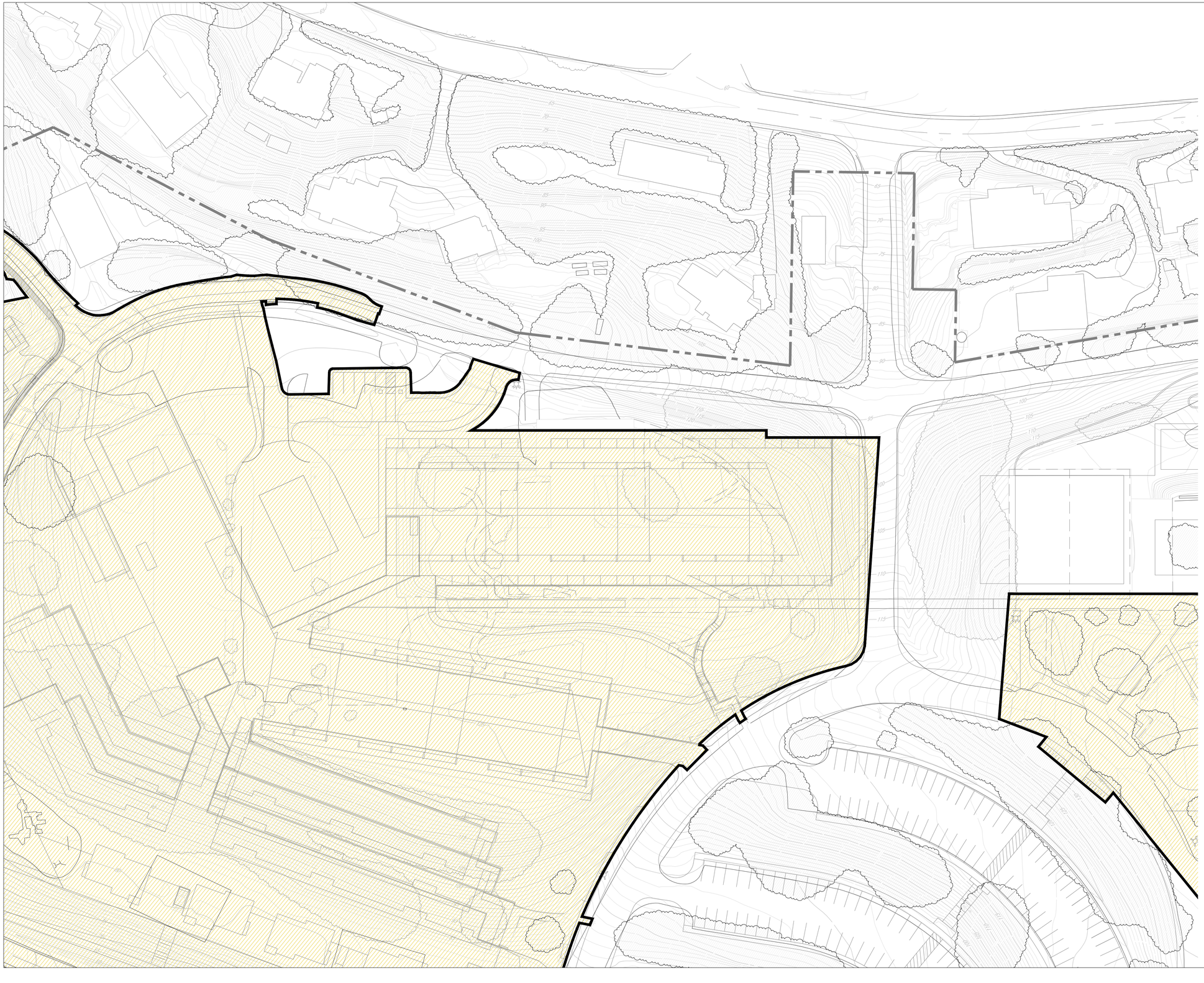
THE SEMINARY

201 SEMINARY DRIVE
MILL VALLEY, CA 94941

FOREST MANAGEMENT AND TREE REMOVAL PLAN
EAST
1" = 40'

BLDG. TYPE
00

SHEET NO.
L3.12



NORTH
COAST
LAND HOLDINGS
L L C

201 Seminary Drive
Mill Valley, CA 94941

CAVAGNERO
CAVAGNERO ASSOCIATES ARCHITECTS
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San Francisco, California 94111 F 415.399.9441

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THE SEMINARY

201 SEMINARY DRIVE
MILL VALLEY, CA 94941

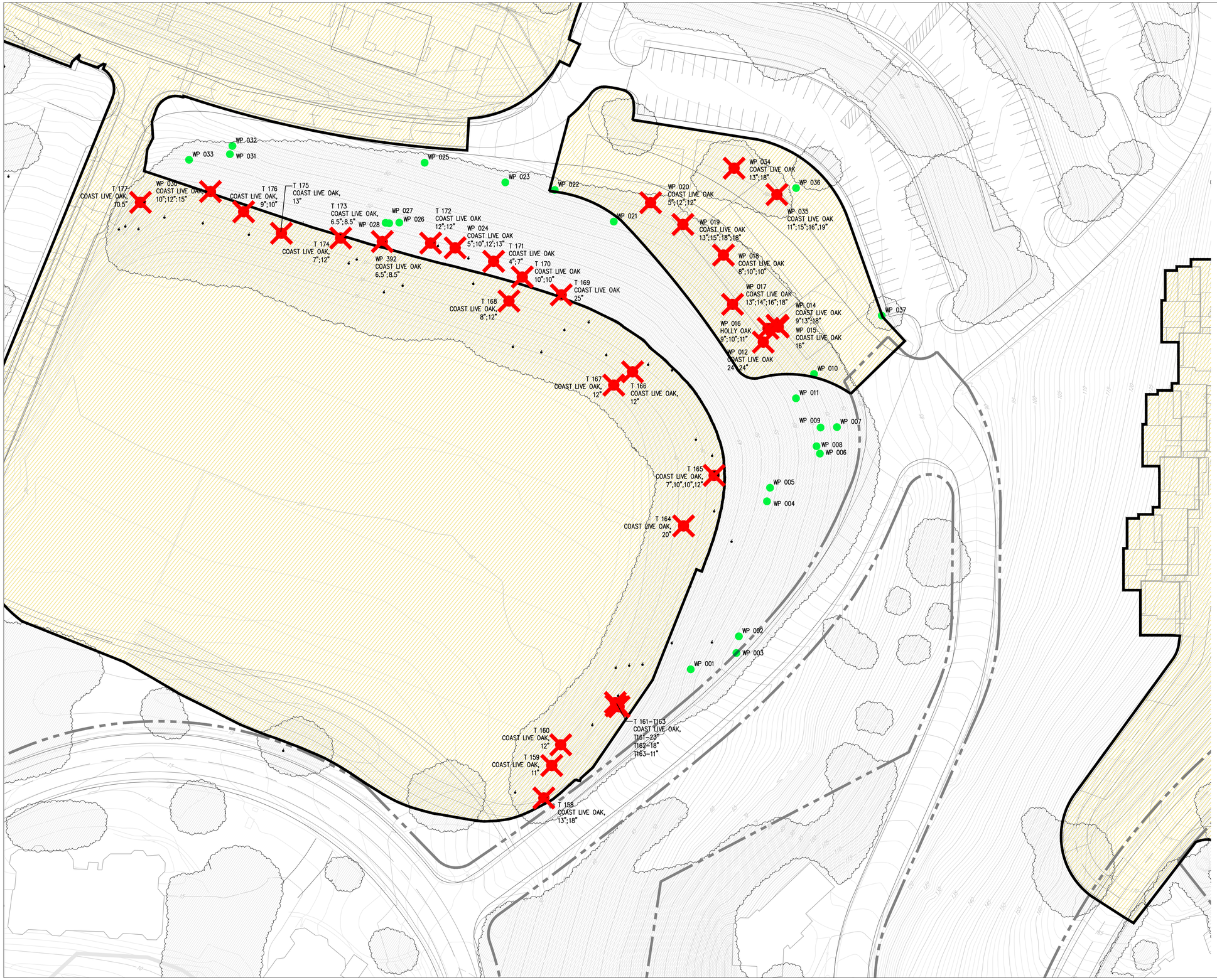
IN PROGRESS

FOREST MANAGEMENT
AND TREE REMOVAL PLAN
EAST

1" = 40'

BLDG. TYPE
00

SHEET NO.
L3.13



LEGEND

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- T 100 COAST LIVE OAK, 15" — PROTECTED TREE TO BE REMOVED; DIAMETER AT BREAST HEIGHT
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- WP 100 — WAY POINT NUMBER PER ARBORIST REPORT
- EXISTING TREE CANOPY
- SEE ARBORIST REPORT FOR DETAILS

0 20' 40' 80'

PROJECT NORTH

NORTH COAST LAND HOLDINGS LLC
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Mill Valley, CA 94941

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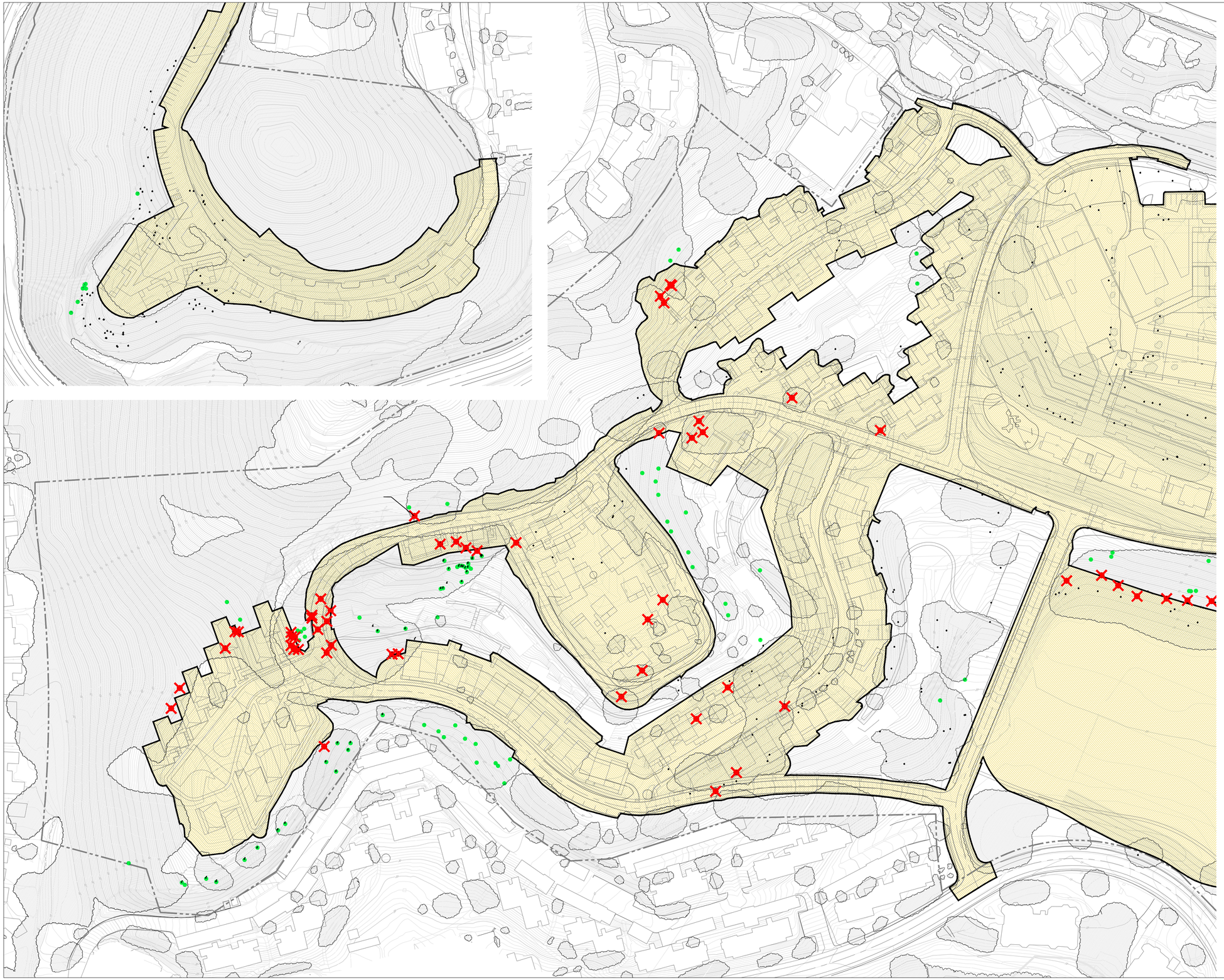
THE SEMINARY
201 SEMINARY DRIVE
MILL VALLEY, CA 94941

FOREST MANAGEMENT AND TREE REMOVAL PLAN
EAST
1" = 40'

BLDG. TYPE
00

SHEET NO.
L3.14



FOREST MANAGEMENT NOTES:

The Seminary site includes existing stands of native and non-native tree species, including coast live oak, California buckeye, Monterey pine, and acacia. Protected trees designated for removal, within the limits of grading and immediately adjacent areas, are identified on Sheets L3.11–L3.14 and Sheets L3.21–L3.24. Protected trees will be replaced at a ratio of 3:1 consistent with the Marin County Tree Ordinance (See Sheets L1.10A and L1.20A for plant lists and quantities). Other trees, consisting of predominantly non-native species within the shaded canopy symbol, generally occur outside the limits of grading.

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- PROTECTED TREE TO BE REMOVED
- EXISTING TREE CANOPY
- APPROXIMATE EXTENT OF GRADING

PROTECTED TREES TO BE REMOVED: 89

SEE 40 SCALE PLANS FOR TREE IDENTIFICATION NUMBERS, SPECIES AND DIAMETER AT BREAST HEIGHT

SEE ARBORIST REPORT FOR DETAILS

0 20' 40' 80'

PROJECT NORTH

NORTH COAST LAND HOLDINGS LLC
201 Seminary Drive
Mill Valley, CA 94941

CAVAGNERO
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San Francisco, California 94117 F: 415.399.9441

swa

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THE SEMINARY
201 SEMINARY DRIVE
MILL VALLEY, CA 94941

FOREST MANAGEMENT AND TREE REMOVAL PLAN
WEST
1" = 80'

BLDG. TYPE
00

SHEET NO.
L3.20

T 141
T 140
T 138
COAST LIVE OAK,
11";14";16"
T 137
COAST LIVE OAK,
25"
T 139
COAST LIVE OAK,
16" LOW
T 136
COAST LIVE OAK,
16" LOW
T 142
T 143
T 135
COAST LIVE OAK,
24" LOW
T 9365
COAST LIVE OAK,
11.5";22"
T 9362
COAST LIVE OAK,
9";10";11";16"
T 9363
COAST LIVE OAK,
18"
T 9364
COAST LIVE OAK,
10";17"
T 134
COAST LIVE OAK,
20" LOW
T 9373
T 9361
T 9357

LEGEND

- EXISTING OAK TREE TO REMAIN
- T 100 COAST LIVE OAK, 15" — PROTECTED TREE TO BE REMOVED; DIAMETER AT BREAST HEIGHT
- T 100 — PHYSICAL TAG NUMBER PER ARBORIST REPORT
- WP 100 — WAY POINT NUMBER PER ARBORIST REPORT
- EXISTING TREE CANOPY
- SEE ARBORIST REPORT FOR DETAILS

0 20' 40' 80'

PROJECT NORTH

NORTH COAST LAND HOLDINGS LLC
201 Seminary Drive
Mill Valley, CA 94941

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CAVAGNERO ASSOCIATES ARCHITECTS
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THE SEMINARY

201 SEMINARY DRIVE
MILL VALLEY, CA 94941

FOREST MANAGEMENT AND TREE REMOVAL PLAN
WEST
1" = 40'

BLDG. TYPE
00

SHEET NO.
L3.21

TIGHTLY SPACED OAK GROVE, SOME TREES MAY REMAIN
T 104 – T 113, COAST LIVE OAK,
T104–5";6";6";11"
T105–6"
T106–3";7"
T107–7.5"
T108–6"
T109–10.5"
T110–5"
T111–5";6"
T112–4";10"
T113–6"

T 73
COAST LIVE OAK,
40" LOW

T 74

T 75
COAST LIVE OAK,
30"

T 76
COAST LIVE OAK,
17"

WP 9
T 101
COAST LIVE OAK
14"

WP 10

T 83
T 84
T 82
T 81
T 78
T 77
T 79
T 80
T 9300
T 72
COAST LIVE OAK,
12";18"
T 71
T 70
T 9299,
BAY LAUREL,
7"
T 69
T 65
T 66
T 64

T 102
COAST LIVE OAK,
16";24"

T 103
COAST REDWOOD,
22"

T 9357
T 9356
T 9353
T 9355
T 9354
T 9352
T 9351
T 9380
T 9348
T 9347

T 128
COAST LIVE OAK,
10";20"

T 9346
COAST LIVE OAK,
12";15.5"

T 9345
COAST LIVE OAK,
33" LOW

WP 21
T 127
COAST LIVE OAK,
12";16";18"

T 131
COAST LIVE OAK,
12";15";15"

WP 20
T 126
COAST LIVE OAK,
7";7";9";10"

T 133
COAST LIVE OAK,
10";12";17";18"

T 132
COAST LIVE OAK,
11";12";13";15"

T 130
COAST LIVE OAK,
9";17"

T 129
COAST LIVE OAK,
16"±

T 23
T 20
T 22
T 21
T 17
T 16
T 18
T 13
T 14
T 12
T 11

LEGEND

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- EXISTING TREE CANOPY
- SEE ARBORIST REPORT FOR DETAILS

0 20' 40' 80'

PROJECT NORTH

NORTH COAST LAND HOLDINGS LLC
201 Seminary Drive
Mill Valley, CA 94941

CAVAGNERO
JOINT VENTURE ASSOCIATED ARCHITECTS
1544 Sansome Street, Suite 200
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F: 415.399.9441

swa

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THE SEMINARY

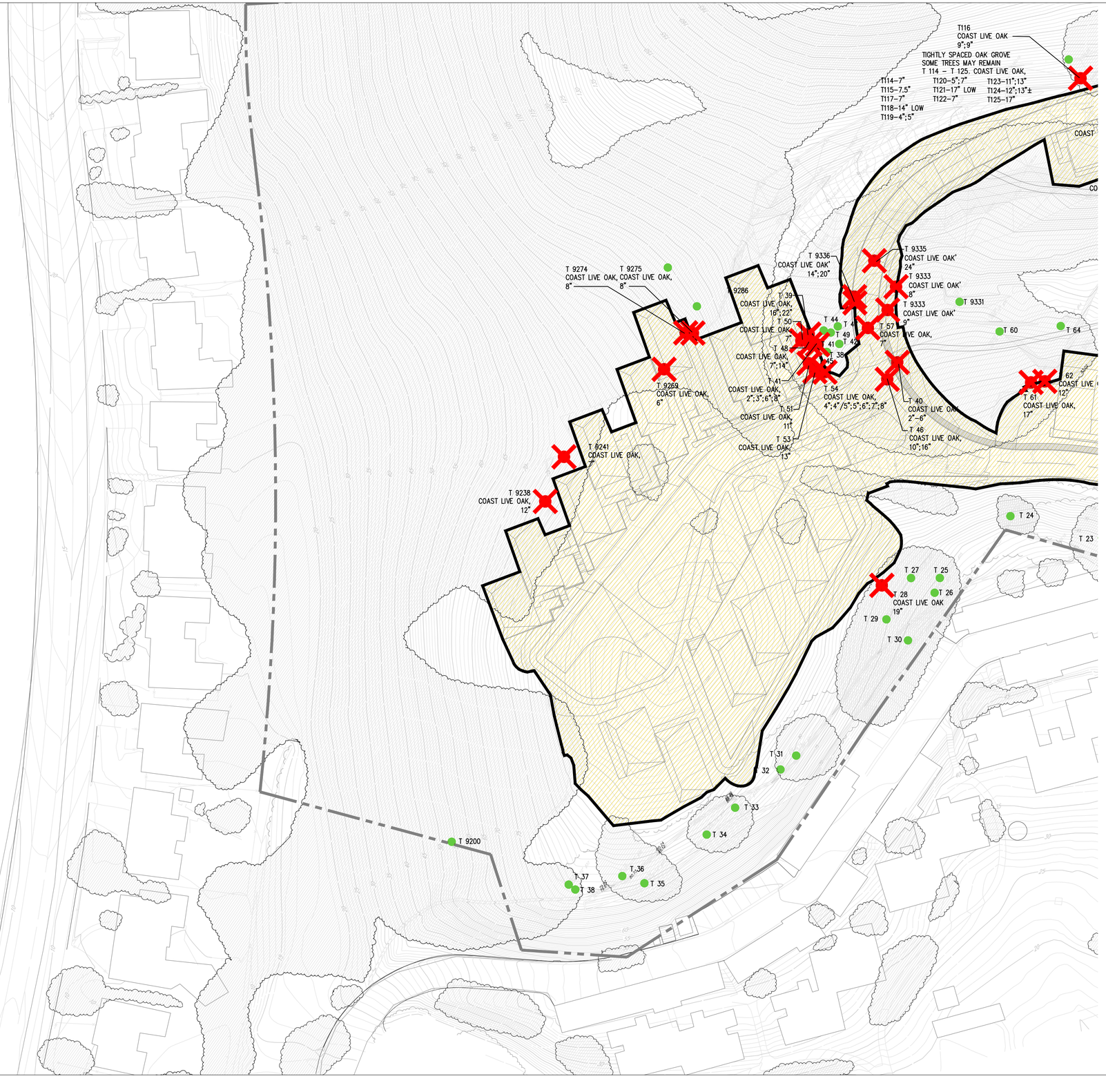
201 SEMINARY DRIVE
MILL VALLEY, CA 94941

FOREST MANAGEMENT AND TREE REMOVAL PLAN WEST

1" = 40'

BLDG. TYPE
00

SHEET NO.
L3.22



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- EXISTING TREE CANOPY
- SEE ARBORIST REPORT FOR DETAILS

0 20' 40' 80'

PROJECT NORTH

NORTH COAST LAND HOLDINGS LLC
201 Seminary Drive
Mill Valley, CA 94941

CAVAGNERO
MARK CAVAGNERO ASSOCIATES ARCHITECTS
1544 Sansome Street, Suite 200 T: 415.369.6944
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swa

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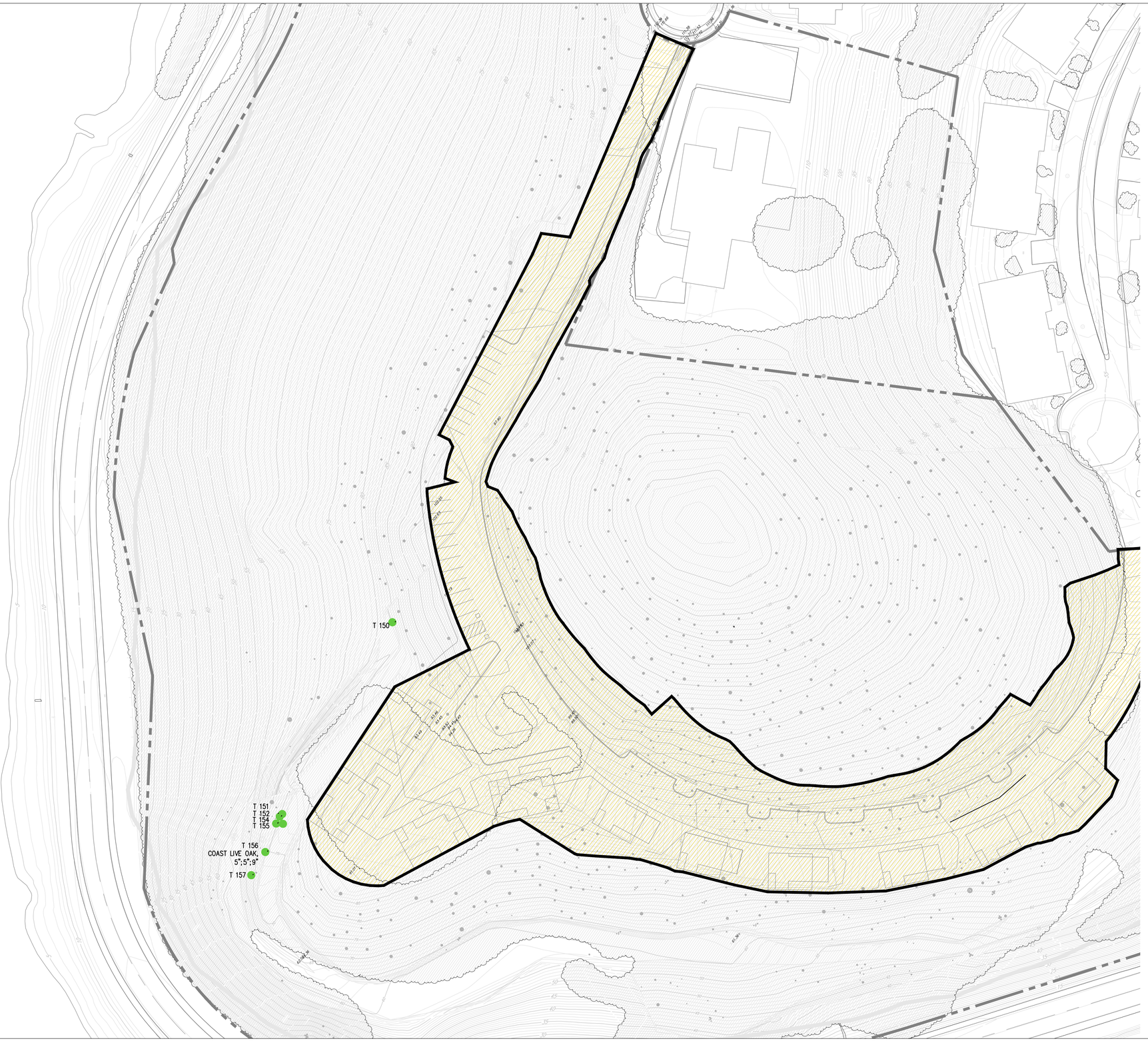
THE SEMINARY
201 SEMINARY DRIVE
MILL VALLEY, CA 94941

FOREST MANAGEMENT AND TREE REMOVAL PLAN
WEST
1" = 40'

BLDG. TYPE
00

SHEET NO.
L3.23



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- EXISTING TREE CANOPY
- SEE ARBORIST REPORT FOR DETAILS

0 20' 40' 80'

PROJECT NORTH

NORTH COAST LAND HOLDINGS LLC
201 Seminary Drive
Mill Valley, CA 94941

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swa

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THE SEMINARY
201 SEMINARY DRIVE
MILL VALLEY, CA 94941

FOREST MANAGEMENT AND TREE REMOVAL PLAN
WEST
1" = 40'

BLDG. TYPE
00

SHEET NO.
L3.24

Appendix I

Soil Engineering Consultation

DUE DATE:	**Contract:**	**WET?**	
Mail / Hand Carry / Pick Up / Fax		**Time Due:**	
DATE RECEIVED FOR DRAFTING			
Rough Drafted		**Re-roughed**	

.

December 1, 2021

Job No. 2485.1.3

North Coast Land Holdings, LLC
2350 Kerner Boulevard, Suite 360
San Rafael, CA 94901
Attention: Bruce Jones
bjones@gatecapital.cc

Report
Soil Engineering Consultation
The Seminary
201 Seminary Drive
Mill Valley, California

This letter presents the results of our soil engineering consultation and preliminary plan review for the proposed mixed-use development at The Seminary in Mill Valley, California. The site address is 201 Seminary Drive. A soil investigation was performed for a previously planned development on the site by Donald Herzog & Associates, Inc. (DHA), and the results were presented in their report dated August 31, 1979. DHA updated that report and provided additional information in a geotechnical reconnaissance for master plan report dated May 19, 1981. A preliminary geotechnical design report for the currently proposed development was prepared by Purcell, Rhoades & Associates (PRA), and the results were present in their report dated June 8, 2016. In those reports, the general conclusions indicate that, from a

geotechnical engineering standpoint, the project site is feasible for the proposed construction. Specific recommendations included criteria for site grading and drainage installation to upgrade areas of geotechnical concern used in conjunction with spread footings or drilled pier foundations.

The subject property is located on the Strawberry Point Peninsula in southern Marin County, California. The project site consists of several parcels that encompass a total area of about 127 acres in moderately to steeply sloping, hillside terrain. For ease in description, the project site can be divided into seven general areas of development (presented clockwise from the north):

1. Schuck Drive multi-family residences.
2. Residential care facility.
3. Fitness and daycare center.
4. Administration Building addition and new maintenance building at campus.
5. Mission Drive residences.
6. Chapel Hill residential buildings.
7. Seminary Point duplexes and single-family residences.

The planned new structures will be one-, two-, and/or three-story, wood- and steel-frame structures with concrete slab-on-grade floors or wood floors supported on joists above grade. A portion of the structures in Areas 1, 2, and 6 will utilize below grade parking levels, with retaining walls at their perimeter retaining planned cuts. The buildings will be served by new

asphalt-paved driveway and parking areas and underground utilities. Green Lane, a new public street, is also planned in Area 1 extending between the existing Reed Boulevard and Schuck Drive.

CONSULTATION

We have reviewed the 1981 DHA report and the PRA report and pertinent geologic information in our files. Our engineers also performed a site observation of the planned building areas on October 28, 2021. Based on our review and the surface features exposed, we judge that the conclusions and recommendations in the PRA report would still be applicable to the proposed construction, and the project site is suitable for the proposed mixed-use development. In addition, we are pleased to accept the responsibility as project soil engineer.

In general, we anticipate that conventional grading techniques can be used to mitigate the areas of concern that were identified in previous investigations. The mapped slope instabilities/areas of weak soil were generally less than 10 feet in depth and can be remediated with keyways and benching. Site grading can also be performed to underlie planned foundations with properly compacted, nonexpansive fill to allow for shallow spread footings and conventional slab-on-grade floors. In sloping areas where structures with raised wood floors are planned, such as the two lots in Area 5, we anticipate that drilled piers would likely be utilized. Specialized grading and deep foundations (such as driven piles) are not anticipated at this time.

Plan Review

Preliminary plans prepared by CSW/Stuber-Stroeh Engineering Group, Inc. have a latest revision date of January 31, 2020 and indicate that a majority of the planned structures will be located in areas of cut. The materials generated from the planned cuts will be placed as fill in the playing field area in the west portion of the site. Surface drainage will generally be collected in storm drain systems and treated on-site in planned bioretention areas. New paved areas will consist of asphalt concrete and aggregate base over compacted soil subgrade. Based on our plan review, we believe that the materials and methods indicated on the preliminary grading plans are in general conformance with our recommendations and the intent of the recommendations in the PRA report.

Supplemental Services

As stated in the PRA report, additional subsurface exploration work should be performed during the final design process once the specific areas of development are finalized and planned finished grades are established. Based on our review of the subsurface information provided in the reports reviewed, we judge that additional test borings and/or test pits are needed in Areas 1 through 4. We can provide recommendations for subsurface testing in these areas upon request.

We should review final grading and foundation plans for conformance with our recommendations. During construction, we

recommend that the site grading work be observed and tested by the soil engineer to verify that the actual conditions encountered are as anticipated and to modify our recommendations, if warranted. Field and laboratory tests should be performed to ascertain that the specified moisture content and degree of compaction are being attained. We recommend that the footing excavations be observed by the soil engineer to verify that the actual conditions encountered are as anticipated and to modify our recommendations, if warranted. We should observe pier drilling operations to verify that suitable bearing materials are encountered and to modify our recommendations, if warranted.

We trust this provides the information needed at this time. If you have questions regarding this matter, please do not hesitate to contact us.

Yours very truly,

REESE & ASSOCIATES

Joseph M. Mauney
Civil Engineer No. 85560

Jeffery K. Reese
Civil Engineer No. 47753

JM/JKR:nay/ra/Job No. 2485.1.3
Copies submitted: 1

cc: CSW/Stuber-Stroeh Engineering Group, Inc./Attention: Al Cornwell/acornwell@cswst2.com

Appendix J

Preliminary Geotechnical Design Report

PRELIMINARY GEOTECHNICAL DESIGN REPORT
The Seminary
201 Seminary Drive
Mill Valley, California

for

NORTH COAST LAND HOLDINGS, LLC
PROJECT NO. 14-160/7694-01
JUNE 8, 2016

Purcell, Rhoades & Associates

Purcell, Rhoades & Associates, Inc.

Geotechnical, Environmental, & Materials Testing

3496 Buskirk Avenue, Suite 100
Pleasant Hill, CA 94523

Tel (925) 932-1177
Fax (925) 932-2795

Mr. Andres Orphanopoulos
North Coast Land Holdings, LLC
2350 Kerner Boulevard, Suite 360
San Rafael, CA 94901

No. 14-160/7694-01
June 8, 2016

Subject: **PRELIMINARY GEOTECHNICAL DESIGN REPORT**
Proposed The Seminary Complex
201 Seminary Drive
Mill Valley, California

Mr. Orphanopoulos:

At your request, we are pleased to provide this Preliminary Geotechnical Design Report for the proposed redevelopment of the existing Golden Gate Baptist Seminary facility, in Mill Valley, California. Based upon review of drawings prepared by Mark Cavagnero Associates, Architects (MCA), and CSW/Sturber-Stroeh Engineering Group, Inc. (CSW-ST2), it is proposed in certain areas to raze existing structures and redevelop with new buildings, and in other areas have new construction. It was noted during review of proposed site plans that additional areas of new construction are proposed in areas outside of the limits of PRA's Stage 1 Feasibility Study. The purpose of this study is evaluate the proposed site development using the existing subsurface exploration, laboratory testing and engineering analysis performed to date, in order to provide recommendations to be considered in the design and construction of this project. This Preliminary Study also recommends supplemental borings and/or test pits for those areas proposed for development that were lacking specific subsurface information from prior investigations. Based upon the review of prior studies and current site review leading to the preparation of this Preliminary Geotechnical Design Report, it is our professional opinion that the site is suitable and the proposed development feasible from a geotechnical viewpoint provided the recommendations in this report are included in the design and implemented during construction of the project.

We appreciate this opportunity to be of service on this project. Please contact this office with any questions.

Very truly yours,

PURCELL, RHOADES & ASSOCIATES

Daniel J. Rhoades, P. E.
Principal
G. E. -716, exp. 06-30-17

Dean Affeldt, CEG 1108
Principal
CEG-1108, exp. 07-31-17

ida/N769401.1

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SUMMARY OF CONCLUSIONS

1. The planning areas are underlain by variety of subsurface conditions, ranging from shallow bedrock to moderately deep earthflow deposits.

2. In general, the discussed planning areas are feasible for development using conventional earth moving equipment, installation of surface and subsurface drainage controls, and typical foundation construction. Foundation types include slab on grade construction with perimeter footing foundations and pier and grade beam foundation systems.

3. Prior studies identified several areas of deep colluvial soils, seepage and earthflow deposits that may impact the proposed site development and will need mitigation. PRA has not been able to confirm that the proposed mitigation indicated on Figure B-2 of Appendix B have been installed, with the exception of the reconstructed slopes designated with "R" on Figure B-2. Figure 5, Constraints Map and Approximate Mitigation Limit indicates those features that are in close proximity to the proposed developments that may require mitigation using combinations of site grading, drainage controls, and retaining walls.

4. The planning areas propose a variety of building type developments that provide for cuts and fills with retaining walls. Recommended foundation types will vary depending upon the site conditions, building types and proposed grading. It will be required that PRA review specific development plans for the various designated planning units in order to discuss with Design Professionals the specific geotechnical requirements, including foundation type, for each specific unit. It is recommended that PRA prepare Geotechnical Plan Review documents for the specific planning area under consideration in order to verify the geotechnical recommendations of PRA have been effectively incorporated into design.

5. Representatives of PRA must be present during site demolition, mass grading, and foundation excavations to observe exposed site conditions, perform compaction testing to determine relative compaction of fill, and verify foundation excavation depths into acceptable, non-yielding material. PRA reserves the right to provide supplemental recommendations at any time during planning and construction.

INTRODUCTION

The site area is within the Stawberry Point peninsula surrounded by Richardson Bay (see Figure 1, Site Location Map). The site topography has generally east-west trending with natural north and southward facing slopes that vary from 2-1/2 horizontal to 1 vertical (2-1/2:1, H:V) to 4:1. There are also localized flat knolls and marshland areas within the campus. The existing landforms and structures at this site are shown on Figure 2, Site

Aerial Photo. The currently proposed development includes several areas of multi-family residences, an athletic center, auditorium, a play field, a new class room, a tennis court, and a few new roads to access some of these facilities. This development includes the demolition of several existing structures and replacement with new structures. Site demolition and development areas are indicated in Figure 3, Site Demolition Plan, with the layout of proposed new structures and designated planning areas indicated on Figure 4. Some of the proposed new facilities are outside of the previous area of study by PRA, and it is noted later in this report where additional subsurface investigation by exploratory borings and/or test pits are recommended.

PUBLISHED DATA

In review of geotechnical information in our files and in the Marin County web site, we noted the following preliminary information:

1. the site is not traversed by a Special Studies Zone for potentially active faults
2. the site area is mapped as having an expansive soil potential of low likelihood to nil
3. a high liquefaction potential is mapped for the alluvial areas, and very low liquefaction potential is indicated for hillside areas
4. a flood potential was not indicated in the location of the proposed focused study areas

The campus has been the subject of prior geotechnical investigations and site work to improve slope stability. Prior studies prepared by Donald Herzog & Associates that were presented to our office for review and incorporation into this study are as follows:

August 31, 1979, Report - Soil Investigation, Golden Gate Baptist Theological Seminary, Mill Valley, California: Job No. 994.1.

March 22, 1982, Report - Geotechnical Reconnaissance for Master Plan, Golden Gate Baptist Theological Seminary, Mill Valley, California: Job No. 994.1.

May 19, 1982, Report - Geotechnical Reconnaissance for Master Plan, Golden Gate Baptist Theological Seminary, Mill Valley, California: Job No. 994.1.

August 10, 1982, Preliminary Report - Anticipated Remedial Measures, Golden Gate Baptist Theological Seminary, Strawberry Point, California: Job No. 994.1.

PRA performed supplemental borings for preparation of the 2010 Stage 1 Feasibility Study. The site plan showing the boring locations and the boring logs for PRA's Stage 1 Feasibility Study are presented in Appendix A of this report. The Herzog geologic map, that includes test pit and boring locations, a mitigation measures map, and the Herzog test pit and boring logs are presented in Appendix B.

SITE CONDITIONS

Site Geology

The general site geology has been previously described in the March 22, 1982 Donald Herzog & Associates report, with their Geologic Map presented in Appendix B, with their findings summarized as follows:

Regional geology maps show the site as predominantly underlain by Franciscan Complex melange, which is a unit that consists of "scrapes" of different rock types that have been mildly metamorphosed. There are blocks of very hard "greenstone" surrounded by siltstone and sandstone units. The western perimeter of this peninsula has inlets that have been mapped as having artificial fill placed over bay mud.

Rock outcrops within the area are sparse, except where exposed in cut slopes. The bedrock of the area is primarily composed of interbedded sandstones and shales of the Mesozoic-aged Franciscan Assemblage. The sandstone typically varies from light to dark brown in color; massive to thin bedded; closely to moderately fractured; moderately hard; weak to moderately strong; and moderately to deeply weathered. Shales vary from thinly laminated to very thinly bedded; dark gray in color; closely fractured to sheared; friable to weak; low to moderately hard; and moderately to deeply weathered. Other sparsely occurring Franciscan rocks include chert, metagraywacke sandstone and serpentinite. The chert is thin bedded; variable in color; moderately to closely fractured; hard; strong; and moderately weathered. It may vary from highly altered meta(?) Chert to argillaceous chert. Massive blocks of metagraywacke occur sporadically in the well-bedded sandstone and

shale, primarily in areas where the rocks appear distorted or sheared. Serpentinite is also rare and crops out as a small block in the southwest corner of the area.

The Franciscan rocks within this area display a localized uniform structural orientation. The sandstone, shale and chert commonly trend in a northwest direction, and dip moderately to steeply to the northeast. Strikes vary from North 40 degrees West to East-West, and dip northerly from 27 to 85 degrees. Zones of shearing, where the rocks are highly fractured, altered and structurally disrupted, are evident in some areas. However, these shear zones appear to be relatively small and do not significantly change the localized bedding orientation. The northwest portion of the area was previously characterized as a "melange" zone. However, the uniform orientation of the chert, shale and sandstone, as well as the fact that the chert displays a graded depositional contact with the shale and sandstone, suggests that this area is not as sheared and deformed as other typical Franciscan melange zones in the Coast Range geomorphic province.

Quaternary deposits in the area include residual soils, colluvium, landslide debris, bay mud and fill material. Soils may vary from light to dark brown sandy or clayey silts to silty clays. They are medium stiff to stiff, and moist to wet. Soil depths may vary from less than 6 inches to over 6 feet. The soils on all natural slopes are undergoing slow downslope transport in the form of creep, and the distinction between residual in-place soil and colluvium is often difficult to define.

Landslides, in the form of shallow earthflows (less than 10 feet deep), are common on natural slopes throughout the area. Flows are characterized by well defined headwall scarps, hummocky topography, lobate or delta-shaped masses near the toe of the slide, and seepage zones. The earthflows appear to be shallow seated and restricted to the unstable soils overlying the bedrock.

At the time of the March 22, 1982 DHA report, no new large scale earthflows were observed, and the extent of the slides that had been mapped in 1979 did not significantly increase as a result of the January 1982 record storm event. A few debris slides and

slumps were noted by DHA during their field investigation. Those slides were described as being of small extent (several tens of square feet) and restricted to steep cut slopes and unstable fills, with most of the failures appearing to be recent as a result of the January 1982 storm event.

It is unsubstantiated that the majority of earthflows, landslides and colluvial filled swales identified by DHA were mitigated per the recommendations of the referenced August 10, 1982 report for "Anticipated Remedial Measures", and as shown on DHA's Plate 1, "Recommended Mitigation Measures", provided in Figure B-2 of Appendix B of this study; PRA has not been able to independently confirm the presence of these mitigation measures. An exception are the reconstructed slopes designated as "R" on Figure B-2 in Appendix B, located on the south facing slope between upper and lower Chapel Drive. This slope does appear to be reconstructed, but PRA has not received any documentation of the observation and testing services provided by DHA for this reconstructed slope, nor of their observations for the other mitigation measures recommended in their report. The areas of weak soil from the Herzog map is also included as part of the Constraints Map and Approximate Mitigation Limit (see Figure 5) for this project.

Bay mud is of limited extent and restricted to areas in the southeast and west-central portion of the site. This material typically is an organic rich silt or clay of low strength and high compressibility. The bay mud deposit in the west-central portion of the campus area has been covered with fill and is not exposed at this time.

Fills are common throughout the area and generally consist of a heterogenous mixture of local sandstone and shale derived from previous site excavations. PRA has not received any documentation regarding the compaction of fills identified at this site.

Site Seismicity

The subject property, like all properties in the San Francisco Bay Area, is situated in a very seismically active region. The following statements summarize the potential impacts of the seismic setting upon development of the subject property.

Based on an analysis of the historic earthquake records of the active faults, published and unpublished data on potentially active faults and the geographic relationship between the subject property and the faults of the San Francisco Bay region, it is reasonable to conclude that the major Bay area fault systems have the greatest potential for adversely impacting the proposed development.

A coalition of scientists from the U. S. Geological Survey, Southern California Earthquake Center, and the California Geological Survey prepared the Uniform California Earthquake Rupture Forecast (2015). Data presented by this group estimates the chance of one or more large earthquakes (Magnitude 6.7 or greater) in the San Francisco Bay region within the 30 year time period between 2014 and 2043 to be approximately 72 percent. In that same time period, the chance for a magnitude 6.7 or greater earthquake on the Concord, Calaveras, Hayward, and San Andreas faults is 6.8, 7.4, 14.3, and 6.4 percent, respectively.

The site is not within a Special Studies Zone for active faults. A list of pertinent active faults, their distance, expected moment magnitude, and estimated mean peak ground acceleration (PGA) is provided below:

FAULT	DISTANCE (Miles)	MOMENT MAGNITUDE[1]	ACCELERATION (g)[2]
San Andreas (Northern)	6.8	8.0	0.50
San Gregorio	8.5	7.4	0.26
Hayward	10.9	7.3	0.20
Rodgers Creek	16.5	7.3	0.15
Point Reyes	18.1	7.0	0.12
West Napa	23.7	6.6	0.08
Concord- Green Valley	25.5	6.6	0.07
Calaveras	26.0	6.9	0.09
Greenville	31.3	6.9	0.08

(1) Estimated maximum moment magnitude from CalTrans Fault Database 2012.
(2) Mean peak horizontal ground acceleration averaged from Boore, Joyner, and Fumal (1997).

The specific hazards associated with active faults can be confined to ground shaking and ground failure due to earthquakes. Since there is no mapped active fault recognized by the California Geological Survey as crossing the site, the hazard for surface rupture through the subject site is unlikely from known active faults of the region. The subject site lies within the San Francisco Bay Area, a region of high seismic activity. The probability is very high for a major earthquake to occur in the Bay Area within the economic lifetime of the proposed structures. The seismic risk to a structure depends on the distance from the epicenter; the characteristics of the earthquake; the geologic, groundwater, and soil conditions underlying the structure and its vicinity; and the nature of the construction.

The effects of seismically-induced ground shaking at the subject property resulting from a large magnitude (6.0 or greater) earthquake on any major fault within the San Francisco Bay region can be estimated from accounts of the effects which were described shortly after the 1906 earthquake, magnitude 8.3 with an epicenter located between San Francisco and Marin Counties. Studies by Lawson (1908) and Borcherdt, et al (1975) indicate that the highest ground shaking intensities (i.e., very violent) occur within 1500 to 2000 feet of the master trace of the San Andreas fault, and that violent ground shaking generally occurs at sites that are within 1 mile of the master trace. Furthermore, sites situated between 1 and 3 miles of the master trace would likely experience very strong ground shaking intensities. Therefore, in the event of a large magnitude earthquake on the noted Bay Area faults, it is reasonable to assume that the subject property will experience strong to very strong ground shaking. It should be emphasized that this estimate is based on a small number of field observations in a region that was sparsely populated during the 1906 earthquake on the San Andreas fault.

Since these are estimates, and they are based on a small amount of data, they should be used as a general guide to reflect future ground shaking intensities. Nevertheless, we believe that it is reasonable to conclude that any structures constructed on the subject property should be expected to experience very strong ground shaking in the event of a

major earthquake on active faults within the San Francisco Bay region.

Rather rough quantitative measurement of the dynamic characteristics of an earthquake can be estimated for the proposed structure. This estimate is based upon the attenuation methods advanced by Campbell (1997), and Boore, Joyner and Fumal (1997), for estimates of ground motion characteristics expressed in terms of acceleration of gravity. Based upon this attenuation relationship, a maximum moment magnitude on the San Andreas fault would result in an estimated mean peak ground acceleration of approximately 0.5g. For comparison, the interactive web site of probabilistic seismic hazards prepared by the U. S. Geological Survey indicates that the peak ground acceleration value that would have a 20 percent chance of being exceeded in a 50 year period is approximately 0.77g.

The peak values of ground acceleration represent a single moment acceleration. Ploessel and Slosson (1974) indicate that the repeatable high ground acceleration value for epicenters within 20 miles of a site would be approximately 65 percent of the peak value shown above.

The local building codes and current CBC recommendations reflect the design parameters for mitigation of earthquake conditions. The appropriate code should be utilized for minimum design standards based upon the particular features of the structure and the recommended minimum seismic load factors.

Liquefaction Potential - General

Liquefaction occurs when loose, saturated, granular deposits or low plasticity cohesive deposits lose strength in response to increased pore pressure during cyclic seismic loading. A regional assessment of liquefaction potential within the San Francisco Bay area was conducted by representatives of the U. S. Geological Survey (Witter et al, 2006). In this assessment, the central play field area, the westerly shoreline of the Seminary Point, and the northern border of Seminary Knoll were mapped as alluvial areas with either a High, or Moderate Liquefaction Susceptibility.

Herzog logged three exploratory borings in the western northern half of the playfield area, and determined that the materials encountered either consisted of cohesive soils not susceptible to liquefaction or shallow bedrock materials.

Tsunami Hazard

The west-central portion of the site area was previously identified as within a potential tsunami runup area by Ritter and Dupre (1972), but Herzog (1982) indicated that this interpretation was in error, and this area would not be impacted by tsunami. A 2009 map issued by the California Geological Survey shows the shoreline of Strawberry Point having a potential for being inundated by a tsunami (see Appendix A, Figure 4, Tsunami Inundation Map). This map indicates that only the low lying elevation immediately adjacent to the shoreline, and the low lying elevation between Silva Island and the northwest corner of the site as being subject to potential inundation.

SITE EXPLORATION AND LABORATORY TESTING

Site Exploration

Field exploration of the site during the 2010 Stage 1 Feasibility Study by PRA consisted of logging and sampling of eight hand-excavated test probes to a maximum depth of 5 feet below existing grade on April 20 & 22, 2010, and ten exploratory borings, up to a maximum depth of about 18-1/2-feet below existing grade using either a truck-mounted Mobile B-24 drill rig or a portable, Minuteman rig on May 20, 2010. Please see Appendix A, Figure 5, Site Aerial Photo and PRA Boring Locations, for exploratory test probe and boring locations.

Relatively undisturbed soil samples for laboratory testing were recovered in a 2.5-inch outside diameter (OD) California sampler or in a 2-inch OD split spoon sampler driven by a 140-pound hammer free-falling 30 inches. The number of blows applied to advance the sampler was recorded for each 6 inches of penetration and then converted to Standard Penetration Test values and recorded on the Exploratory Boring Logs.

Logs describing the material encountered in the test probes and borings were recorded in the field by an engineer from this office and are presented in Appendix A, as Figures 6 through 23.

Laboratory Testing

Laboratory testing was conducted on selected borehole samples to obtain data on density, moisture content, unconfined compressive strength, Atterberg limits, and classification of the soil. Test results are shown on the Exploratory Boring Logs.

DESIGNATED PLANNING AREAS

Figure 4 shows designations for the various planning areas for this proposed development.

Area 1 Academic Campus Planning Area

Area 1 identified on Figure 4, includes a new athletic center and playing field on a central flat area between Hodges and Gilbert Drive, the existing academic and administrative buildings, cafeteria, and library located upon an eastern ridge area, and proposed new student center, classroom, tennis courts, and auditorium.

The proposed new athletic center and playing field area was explored by Herzog Borings 27, 28, and 29. These borings were located in the area of the athletic center and show the site area is covered with fill consisting of sandy, and clayey silt, a gravel, with relatively shallow lying (estimated as 7 to 15 feet below existing ground surface) shale, siltstone, and sandstone bedrock. The southwest facing hill slope east of this flat area is indicated in the Herzog mitigation map as having two shallow colluvial zones. No clean outs, pipe, or discharge point were observed in this area to confirm if the subdrain was installed.

The proposed new student center is located between the existing cafeteria and library. Herzog Borings 1 through 7 were drilled in the area now covered with the library. These borings show a very dense, weathered sandstone about 1-1/2- to 2- feet below the ground surface.

In the area of the proposed new class room and the auditorium, PRA had drilled Borings B-9, and B-18. This area is an elevated knob of land that had been previously graded that is referred to as Chapel Hill. Some fill was observed along the northern periphery of the flat pad. This site was explored with a B-24 drill in Boring B-9, and later with Boring B-18. B-9 was drilled in approximately the center of the knob and encountered very dense sandstone and siltstone bedrock at the surface that resulted in refusal to drilling at a depth of 1 foot below grade. Boring 18 was later drilled on the flank of this knob, near the proposed new classroom site, and encountered sandy silt with some gravel to a depth of 4 feet where a hard weathered sandstone was encountered. Boring was terminated at a depth of 8 feet below grade within very dense sandstone. Excavation for the amphitheater will require a dozer with hydraulic rippers to excavate this very dense sandstone and siltstone bedrock material.

The proposed tennis courts are located where currently Herring Drive extends southward from Storer Drive to the main parking facilities in a gap excavated in the ridge line. Grading will be needed to in-fill this gap to construct this tennis court.

Area 2 Reed/Storer/Shuck Planning Area

This area is located north of the intersection of Shuck and Storer Drives and west of Reed Boulevard, and is currently developed with residential units that will be demolished and removed (see Figure 3), and replaced with new residential units (See Figure 4) and the construction of a new Green Lane. Herzog drilled several borings (Borings 15 through 19) at the eastern portion of this planning area, and PRA also drilled Boring B-8 in the same area (See Appendix A, Figure 25). There is a narrow access path, "Lovett Lane" leading from Reed Blvd. to these existing dwelling units. This parcel has a small mudflow area which is evident by a disturbed area of 12 to 18 inches in thickness and approximately 60 feet in width (See Appendix A, Figure 25).

The exploratory borings within this sub-area determined that the site is covered by topsoil and residual soil overlying a sheared sandstone and shale bedrock. The depth to the bedrock material varied from approximately 2 to 8 feet below existing grade. The Reed

Blvd. road cut exposed a weathered sandstone and shale bedrock contact that was measured as having a strike of North 40^0 West, with a dip of 60^0 to the northeast. No free groundwater was encountered in these borings.

Area 3 Hodges/Shuck Planning Area

This planning area is a the north end of the site, and encircled by Hodges and Shuck Drive. This area is developed with residential units (See Figure 3), and these will be removed and the site developed with new residential units (See Figure 4). The currently developed portion of this planning area was not investigated by either Herzog or PRA, with the westernmost vacant area bordering Shuck Drive investigated by Herzog Test Pits 13, 14, and 15, and PRA Boring B-17 on the west (see Appendix A, Figure 24).

These explorations determined that within the Shuck Drive loop area, the test pits show a shallow earthflow overlying residual soil and colluvium, which is in turn underlain by a shale and graywacke sandstone. The depth to dense bedrock was determined in the test pits as varying from 4 to 6 feet below the existing grade. The PRA boring was advanced within the downhill loop of Shuck Drive and encountered a deep residual soil of clayey sand, sandy silt, and blue-gray silty clay overlying a siltstone bedrock at a depth of 11 feet below existing grade. The Herzog mitigation map (Appendix B, Figure B-2) indicated that a subdrain was proposed to be installed to a depth of approximately 6 feet within the earthflow. A representative of PRA reviewed the slope, but could not find clean outs, pipe or discharge points that would indicate that this subdrain was installed.

4. Dormitory Hill Planning Area

This area includes the existing dormitories on top of the flattened ridge line, and the slopes between this upper flat area and a flat area at the toe of the slope below the existing dormitories. It is proposed to demolish the existing dormitories (See Figure 3) and replace with a new upper playfield, a new road (Storer Lane), new residences on both the slope and lower flat area, and a new middle practice field on the lower flat pad. This area was investigated by Herzog exploratory Borings 8 through 14 on the upper pad, and by PRA test borings B-5, B-15, and B-16 on the lower pad.

The north side of the upper pad area is covered with a thin layer (1 foot) of sandy silt topsoil over either a mixture of sandstone and serpentine bedrock. Boring 10 midway along the upper pad encountered a brown sandy silt fill over a black-brown sandy silt topsoil over a orange brown sandstone at a depth of approximately 6 feet below existing grade. The southern portion of the upper pad encountered a shallow bedrock profile at a depth of 1 foot below grade in Borings 11 and 12, with Borings 13 and 14 encountering from 3 to 6 feet of fill along the western edge of the pad overlying either a red brown or black brown sandstone.

The lower pad area is located within the existing playground and basketball court area at the toe of a slope. The PRA borings encountered a deepening soil profile from the south to north end of this lower pad. The northern end as explored by Boring B-15 encountered a moderately deep soil profile consisting of sandy clay fill with siltstone particles to a depth of 6 feet below grade, underlain by a large siltstone "floater" within a matrix of silty clay, then transitioning to a sandy clay with sandstone rock fragments. The depth to weathered bedrock was determined as approximately 17 feet, with groundwater also encountered at this depth. Approximately midway between the northern and southern portions of this lower pad, Boring B-5 encountered a mixture of silty clay with siltstone and sandstone fragments to a depth of 2-1/2-feet, with water seepage noted at this depth. Boring B-16, located at the southern end of this lower pad encountered a very dense orange brown sandstone at the surface. The Herzog Geologic Map (Appendix B-1) had mapped the slope above the northern portion of this lower pad as an area of poor drainage, and several seepage areas were mapped on the slope. This would be consistent with the wet areas noted in Borings B5 and B15. The Herzog Mitigation Map (Appendix B-2), indicated that a subdrain was proposed just below and along the break in slope between the uppermost pad area and the intervening slope down to the lower pad (See also Figure 25). No clean outs or other indications of this subdrain were observed during our site review.

5. Shuck Drive Knoll Planning Area

This undeveloped area is located at the extreme northwestern corner of the campus. It is our understanding that a new access road (Shuck Knoll) would be constructed across a swale from Shuck Drive to a knoll of very hard greenstone rock. The center knoll area would be for construction of the Shuck Knoll loop road, with residential units developed around the periphery of the knoll on descending slopes.

The central western knoll area around elevation 104.2 is underlain by shallow, dense bedrock materials consisting of sandstone, claystone, shale, and chert, surrounded by swales filled with colluvium, and shallow earthflow and mudflow materials to a maximum depth of 10 feet in thickness. The central knoll area was investigated by Herzog in Test Pits 16 through 17, and 20, and by PRA Borings B-6, B-7, and B-17 (See Appendix A, Figure 24). The test pits and borings indicated shallow lying bedrock materials in the knoll, with bedrock depths in these data points ranging 1 to 4 feet below existing grade.

Of the swales immediately surrounding the knoll, two are shown on the Herzog mitigation map (Appendix B, B-2) as having a subdrain proposed to mitigate potential slope movement. The approximate locations have been transferred to the Site Map on Appendix A, Figure 24. One of these swales is located at the southeastern portion of the knoll and would be traversed by an access road from Shuck Drive to gain access to the knoll. This swale has approximately 4 feet of overburden. No clean outs, pipe, or discharge points were observed of these proposed Herzog subdrains.

The Shuck Drive loop area has a large shallow earthflow that begins from the south facing slope at the northern limits of the Golden Gate Baptist Theological Seminary property that flowed down past the upper loop of Shuck Drive, through the proposed development area, over the lower loop of Shuck Drive and continuing south past the southern limit and onto the adjoining property. This area is covered with trees and brush. The Herzog Mitigation Map (Appendix B, B-2 shows a subdrain proposed within the Shuck Drive loop area that terminates at the lower end of Shuck Drive. No clean outs or discharge pipes were observed in the area shown in the Herzog Mitigation Map. Three test pits were excavated

by Herzog (TP13, 14, and 15) and one boring was drilled by PRA (B-17), as described previously for the No. 3, Hodges/Shuck Planning Area.

Figure 4 shows proposed development for this area along the southeast face of the slope below the knoll. This slope has several small erosion gullies and shallow mudflows that will require shallow grading and drainage mitigation for development. Pier and grade beam foundations would likely be required for development on this slope. The western-most unit that wraps around the knoll lies at the headward edge of a previously mapped mudflow area that had some shallow mitigative grading. This area would likely require additional grading for site development.

6. Chapel Drive ("Seminary Point") Planning Area

This focused study area is located at the southwestern most portion of the campus. The site area consists of a large knob at the western end of a spur ridge, with descending slopes to Richardson Bay. The site is currently developed with three structures (Tichenor Village) that will be demolished (See Figure 3) and replaced with multi-family residential units on the flanks of this spur ridge (See Figure 4). There are no exploratory borings or test pits by Herzog in this area, and PRA hand-excavated Boring B-1 on the west-facing slope below the existing structures (See Appendix A, Figure 28). Boring B-1 encountered shallow lying, dense siltstone bedrock.

North of Tichenor Village, there are several swales that contain slopewash, colluvium and earthflow deposits. The Herzog Mitigation Map (Appendix B, B-2) indicates that only surface drainage and a few subdrains were proposed within these deposits. No clean outs, pipe, or discharge points were observed to verify the presence of these subdrains.

DISCUSSION

Based upon review of referenced documents, site review, laboratory testing and exploratory boring program, it was determined that the proposed Seminary development has a variety of subsurface conditions present that could impact the various identified planning areas. Site conditions range from surface bedrock outcrops in cut slopes to fills, alluvium, colluvium, bay mud and earthflow deposits.

The bedrock materials underlying the site are predominantly sandstone and shale (i.e., siltstone and claystone), which is the "matrix" within the melange unit of the Franciscan Complex. The sandstone and shale units are in contact with more exotic rocks of the Franciscan Complex, which include graywacke sandstone, shale, chert, and serpentinite. The bedrock units generally display a localized uniform structural orientation commonly trending in a northwesterly direction (North 40 degrees West to East-West) with a dip moderately to steeply to the northeast (17 to 85 degrees to the North). While localized shearing of the bedrock units was observed, the generally uniform structural orientation indicates that the area may not be as deformed as other typical Franciscan melange terranes within the Coast Ranges. The stability of cut slopes cut into bedrock are generally impacted by weak zones or intersecting structural discontinuities, such as bedding and joints. In general, bedding measurements indicated northeasterly dipping bedding, and therefore, more concern would be for northeasterly facing cut slopes. In review of the grading plans, an area with a potential northward facing cut slope would be during excavation to develop the auditorium. This excavation would need to be reviewed during grading to determine if adverse bedding or other intersecting discontinuities are present that would have to be mitigated during construction with shoring or temporary rock bolting.

Quaternary soil deposits at this site include topsoil, residual soils, colluvium, earthflow landslide debris, and fill material. The depth of topsoil and residual soil deposits range from a few inches to several feet in thickness. Soil deposits with a more clay like character tend to be expansive and on slopes incur slope creep. Earthflow landslide deposits range in thickness from a few feet up to on the order of 10+ feet. The Recommended Mitigation Measures Map in Appendix B, Figure B-2, indicated that at that time several of the earthflow deposits were proposed to be mitigated by the installation of a subdrain penetrating through the soil materials and into the underlying bedrock. This office has not received any report documenting the installation of the mitigation measures depicted in Appendix B, Figure B-2, but the slope condition observed between upper and lower Chapel Drive suggests that this slope was reconstructed, as indicated by an "R" on the mitigation measures map. During development of the various planning areas, where construction lies near and/or within these mitigation areas, such as indicated on the aforementioned

Appendix B, Figure B-2, and on the Constraints Map and Approximate Mitigation Limit (Figure 5), these areas would need mitigation to possibly requiring their removal and replacement with compacted, engineered buttress fills. Other mitigation measures, such as drainage controls and retaining walls may also be considered based upon the specific development area and site conditions.

Seepage is common on several slopes, particularly after seasonal rains, and there are some areas of poor surface drainage throughout the site. Several surface drain inlets and v-ditches were observed at the site that represents past efforts to mitigate surface drainage issues. Development of the proposed focused study areas will also require site specific drainage mitigation measures for both surface and subdrainage conditions. These mitigation measures would direct intercepted surface and subsurface water to controlled municipal facilities.

While indications of bedrock faults were indicated by sheared rock, there is no indication for the presence of an active earthquake fault to be present within the Campus. The site, as is expected for other areas within Mill Valley, would be expected to be impacted by seismic ground shaking during earthquakes on active faults within the San Francisco Bay region. A potential for tsunami run-up in low elevation shoreline areas is present, but these would not impact proposed development within the identified planning areas. A potential for liquefaction is indicated on published regional maps, but site specific subsurface investigations indicate a low potential for liquefaction in the suggested likely area within the play field at the site. The proposed planning areas are not underlain by subsurface materials that would be subject to liquefaction.

CONCLUSIONS

Based upon the results of the 2010 Stage 1 Feasibility Study, and this subject study, it is our opinion that the proposed developments are geotechnically feasible provided the recommendations of this report are incorporated into the design and implemented during construction. The proposed development has multiple design scenarios consisting of cuts and fills with retaining walls. Due to the various proposed construction scenarios and site

conditions, this office must review specific development plans for the respective development areas in order to provide detailed geotechnical plan reviews as a means to provide site specific recommendations to be included in the design and construction of the various planning areas. Where proposed developments encroach near or upon the areas designated in the Constraints Map and Approximate Mitigation Limit (Figure 5), mitigation of these various areas would be accomplished by combinations of site grading, drainage controls and retaining walls.

The following are preliminary site conditions for consideration in the design and development for the various planning areas:

1. Academic Campus Planning Area

New construction is planned for a student center, classroom building, an auditorium, an athletic center and playing field. The student center is listed in the planning sheets as Building Type 8, which appears to be two levels and constructed upon a level pad with project east side excavated into the hill slope via retaining wall for the eastward extension of the second level.

The borings for this site indicate the presence of shallow lying bedrock, and the student center can be constructed upon a spread footing foundation system with a concrete slab on grade floor.

The class room building is listed as Building Type 5, which has two levels constructed upon two level pads with intervening retaining walls. There are no borings or test pits near this proposed development, but the elevation of the proposed classroom would indicate that weathered bedrock should lie at relatively shallow depth. It is our opinion that the structure can be supported upon a conventional spread footing foundation with slab-on-grade floor, with retaining walls supported upon a conventional footing with keyway.

The proposed auditorium is listed as Building Type 6, with cross sections showing grading with cuts up to 28 feet below currently existing grade to construct the basement scene

area. Multiple retaining walls are proposed to be constructed, with a maximum retained height on the order of 15 feet.

Subsurface exploration of the auditorium determined shallow, very dense bedrock was present, with refusal to drilling encountered with the truck-mounted B-24 drill rig at 1 foot below existing grade. The bedrock material encountered was a very dense sandstone and siltstone. Due to the fractured nature of this bedrock, it is believed that it is rippable using a dozer with hydraulic rippers. Due to the density of the bedrock, it is likely that a conventional footing foundation system with concrete-slab-on-grade floor would be used for this development. The excavation for this auditorium will create a northeasterly cut slope that will need to be reviewed for potential exposure of northeasterly dipping bedding plans and other intersecting discontinuities that may need to be mitigated during construction by shoring, including rock bolting of adverse rock features.

The athletic center proposed adjacent to Hodges Drive is a Building Type 7 with two levels on flat ground. The borings for this area indicated the presence of fill overlying a relatively shallow lying bedrock. Preliminary grading plans indicate a significant amount of fill is proposed for this flat pad area of on the order of 20 feet at the southern limits adjacent to Seminary Drive. Conventional grading can prepare this site for a conventional footing foundation with concrete slab-on-grade floor. Exploratory borings for this are indicate deepening soils within the proposed athletic field, and there are no borings at the toe of this proposed fill near Seminary Drive. The area next to Seminary Drive needs to be explored to determine if soft soils may be present at this location. It is presently anticipated that if soils, such as Bay Mud are encountered, it would be of limited thickness that could be removed and replaced with compacted engineered fill.

2. Reed/Storer/Shuck Planning Area

This area has several shallow mudflow areas, underlain by residual soils resulting from the weathering of the underlying parent bedrock (see Appendix A, Figure 25, and Appendix B, Figures B-1 and B-2). The depth to non-yielding bedrock in this area ranges from 2 to 8 feet below existing grade. Based upon the slope and site conditions, this planning area

can be developed with surface grading and drainage controls to correct the colluvium and earth flow areas, and then supported upon either conventional footing foundation system, or a pier and grade foundation system depending upon the different site conditions. The proposed residential development in this planning area consists of three building types (10, 11, and 12). The townhouse structures are three levels with different grading situations for each development. Some buildings will be on cut, while others will be constructed upon fill with transition areas between cut and fills beneath the building pad. While individual construction plans will need to be reviewed for more specific recommendations, in general, structures founded all in cut may be constructed using conventional footing foundation systems embedded in bedrock, while structures with small fills and transitions will likely require a pier and grade beam foundation system for both the cut, transition and fill zones to provide a uniform foundation system.

Additional exploratory backhoe pits would be needed to evaluate subsurface conditions in the southern portion of the existing south facing descending slopes in this area.

3. Hodges/Shuck Planning Area

The majority of this planning area is presently developed, except for the western-most portion. This western portion is located within the Shuck Drive "loop", and is underlain by an earthflow that extends from above upper Shuck Drive at the extreme northern limits of the Campus down through the site and into a lower swale into the adjoining property. Subsurface investigation of this earthflow deposit within the Shuck Drive loop indicates the thickness of this material to vary from 4 to up to 11 feet in thickness. Development of this portion of the focused study area will require a combination of site grading, drainage controls, and perhaps retaining walls to mitigate the earthflow deposit. Depending upon the final grade elevations, grading may be required to install a buttress engineered fill to final grade elevations. Due to the presence of earthflow material upslope of the upper loop of Shuck Drive, where a level catchment and buffer area is not provided between the structure and an uphill slope, a catchment wall may be necessary to protect against the potential for impact from uphill mudflows.

The eastern portion of this planning area is developed with both structures and parking facilities within a bowl-shaped topographic area. It is recommended that additional exploratory test pits and/or borings be excavated in this area to confirm subsurface conditions.

The proposed development scheme for this planning area includes seven different building types (20, 21, 30, 31, 32, 33, and 40), that include a variety of grading scenarios. The proposed development for the eastern portion of this planning area appears to be building basically at existing grade, while other areas show significant cuts for retaining walls constructed into the hill slope, and, in select areas, a fire lane and Green Lane traversing underground garages, and in other areas there is a mix of cut and fill with transitions between cut and fill beneath the proposed structure. A combination of site grading, drainage controls, and perhaps retaining walls will be needed to mitigate the earthflows, and where necessary, replacement with compacted buttress fills. Due to the variety of development scenarios in this planning area, while conventional footing foundation system may be used for buildings all on cut with embedment into non-yielding materials or bedrock to the acceptance of the Geotechnical Engineer, building scenarios with mix of cuts and fills and where foundations are within 10 feet of a downslope may need to be supported upon a pier and grade beam foundation system. During the geotechnical plan review, recommendations will be provided for specific foundation type and mitigation measures for the specific development area under consideration.

4. Dormitory Hill Planning Area

It is proposed to demolish the existing dormitories (See Figure 3) on the upper pad and replace with a new upper playfield. There is a descending south facing slope from this upper pad to a lower flat pad that will have residences on both the slope and lower pad area with a new road (Storer Lane) constructed on the slope and a new middle practice field on the lower flat pad. There is an descending slope from this lower pad area to the existing Shuck Drive. The geotechnical investigations for this area is indicated on Appendix A, Figure 25. Herzog's Boring 9 was located near the break in slope for the upper proposed residences and indicates a 1 foot fill underlain by a brown sandstone

bedrock. This figure also indicates a thin (3 foot thick) colluvial layer that needs to be removed during grading. Also indicated on Appendix A, Figure 25 is seepage areas on the intervening slope and poor drainage on the lower pad.

The proposed residential units on the upper portion of the sloping area will be developed with units of Building Type 51, while the lower portion of this slope, the lower flat area, and the descending slope to Shuck Drive will be developed with Building Type 50. The upper units will be constructed upon the slope with cuts and retaining walls, with some walls indicated as 20 feet in height. The new Storer Lane will be constructed immediately down slope of these upper units with fill and a short retaining wall indicated on the down hill side of Storer Lane. The lower units will also require cuts and retaining walls, and a sublevel parking area indicated. The development schemes for these Building Types indicate a mix of cuts and fills and retaining walls that will require more detailed review during a plan review for these units. Due to the variation of grading required for development of these units and the proximity of the foundations to sloping ground, it is believed that while bedrock may be exposed in several locations during grading, it may be necessary for these foundation units and retaining walls be supported upon a pier and grade beam foundation system to provide a uniform lateral support. During the geotechnical plan review, recommendations will be provided for specific foundation type and mitigation measures for the specific development area under consideration.

Grading is proposed to place a 2:1 horizontal to vertical fill slope upon an existing project north facing slope that descends to and will daylight into Storer Drive. This fill will extend across this north face to include in-filling the existing Herring Drive that presently extends across Storer Drive southward to the existing main parking area. Fill on the order of 15 feet in thickness is planned to in-fill this gap and tennis courts will placed upon this fill surface.

5. Shuck Drive Knoll Planning Area

This undeveloped area is located at the extreme northwestern corner of the campus. It is our understanding that a new access road (Shuck Knoll) would be constructed across a

swale from Shuck Drive to a knoll of very hard greenstone rock. The center knoll area would be for construction of the Shuck Knoll loop road, with residential units developed around the periphery of the knoll on descending slopes. The Building Type indicated for these units is Building Type 60. Extensive grading is proposed to reduce the height of the knob, with cuts and fills with retaining walls proposed. A sublevel garage structure is proposed to be constructed beneath the living units on the eastern side of the knoll.

The geologic conditions and the geotechnical explorations performed for this planning area are as indicated in Appendix A, Figure 24. The field exploration data points indicate the presence of shallow bedrock from 1 to 4 feet below existing grade, with the swales flanking the knoll containing colluvium and earthflows to a depth of approximately 10 feet below grade. While the grading may expose bedrock in much of the area, due to the mix of cuts and fills with retaining walls and the presence of the slope, it may be necessary for these units to be supported upon a pier and grade foundation system, and the retaining walls likewise supported upon piers. Combinations of site grading, drainage controls, and perhaps retaining walls will be needed to mitigate the nearby colluvial and earthflow zones indicated on the Mitigation Measures Map, and Constraints and Approximate Mitigation Limit map (Figure 5). Due to the complexity of these development types, supplemental recommendations may be needed. During the geotechnical plan review, recommendations will be provided for specific foundation type and mitigation measures for the specific development area under consideration. Grading of the central knoll area may encounter localized hard bedrock materials requiring dozers with hydraulic rippers. There is a possibility that there may be isolated, very hard bedrock units that would resist break-up with conventional grading equipment and require specialized machines for break-up or removal. Based upon the materials observed within the proposed focused study areas, this condition is expected to be limited. The grading contractor should be made aware of these conditions in order to plan appropriate equipment and methods.

6. Chapel Drive ("Seminary Point") Planning Area

The site is currently developed with three structures (Tichenor Village) that will be demolished (See Figure 3) and replaced with multi-family residential units on the flanks of

this spur ridge (See Figure 4). There are no exploratory borings or test pits by Herzog in this area, and PRA hand-excavated Boring B-1 on the west-facing slope below the existing structures (See Appendix A, Figure 28). Boring B-1 encountered shallow lying, dense siltstone bedrock.

North and south of Tichenor Village, there are several swales that contain slopewash, colluvium and earthflow deposits that are near the proposed development (see Figure 5) that would need to be mitigated through combination of site grading, drainage controls and perhaps retaining walls. The proposed units will be of Building Type 70, which indicates the units will have a mix of cuts and fills with retaining walls. Due to sloping areas, these units may need to be supported upon a pier and grade beam foundation system. During the geotechnical plan review, recommendations will be provided for specific foundation type and mitigation measures for the specific development area under consideration.

PRELIMINARY RECOMMENDATIONS

The following recommendations are provided for preliminary planning purposes. Supplemental subsurface investigations that include test borings and/or exploratory test pits, laboratory testing and engineering analyses will be required based upon the final grading and building layout scheme. Areas requiring additional subsurface exploration include test borings in the toe area of the proposed fill planned for the main play field in the Academic Campus Planning area; and backhoe test pits in the northern portion of the Hodges/Shuck Planning Area, and the descending existing southeast facing slopes of the Reed/Storer/Shuck Planning Area. The following preliminary recommendations are to be used for planning purposes and may be modified as subsurface conditions are exposed during the supplemental investigation and during grading operations at the time of site development.

Geotechnical Hazards

Risk of geotechnical hazards will always exist due to uncertainties of geologic conditions and the unpredictability of seismic activity in the Bay Area. However, in our opinion, based on available data reviewed to date, there are no indications of geotechnical hazards that

would preclude use of the site for the proposed development, provided the recommendations provided in this report and the required supplemental geologic and geotechnical evaluations prior to site development are incorporated into the planning, design and construction of the project. We reserve the right to modify our opinions based upon new or additional information obtained the required supplemental subsurface investigation or observations made during grading operations for site development.

CBC Seismic Parameters

We have reviewed the California Building Code (CBC) and our files to provide seismic shaking criteria for your structural engineer's consideration in the foundation design of the proposed development.

SEISMIC CRITERIA	VALUE
Site Class	C
Peak Ground Acceleration (2% probability in 50 years)	0.77g
S_s Short Period 0.2-second Spectral Acceleration	1.500g
S_1 1.0 Second Spectral Acceleration	0.618g
Site Coefficient F_a	1.0
Site Coefficient F_v	1.3
Max. Short Period Spectral Response Acceleration $SM_s = F_a \times S_s$	1.500g
Max. Spectral Response Acceleration 1-second period $SM_1 = F_v \times S_1$	0.804g
Damped Design Spectral Response - Short Period $SD_s = 2/3 \times SM_s$	1.000g
Damped Design Spectral Response - 1-second Period $SD_1 = 2/3 \times SM_1$	0.536g

Grading

Preliminary conceptual grading plans were provided this office during preparation of this report, we provide the following recommendations for consideration in the design of the site

development plans. We recommend that final grading plans and building layout be reviewed by our office in order to plan the required supplemental investigation. All grading must conform to Appendix C Preliminary Grading Specifications; however, the specifications are general and would be expected to vary with site and soil conditions encountered during development.

Exploratory test pits were excavated for the Herzog geologic exploration and backfilled to less than 90% relative compaction. These test pits may be located in an area that involves a minimum amount of grading. If located within a planned improvement area, the test pits should be re-excavated and backfilled with compacted fill.

All grading must be observed by a representative of our firm. It is especially important that our representative observe demolition, and during the stripping and scarification process to observe whether undesirable materials are encountered.

The following general recommendations should be incorporated into site grading.

Cut Slopes

Generally, exposed slopes cut into firm native soil and rock should not be steeper than two horizontal to one vertical (2H:1V), and flatter slopes may be required in localized areas. The uninterrupted height of the slope must not exceed 25 feet in elevation between 6-foot wide drained benches, unless specifically reviewed with supplemental recommendations provided by the Geotechnical Engineer. The stability of cut slopes is often affected by adverse bedding, the character of the rock exposed and/or by the inclination of weak zones within the bedrock rather than the general strength of the rock being cut. The nature of the bedrock observed at this site and the regional geologic history indicates a variety of bedrock types and structural orientations may vary significantly over a short distance.

In areas where adverse orientations may exist, an engineering geologist must evaluate these cut slopes during grading. If adverse conditions are observed, we will provide recommendations regarding removal of unstable soil, keyway locations, and buttress filling or retaining wall construction for cut slope stability.

Fill Slopes

Generally, fill placed on slopes shall have a finish slope of no steeper than 2 horizontal to 1 vertical. We recommend that a keyway be excavated at least 5 feet into the underlying competent bearing soil or bedrock at the toe of the proposed fill. The bottom of the keyway should have a minimum width of 15 feet and should be sloped a minimum of 2 percent downward into the keyway heel for drainage into a subdrain system installed to collect migrating water. Due to the variable nature of the bedrock at this site, keyways will likely be deeper and wider than standard dimensions. The total depth of the keyway and the extent of the fill slope configuration should be decided in the field during grading by the geotechnical engineer or the engineer's representative.

The subdrain should consist of CalTrans Class 2 permeable material with a perforated 6-inch-diameter ABS SDR 23.5 or equivalent pipe installed on a bed of approximately 3 inches of drain rock. Perforations should be placed downward. Drainage of the system will be accomplished with non-perforated pipe extending from the subdrain pipe to an acceptable storm drain system. All subdrain and drain pipe should be placed to fall at least 1 percent toward the outlet side for flow.

Compacted fill placed within the keyway should be compacted to at least 95 percent relative compaction. Compacted fill placed above the keyway or in benched areas should be compacted to at least 90 percent of the maximum dry density. Relative compaction should be based on ASTM D 1557 test methods. On-site soil may be used as fill provided that it is moisture-conditioned to a minimum of 3 percent above the optimum moisture content.

The gradient of the exposed outboard surface of the fill slope should not exceed 2H:1V (horizontal to vertical), and the uninterrupted height of the slope must not exceed 25 feet in elevation between the 6-foot-wide drained benches. Fill from cuts on adjacent portions of the site may be used provided that our firm's representative confirms suitability. The compacted fill should continue up the slope with additional drained benches excavated into bedrock or acceptable soil as recommended by our geotechnical engineer or the engineer's representative.

Surface water runoff above the compacted fill slope must be intercepted by a concrete lined V-ditch installed on the upslope portion of the compacted fill slope and discharged to an appropriate outlet. Additional recommendations may be made for fill slope construction depending upon the soil conditions. The project civil engineer should be contacted to design the V-ditch and determine the appropriate outlet for drainage.

On-site soil generated by site grading may be used as fill provided that the soil is free of deleterious and organic materials and that it has been approved for use as fill by our geotechnical engineer or the engineer's representative. Organic strippings must not be placed within the structural fills. Samples of any proposed import fill planned for use on this project should be submitted to our geotechnical engineer or the engineer's representative for approval and appropriate testing no less than 4 working days before the expected delivery to the jobsite.

All fill to be placed at depths greater than 4 feet below final grade must be placed at a minimum of 90 percent relative compaction (i.e., 90 percent of the maximum dry density based on ASTM D 1557 test methods) and moisture-conditioned to a minimum of three 3 percent over the optimum moisture content. Fills that contain moderately expansive clay should have special preparation in the event removal is not feasible. Special preparations would include compaction to a minimum of 85 and to a maximum of 90 percent relative compaction and moisture-conditioned to a minimum of 5 percent over the optimum moisture content. Fill characterized as moderately expansive soil is

generally defined as having a plasticity index (PI) greater than 15. A representative sample of the fill should be tested for the expansiveness of the soil and approved by the geotechnical engineer or the engineer's representative. The upper 4 feet of fill constructed of nonexpansive to slightly expansive soil should be compacted to a minimum of 90 percent relative compaction and moisture-conditioned to a minimum of 3 percent over the optimum moisture content.

Expansion of near-surface soils can be greatly reduced by taking appropriate measures during grading. Selective grading to remove expansive soils and replace with low or non-expansive soils during the mass grading process is highly recommended. In areas where expansive silty clay will receive fill, we recommend scarifying the upper 12 inches, moisture-conditioning the soil to above the optimum moisture content by at least 5 percent, and recompacting the soil to a relative compaction between 85 and 90 percent. In areas where the expansive silty clay is at or near final grade, we recommend subexcavating 3 feet and replacing it with one of the following: (1) with import fill that is nonexpansive or has a low expansion potential and the approval of our geotechnical engineer, or (2) with on-site select material approved by our geotechnical engineer or the engineer's representative.

The following requirements should apply to cut, fill and transition lots.

Cut Lots

Lots entirely in cut and in material with a moderate to high expansion potential should be subexcavated a minimum of 3 feet. The exposed subgrade should be scarified to a minimum depth of 12 inches and recompacted at 85 to 90 percent relative compaction and a minimum of 5 percent over optimum moisture content. Soil with a low expansion potential should be recompacted to at least 90 percent relative compaction and at least 3 percent over optimum moisture content.

Transition Lots

Transition lots are defined as those partially in cut and partially in fill with the transition occurring within the building pad or near it. Lots with a small cut section outside the building pad should be treated as fill lots described above. Transition lots should be subexcavated a minimum depth of 3 feet and scarified to a minimum depth of 12 inches. Both the scarified material and the subexcavated material should be recompacted at 85 to 90 percent relative compaction and a minimum of 5 percent over optimum moisture content for moderately to highly expansive soil. Soil with a low expansion potential should be recompacted to at least 90 percent relative compaction and at least 3 percent over optimum moisture content.

Additional topsoil will be needed for landscaping lots cut entirely in bedrock. We recommend stockpiling the topsoil and near-surface material generated from stripping swales and low-lying areas. This material should be used for landscaping where topsoil is limited.

Permeable soil may be encountered at final cut pad elevations that could collect and direct percolated water into bedded areas and cause seepage on the lower slope. If this occurs, the pad must be over-excavated of the upper 2 feet of permeable zone and replaced with a compacted clayey soil cap (excluding highly expansive soil) to reduce infiltration of water. Compaction of the clayey soil cap should be in accordance with the compaction requirements discussed earlier in this report.

Subsurface drains should be provided where any potential seepage zones are encountered during grading. The subsurface drains would provide drainage for these areas and would increase the stability of the cut and fill areas where excessive moisture is found. We recommend that all subsurface drains be installed according to Section 9 of Appendix C.

We recommend that all finished pads be graded a minimum of 1 percent sloping downward and toward the proposed street elevation.

After mass grading is completed, if expansive soils are present, it is imperative that exposed moderately to highly expansive soil be kept moist by occasional sprinkling. If the soil dries out, we recommend that the upper 12 inches be scarified, moisture-conditioned, and recompacted in accordance with the recommendations given above. Additional subexcavation and recompaction may be required by the geotechnical engineer or the engineer's representative based on observed conditions.

Foundations

Based upon preliminary subsurface information obtained during this study, a variety of subsurface conditions, slope conditions and building types, various foundation types will be implemented at this site. In general, sites on flat ground and not adjacent to slopes can be constructed using a conventional perimeter foundation system with slab on grade floors, and sites located on or near slopes may need to be supported upon a pier and grade beam foundation system or a deepened conventional footing foundation system. During the geotechnical plan review, recommendations will be provided for specific foundation type and mitigation measures for the specific development area under consideration. Upon completion of mass grading operations, the Geotechnical Engineer will perform a lot-by-lot inventory of site conditions in order to determine if alternative foundation systems would be appropriate.

We presently anticipate that the majority of structures will be from one to three-stories in height, and of wood-frame construction. Structural loads are expected to be light to moderate. Based upon the results of our study we have provided recommendations for both conventional perimeter footing and pier and grade beam foundation systems. Geotechnical design criteria should be implemented at the discretion of the Structural Engineer based upon his review and designed in conformance with current industry standards and the geotechnical recommendations of this report. If a foundation system other than that recommended is desired, this office should be called for supplemental

recommendations. Such recommendations would be presented as an addendum to this report. The following foundation recommendations are based on the anticipated soil conditions underlying the project site. If unanticipated soil conditions are encountered at the time of grading, the design criteria may be altered at the discretion of the Geotechnical Engineer.

The excavations for foundations must be cleaned or all loose materials and debris and moistened prior to the placement of concrete. All foundation excavations must be observed by our representative to verify the condition of the bearing material. If any localized areas of loose or soft undesirable subsoil are observed in the foundation excavations, the excavation must be sub-excavated to firm soil and/or backfilled with compacted fill under the observation and testing of our representative.

Slab on Grade with Conventional Perimeter Footing

FOUNDATION DESIGN CRITERIA

Item	Criteria
Allowable Bearing Capacity*	
Soil and Compacted Fill	2,500 pounds per square foot (psf)
Bedrock	4,000 psf
Minimum conventional footing depth	18 inches below lowest adjacent grade into firm non-yielding soil or bedrock
Coefficient of Sliding Friction	
Soil and Compacted Fill	0.35
Bedrock	0.45
Passive Pressure	
Soil and Compacted Fill	350 pounds per cubic foot-equivalent fluid weight (pcf-efw), initiating at a depth of 12 inches below lowest adjacent grade.
Bedrock	450 pounds per cubic foot-equivalent fluid weight (pcf-efw), initiating at a depth of 12 inches below lowest adjacent grade.
Slab Thickness	5 inch minimum with the actual thickness to be determined by the Structural Engineer.

Slab Minimum Reinforcement	Actual steel reinforcement to be determined by the Structural Engineer.

*Allowable capacity is for dead plus live load. Bearing value may be increased by one-third for wind or seismic loads.

The structural engineer must design the structural slab based on current industry standards using the stated geotechnical criteria.

PRA is not a floor moisture proofing consultant or expert, and a qualified specialist with local knowledge of slab moisture protection systems, flooring design and other potential building components should be consulted to provide recommendations for a capillary break or other system to prevent moisture and moisture vapor transmission through the slab. The specialist should note that pre-soaking of the subgrade soil where moderately expansive soils are present prior to the placement of slab concrete is recommended. For your consideration, it is recommended that conventional floor slabs be supported on at least 4 inches of crushed rock or angular gravel. If this layer is desired to serve as a capillary break, there should be 100 percent particles passing the 1-inch sieve and less than 5 percent by weight passing the no. 4 sieve size. The placement of the capillary break should be done as soon as possible after compaction and moisture conditioning of the subgrade to reduce drying of the subgrade soil. The use of a capillary break below the slab requires the penetration of the grade beam a minimum of 4 inches into the subgrade soil to prevent exterior irrigation or storm water from penetrating below the slab.

At no time should the membrane be punctured during the construction of the concrete slab-on-grade. Improper placement of the membrane may result in adverse moisture conditions that could contribute to cracking or heaving of the slab. Excess moisture could also pass through the slab into the residence. It should be understand that the above membrane is considered a moisture retarder and not a barrier. Membranes that achieve the designation of a moisture barrier are considered 15 mil membranes

manufactured by Stego Wrap and equivalent.

Subsurface moisture and moisture vapor naturally migrate upward through the soil and, where the soil is covered by a building or pavement, this subsurface moisture will collect. To reduce the impact of the subsurface moisture and potential impact of future introduced moisture (such as landscape irrigation or precipitation), it is recommended that a vapor retarder be placed over the capillary break layer. This membrane typically consists of visqueen or polyvinyl plastic sheeting at least 10 mil in thickness. This membrane is typically overlain by a 1 to 2-inch thick layer of fine to medium grained sand to promote curing of the slab concrete, protect the membrane during construction, and provide a leveling course. It should be noted that the installation of the capillary break and vapor retarder systems may not be completely effective in preventing floor slab moisture problems. These systems typically will not necessarily assure that floor slab moisture transmission rates will not meet floor-covering manufacturer standards and that indoor humidity levels are appropriate to inhibit mold growth. The design and construction of such systems are totally dependent on the proposed use and design of the proposed building and all elements of building design and function should be considered in the slab on grade floor design. Building design and construction have a greater role in perceived moisture problems since sealed buildings/rooms or inadequate ventilation may produce excessive moisture in the building and affect air quality.

Special precautions must be taken during the placement and curing of all concrete slabs. Excessive slump (high water-cement ratio) of the concrete and/or improper curing procedures used during either hot or cold weather conditions could lead to excessive shrinkage, cracking or curling of the slabs. High water-cement ratio and/or improper curing also greatly increase the water vapor permeability of concrete. We recommend that all concrete placement and curing operations be performed in accordance with the American Concrete Institute (ACI) manual. We make no guarantee nor provide any assurance that the use of capillary break/vapor retarder systems will reduce concrete slab-on-grade floor moisture penetration to any specific rate or level, particularly those required by floor covering manufacturers. The builder

and designers should consider all available measures for floor slab moisture protection. We recommend that the project structural engineer also consider specifying air-entrainment for the concrete mix design to reduce the permeability of the concrete slab.

Pier and Grade Beam Foundation System

Structures located upon or near slopes and/or with mixed cut and fills, may need to be supported on a foundation system consisting of cast-in-place reinforced concrete piers with tie-beams that extends into and derives vertical and lateral support from the embedment into non-yielding bedrock material. During the geotechnical plan review, recommendations will be provided for specific foundation type and mitigation measures for the specific development area under consideration.

Pier Foundation System

Pier Size	Minimum diameter 18 inches with vertical forces acting in both directions using a skin friction value of:	
Skin Friction	Residual Soil	Disregard
	Compacted Fill	500 psf dead plus live load
	Bedrock	1,500 psf dead plus live load

Above may be increased by 1/3 for wind and seismic load

Minimum Penetration 8 feet into bedrock, or twice the depth of overburden soil or the depth based on the structural design, whichever is deeper

Active Value	Residual Soil	65 pcf-efw over twice the pier diameter acting over the upper 6 feet of embedment
	Compacted Fill	55 pcf-efw over twice the pier diameter acting over the upper 6 feet of embedment
	Bedrock	45 pcf-efw over twice the pier diameter acting over the upper 6 feet of embedment

Passive Value	Residual Soil	Disregard
	Compacted Fill	350 pcf-efw apply over 1-1/2 pier diameters, initiating within bedrock.
	Bedrock	500 pcf-efw apply over 1-1/2 pier diameters, initiating within bedrock.

Settlement of this foundation system constructed in compliance with this report is expected to be less than ½-inch for any given lateral 20 foot length

To reduce the potential for settlement, we recommend that the foundation excavations be cleaned of sluff and loose material prior to placing steel reinforcement and concrete.

A representative from our firm must be present to observe the foundation excavations to confirm the uniformity and the character and competence of the materials encountered in the piers.

Surface drainage will be required; gutters should be tied to tight lines discharging to the site's storm sewer system. Swales with drop inlet facilities are desirable in order to facilitate the rapid removal of all surface storm or irrigation water.

Studies have shown that trees planted within half of their mature height from the edge of the foundation have caused differential foundation movements. These will require more water in periods of extreme drought and in some cases a root injection system may be required to maintain moisture equilibrium.

The setback for structures from the top or bottom of cut or fill slopes is a minimum 10 feet, and where fill slopes exceed 30 feet, the California Building Code setback of 1/3 the height of slope for structures from the top of slope, unless evaluated by the Geotechnical Engineer to provide supplemental recommendations. Some sloughage or debris resulting from possible downhill soil erosion of cut slopes should be expected

and would require removal. An alternative protective measure would consist of constructing a low retaining wall along the base of the cut slope. This wall should have a subdrain installed behind it, parallel to the base of the slope, and at a minimum 1 percent gradient to provide gravity drainage to an approved outlet. A swale above the wall should be provided to control slope wash runoff. If retaining walls are to be constructed, they must be designed by a structural engineer, and a geotechnical engineer must review the proposed design.

We recommend periodic moistening of the building pad subgrade and foundation excavations to prevent drying of the subgrade soil. A representative of our firm must check moisture conditions in the subgrade soil and foundation excavations 48 hours prior to placing concrete. If site conditions require additional moisture conditioning, the building pad subgrade must be soaked with water for a minimum of 48 hours prior to placing concrete in the excavations or prior to placing gravel for the capillary break in slab areas.

Retaining Walls

Retaining walls should be supported on firm bedrock either through a footing, or be supported by piers that extend into and derive support from firm bedrock. The following recommendations are for a retaining wall founded in firm bedrock. The retaining wall should be designed for a fully-drained condition. The proposed design should be reviewed by our firm to confirm that the retaining wall configuration is compatible with the assumed parameters. Table 1 presents our preliminary design criteria for general retaining wall construction. Preliminary design pressures are expressed as equivalent fluid pressures. Specific criteria based upon a supplemental geotechnical study is required for retaining wall recommendations for a specific site design layout. This office should be contacted for supplemental recommendations where piers are required to achieve embedment into non-yielding bedrock.

TABLE 1

RETAINING WALL DESIGN CRITERIA

Pressures: Gradient of Backfill	Active Pressure (pcf)	Passive Pressure* (pcf)
Level	55	400
2:1 (maximum)	65	400

*Commences a minimum of 1 foot below lowest adjacent grade, except that passive pressure excludes colluvial soil over bedrock.

Walls restrained at the top should be designed with a 100 psf uniform lateral surcharge load in addition to the lateral earth pressures given above. Any wall structurally connected to a structure must be considered a restrained wall.

The design criteria are applicable for walls which have fully-drained condition. To provide fully-drained conditions, a gravel drainage system should be constructed behind the walls and have a minimum width of 12 inches. We recommend that the drainage system commence behind and at the bottom of the retaining structure's heel and extend up the retaining wall to 1 foot below grade. The drainage system should consist of Cal Trans Class II permeable material or alternate approved by our geotechnical engineer or the engineer's representative. A 4-inch diameter, perforated rigid drainpipe should be installed at the bottom of the drainage system and below the cold joint with holes facing down. The pipe should be sloped at a minimum of 1 percent and discharged to a suitable drainage facility away from all structural improvements. The area immediately behind the retaining wall should be graded so as to prevent surface water from ponding adjacent to the wall.

For backfill behind retaining structures, the zone between the structure's drainage system and the limits of excavation may be backfilled with on-site soil; however, granular material is recommended for lower lateral earth pressures. Should on-site soils be used in the zone between the structure's drainage system and the limits of excavation, the backfill materials should be compacted to 90 percent of the maximum

dry density at 2 to 4 percent above optimum moisture content as determined by American Society of Testing Materials (ASTM) D 1557-91 test methods. Over-compaction behind retaining structures tends to increase the lateral pressure against the structures and, therefore, should be avoided.

Where retaining walls are used adjacent to living areas and to reduce the potential for moisture transmission through the walls, we recommend that (1) the exterior face be hot-mopped in accordance with the manufacturer's specifications and (2) an impermeable membrane be placed over the hot-mopped surface to protect the surface from damage during rock placement. It is important that surface drainage controls also be installed to reduce the potential for moisture transmission.

Seismic Surcharge

For the purpose of providing a seismic surcharge to be considered in the design of the basement and retaining walls over 6 feet in height at this site, the methodology proposed by Seed and Whitman (1970), provides a simplified dynamic lateral force component for yielding walls as:

$$\Delta P_{AE} \sim (\tfrac{1}{2})\,(3/4)\,k_h \gamma H^2 = (3/8)\,k_h \gamma H^2$$

It has been recommended that k_h be taken as equal to the site acceleration that is consistent with the design motions of $k_h = S_{DS}/2.5$, where S_{DS} is the design, 5-percent-damped, spectral response acceleration parameter at short periods (i.e., period of 0.2 seconds). The unit weight of soil (γ) should be assumed as 120 pcf. Seed and Whitman recommended that the resultant dynamic thrust be applied at 0.6H above the base of the wall (i.e., similar to an inverted triangular pressure distribution.

Therefore, the wall design includes the active soil lateral pressure values as provided in this report, with the resultant acting at a distance of H/3 from the base of the wall; and the seismic surcharge value, as discussed above, with the resultant acting at a distance of (0.6*H) from the base of the wall. This assumes a fully drained condition,

with any superimposed loads other than retained earth, shall be considered as surcharges. Loads applied within a horizontal distance equal to wall stem height, measured from the back face of the wall shall be considered as a surcharge.

Miscellaneous Concrete Slabs-on-Grade

We recommend that the slab-on-grade be a minimum thickness of 4 inches for walkways and patios. Where expansive near-surface soil is present, we recommend reinforcing the concrete slab-on-grade floor either (1) with No. 3 reinforcing bars spaced at 18 inches on center, or (2) with an alternate reinforcement system as required by the project structural engineer. We also recommend that exterior flatwork be structurally independent of the foundation system to provide freedom of movement due to potential changes in soil volume. In general, the reinforcement should be draped or supported by concrete dobies to attain its greatest efficiency in minimizing the cracking of the slabs. Crack control joints must be located as directed by the structural engineer.

Prospective homeowners should expect some vertical displacement of exterior flatwork, sidewalks, driveways, pavements, and garage slabs. To reduce vertical displacement, we recommend presoaking all exterior flatwork areas, maintaining proper site drainage, and controlling irrigation of landscaping.

Utility Trenches

Utility trenches that parallel the sides of the buildings must be placed so that they do not extend below a line sloped down and away at a slope of 2H:1V (horizontal to vertical) from the bottom outside edge of the perimeter foundations (i.e., the base of the grade beam systems).

All trenches must be backfilled with native materials compacted uniformly to the relative compaction specified in Appendix C. If local building codes require use of sand as the trench backfill, all utility trenches entering the building must be provided with an impervious seal of either cohesive soil or lean concrete where the trench passes under the building perimeter. The impervious plug must extend 4 feet into, and out of, the

building perimeter. Jetting of trench backfill is not recommended as it may result in an unsatisfactory degree of compaction.

Drainage

Surface water must not be allowed to pond adjacent to building foundations. To preclude drainage problems, we recommend continuous roof gutters for the proposed structures. It will be necessary to direct all water collected from roof down spouts into closed conduits that lead to acceptable discharge points away from the structures.

A positive slope gradient of 2 percent down and away from the building perimeter must be applied to the finished subgrade (inclusive of topsoil). This slope must extend no less than 5 feet away from the outside building perimeter. Drainage swales with drop inlet facilities should be provided to remove runoff from around the structures.

Plants must not be placed immediately adjacent to the structures. If vegetation must be planted adjacent to the buildings, drought-resistant plants that require very little moisture and drip-irrigation systems should be used. Sprinkler heads must not be placed where they could saturate foundation soil.

The landscape architect, licensed landscapers, and prospective owners should be informed of the grading and surface drainage requirements. They should also be aware that moistening of the subgrade soils should be systematic and uniform for all sides of each structure. In the areas adjacent to the foundation or concrete slabs-on-grade, the soil should be protected from over-irrigation and from excessive drying. Shade trees or shrubs requiring large amounts of moisture from the soil should be set away from the foundations so that their roots do not influence the soil adjacent to the foundations.

Soil adjacent to foundations and the slabs-on-grade will need to be monitored by home buyers during hot and dry summer periods. Relatively constant moisture should be maintained in the soil adjacent to the foundation to keep the soil uniform and stable.

If adequate moisture is not maintained in the soil adjacent to the foundations, then the soil may either dry and separate from the foundations or the soil may become wet and expand against the foundations causing adverse movements.

Pavement Section

We recommend determining the pavement section after the completion of mass grading and the subgrade conditions are known and the approved traffic indices are supplied by the municipal engineer. It is recommended that selective grading be planned so that relatively higher R-value material, such as granular soils be placed in the upper two feet of subgrade level. Regardless of the design section, to perform to its greatest efficiency, the pavement section requires the following construction criteria:

a. Remove organic and deleterious materials from all pavement subgrade.

b. Moisture-condition the upper 6 inches of subgrade soil and compact it to a minimum relative compaction of 95 percent and to a moisture content of 2 to 4 percent over the optimum moisture content. All pavement subgrade should be stable with no "pumping" at the time the base rock is placed.

c. Use only good quality materials of the type and minimum thickness specified. All base rock should meet the *Standard Specifications* of the State of California for Class 2 base rock and should be angular in shape.

d. Compact the base rock uniformly to a minimum relative compaction of 95 percent.

e. Place the asphalt concrete only during periods of fair weather when the free air temperature is within the prescribed limits as set forth by the Asphalt Concrete Institute.

f. Compact all trench backfill under the pavement to reduce fill settlement and minimize pavement damage that may result from such settlement. Mechanical compaction is recommended because material placed by jetting or ponding will probably not attain satisfactory densities.

g. Provide adequate drainage or V-ditch systems to prevent surface water from migrating into the subgrade pavement soil from behind curb-and-gutter sections. For areas where pavement abuts landscaping, we recommend extending the concrete curb to the bottom of the base rock layer to form a cut-off wall to prevent water from migrating into the base rock.

Swimming Pools

Investigations for swimming pools were not part of this study. We recommend conducting supplemental investigations for proposed swimming pools on a site-specific basis.

Construction During Fall and Winter Seasons

Wet weather may raise the moisture content of the soil well above optimum conditions and earthwork construction may be difficult or impossible. Supplemental recommendations will be provided by our geotechnical engineer or the engineer's representative in the field, if appropriate.

Miscellaneous

Our exploration did not reveal the presence of buried items such as leaching fields, wells, storage tanks, etc. If such items are encountered during grading or during excavations of foundations, our firm should be notified immediately to provide recommendations for proper procedures. This study did not include investigations for toxic substances or groundwater contamination of any type. If such conditions are encountered during site development, additional studies will be required. No sampling or testing of soils and/or bedrock was performed to determine the presence of potential corrosive or otherwise concrete-reactive soils. Such sampling and testing can be performed during site grading.

Plan Review

Due to the various site conditions and development scenarios for this complex, the Geotechnical Engineer must review the proposed final development concepts for the specific development area under consideration in order to provide a Geotechnical Plan

Review. During the geotechnical plan review, recommendations will be provided for specific foundation type and mitigation measures for the specific development area under consideration.

Before submitting design drawings, structural calculations, and construction documents to the appropriate local agency for approval, copies of the documents must be reviewed by our firm to ensure that the recommendations in this report have been effectively incorporated.

Construction Observations

A representative of this firm must be present during grading and foundation subgrade preparation and during mitigation of the various features indicated on the Constraints Map and Approximate Mitigation Limit (Figure 5) to observe that the work performed is in conformance with specifications and recommendations provided here. We will also perform testing as necessary to evaluate the quality of the materials and their relative compaction. Our representative must also observe all foundation excavations, including during pier drilling operations to confirm embedment depth into acceptable non-yielding materials. Records will be maintained of our site visits and test results.

A Certified Engineering Geologist of PRA must observe all cut slopes and keyway excavations during the mass grading of the project.

Subexcavation of transition lots should be checked prior to backfilling to confirm that the excavation is at the necessary depth and that no adverse conditions are observed.

At the completion of site grading and foundation excavation, we will submit a summary of our observation and test results along with any necessary supplemental recommendations.

To assure that our personnel are at the site when needed, we require that you notify us at least 2 working days before the task begins.

LIMITATIONS

This report has been prepared for the exclusive use of North Coast Land Holdings, LLC, and their consultants for specific application to the proposed development. If changes occur in the nature, design location, or configuration of the proposed development, the conclusions and recommendations contained here shall not be considered valid without the review of PRA. Changes must be reviewed by our firm.

The analysis, opinions, conclusions and recommendations submitted in this report are based in part on the referenced materials, site visit and evaluation, and subsurface exploration. The nature and extent of variation among exploratory test borings, test pits and trenches may not become evident until construction. The geologic nature of the site region is highly variable and subsurface conditions encountered during mass grading may require supplemental recommendations that may alter the proposed development scheme. If variations appear, it will be necessary to re-evaluate or revise recommendations made in this report.

The recommendations in this report are contingent on PRA conducting an adequate testing and monitoring program during construction of the proposed development. Unless the construction monitoring and testing program is provided by or coordinated with our firm, PRA will not be held responsible for compliance with design recommendations presented in this report and other supplemental reports.

Our services have been provided in accordance with generally accepted geotechnical engineering practices. No warranties are made, express or implied, as to the professional opinions or advice provided. Recommendations contained in this report are valid for a period of 1 year; after 1 year they must be reviewed by this firm to determine whether or not they still apply.

REFERENCES

Boore, D.M., Joyner, W.B., and Fumal, T.E., 1997, Equations for Estimating Horizontal Response Spectra and Peak Accelerations From Western North American Earthquakes: An Summary of Recent Work: Seismological Research Letters, vol. 68, num 1. Pa. 128-153.

Borcherdt, R. D., Gibbs, J. F., and Lajoie, K. R., 1975, Maps Showing Maximum Earthquake Intensity Predicted in the Southern San Francisco Bay Region, California for Large Earthquakes on the San Andreas and Hayward Faults: U.S. Geological Survey Misc. Field Studies Map MF

California Geological Survey, July 1, 2009, Tsunami Inundation Map for Emergency Planning, San Rafael and San Quentin Quadrangles, Marin County, California.

CalTrans, 2012, California Fault Database

Cao, T. et al, 2003, The Revised 2002 California Probabilistic Seismic Hazard Maps.

Donald Herzog & Associates (DHA), Inc., August 31, 1979, Report - Soil Investigation, Golden Gate Baptist Theological Seminary, Mill Valley, California: Job No. 994.1.

DHA, March 22, 1982, Report - Geotechnical Reconnaissance for Master Plan, Golden Gate Baptist Theological Seminary, Mill Valley, California: Job No. 994.1.

DHA, May 19, 1982, Report - Geotechnical Reconnaissance for Master Plan, Golden Gate Baptist Theological Seminary, Mill Valley, California: Job No. 994.1.

DHA, August 10, 1982, Preliminary Report - Anticipated Remedial Measures, Golden Gate Baptist Theological Seminary, Strawberry Point, California: Job No. 994.1.

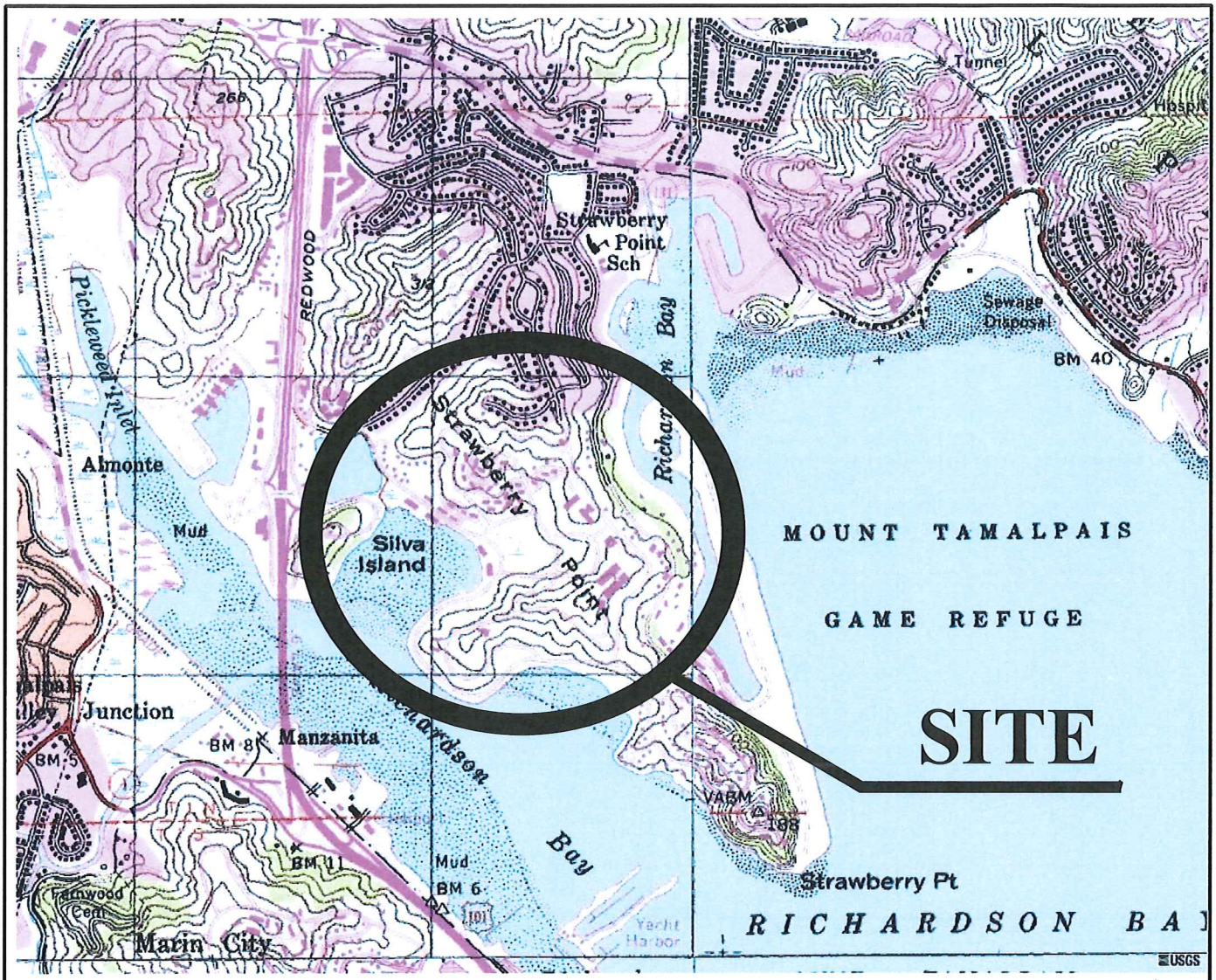
Lew, Marshall et al, 2010, Seismic Earth Pressures on Deep Building Basements: Paper from SEAOC 2010 Convention.

Seed, H. B., and Whitman, R. V., 1970, Design of Earth Retaining Structures for Dynamic Loads: ASCE Specialty Conference, Lateral Stresses in the Ground and Design of Earth Retaining Structures: Cornell University, Ithaca, NY, 103 - 147.

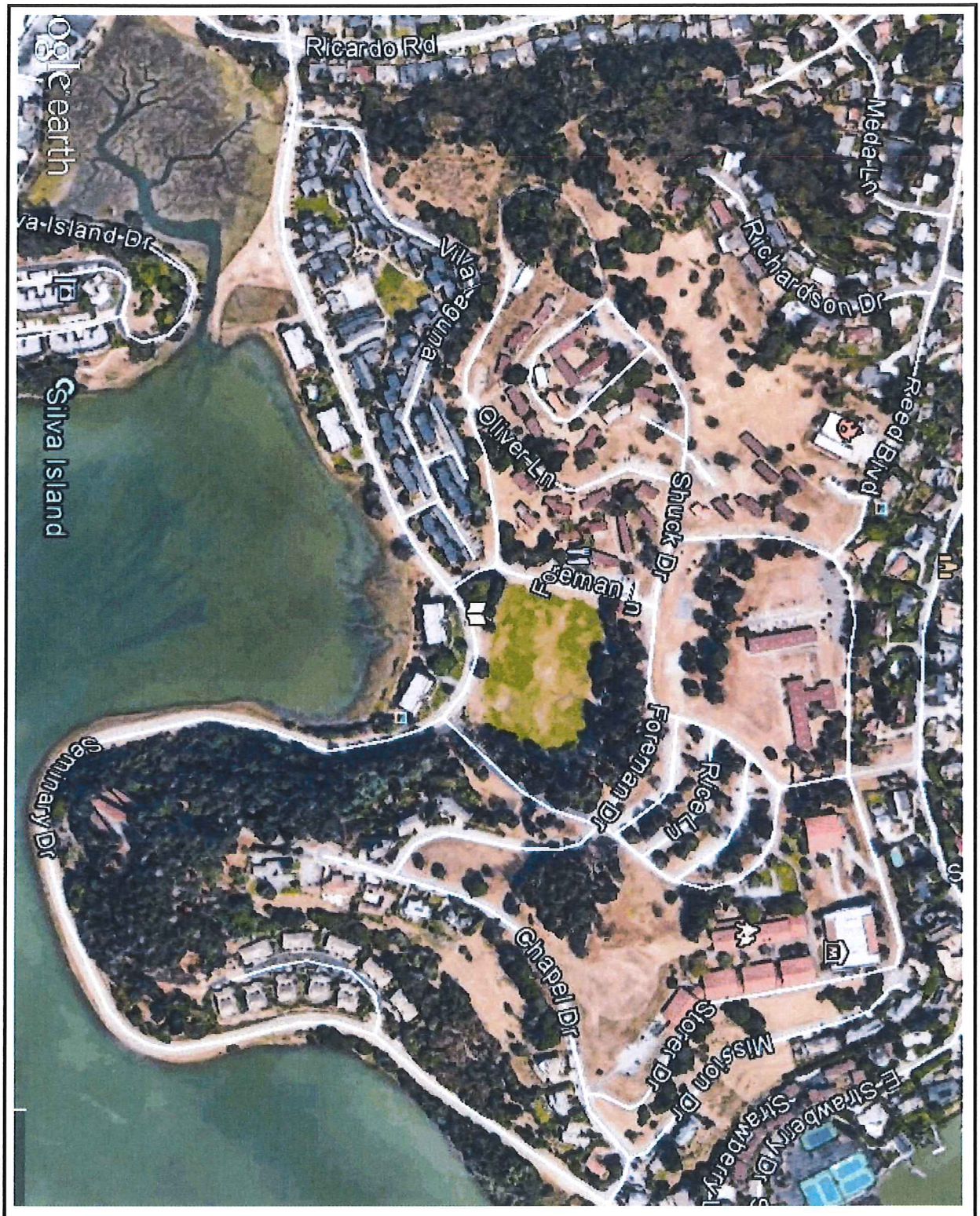
Purcell, Rhoades & Associates, 9/1/10, rev. 8/22/10, Stage 1 Feasibility Study, Golden Gate Baptist Theological Seminary, Master Plan Amendment, Mill Valley, California: Job No. 08-236/7463-01.

Ritter, J. R. And Dupre, W. R., 1972, Map Showing Areas of Potential Inundation by Tsunamis in the San Francisco Bay Region, California: U. S. G. S. Basic Data Contribution Map 52, Misc. Fld. Studies Map MF-480.

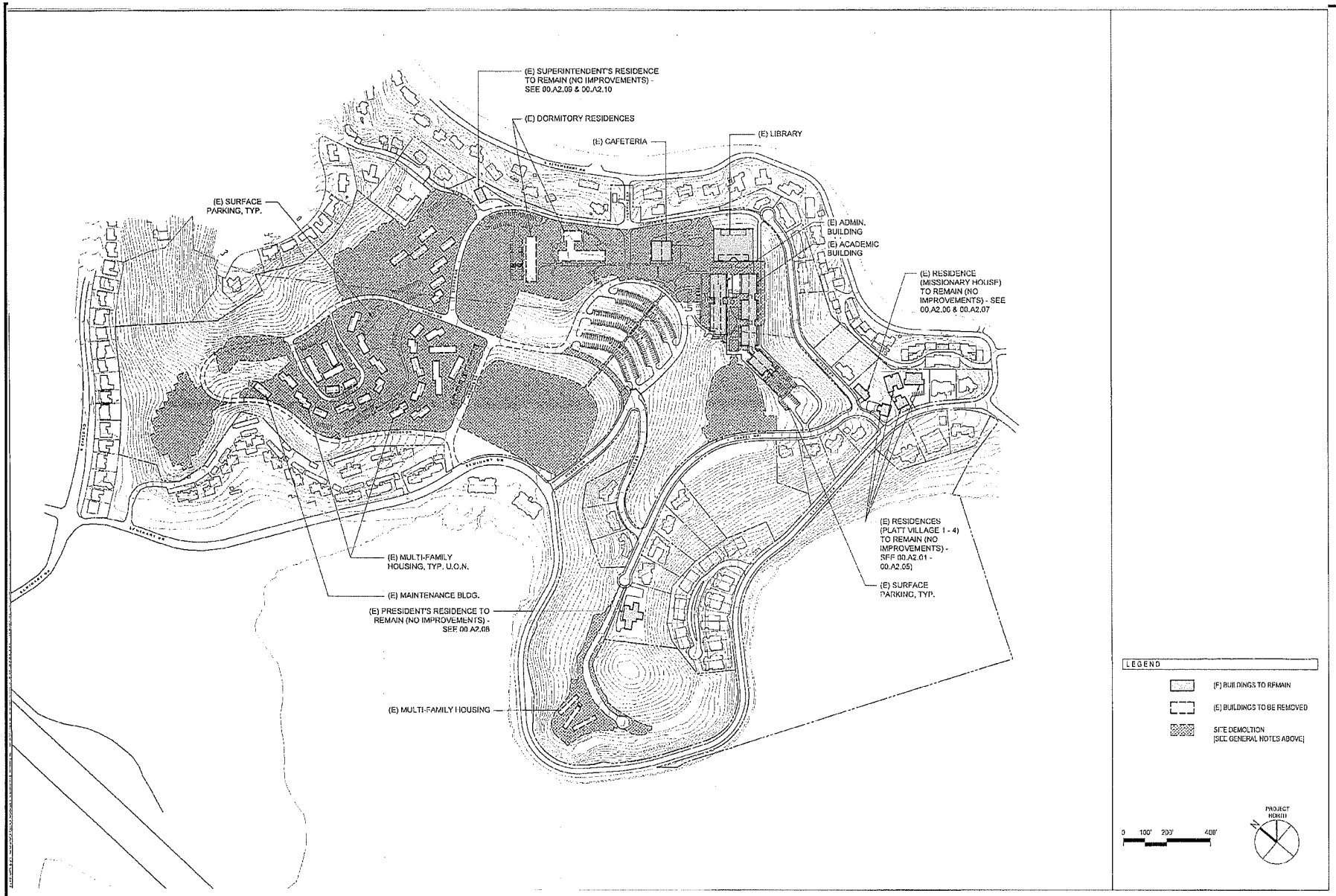
Witter, C. M., Knudsen, K. L., Sowers, J. M., Wentworth, C. M., Koehler, R. D., and Randolph, C. E., 2006, Maps of Quaternary Deposits and Liquefaction Susceptibility in the Central San Francisco Bay Region, California: U. S. G. S. Open File Report 2006-1037.



NOTES	DATE	MAY 2016	Purcell, Rhoades & Associates Consultants in the Applied Earth Sciences
	JOB NO.	7694-01	
	DWG NO.	N769401FIG1	**SITE LOCATION MAP** THE SEMINARY MILL VALLEY, CALIFORNIA — FIGURE NO. 1
	DRAWN	IDA	
	CHK'D	DJR	
	APP'D	DJR	
	CLIENT	NORTH COAST LAND HOLDINGS, LLC	REV. NO.



DATE MAY 2016	Purcell, Rhoades & Associates Consultants in the Applied Earth Sciences		FIGURE NO.
JOB NO. 7694-01	**SITE AERIAL PHOTO** THE SEMINARY MILL VALLEY, CALIFORNIA		2
DWG NO. N769401FIG2			
DRAWN IDA			
CHK'D DJR			
APP'D DJR	CLIENT	NORTH COAST LAND HOLDINGS, LLC	REV. NO.



Purcell, Rhoades & Associates
Consultants in the Applied Earth Sciences

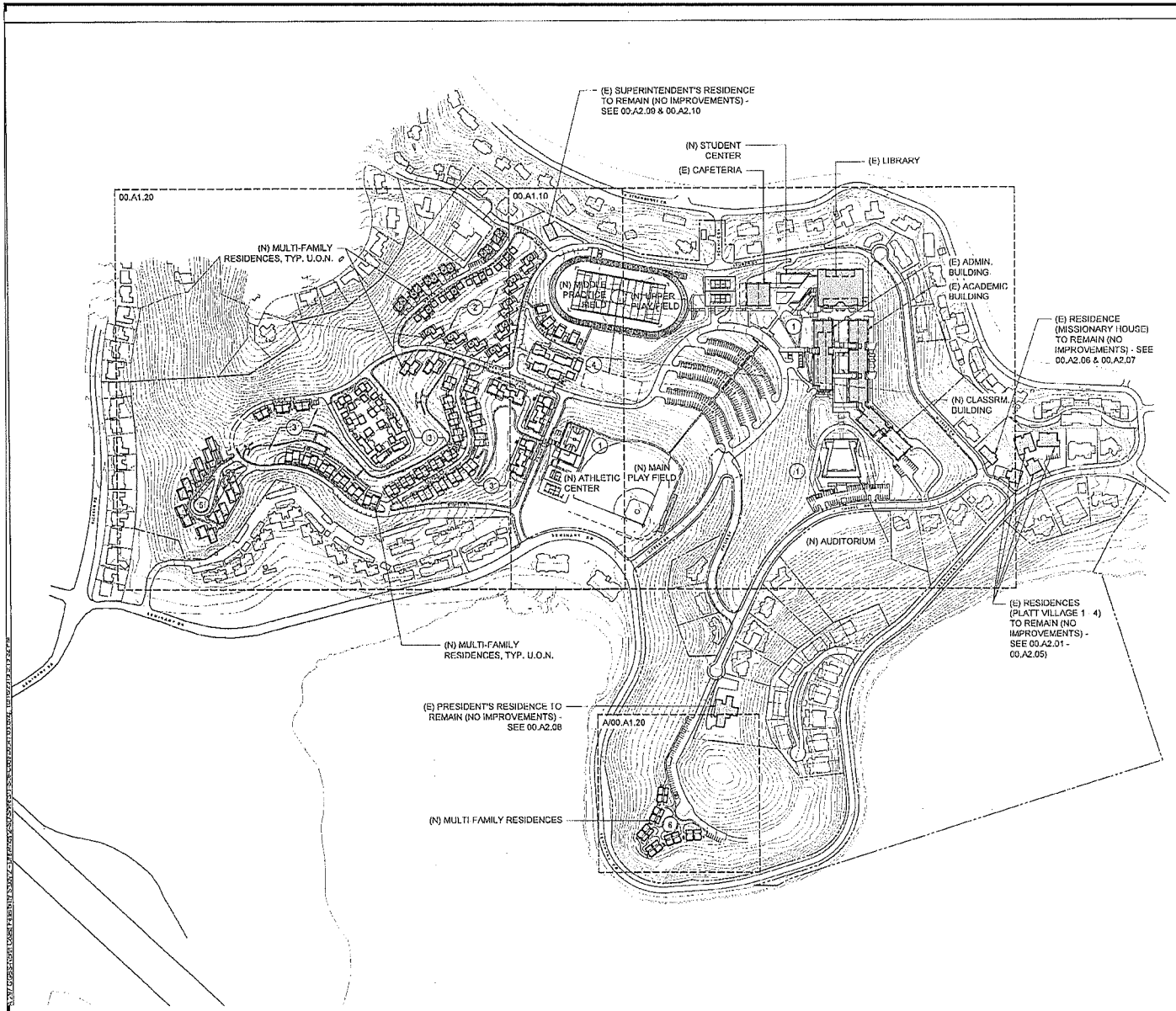
DATE MAY 2016
JOB NO. 7694-01
DWG NO. N769401FIG3
DRAWN IDA
CHK'D DJR
APP'D DJR

SITE DEMOLITION PLAN
THE SEMINARY
MILL VALLEY, CALIFORNIA

CLIENT NORTH COAST LAND HOLDINGS, LLC

FIGURE NO. 3

REV. NO.



SHEET NOTES

1. ACADEMIC CAMPUS PLANNING AREA
2. REED / STORER / SHUCK PLANNING AREA
3. HODGES / SHUCK PLANNING AREA
4. DORMITORY HILL PLANNING AREA
5. SHUCK DRIVE KNOLL PLANNING AREA
6. CHAPEL DRIVE ("SEMINARY POINT") PLANNING AREA

LEGEND

- (E) BUILDINGS
- (N) BUILDINGS PROPOSED

0 100' 200' 400'

PROJECT NORTH

FIGURE NO. 4

REV. NO.

Purcell, Rhoades & Associates
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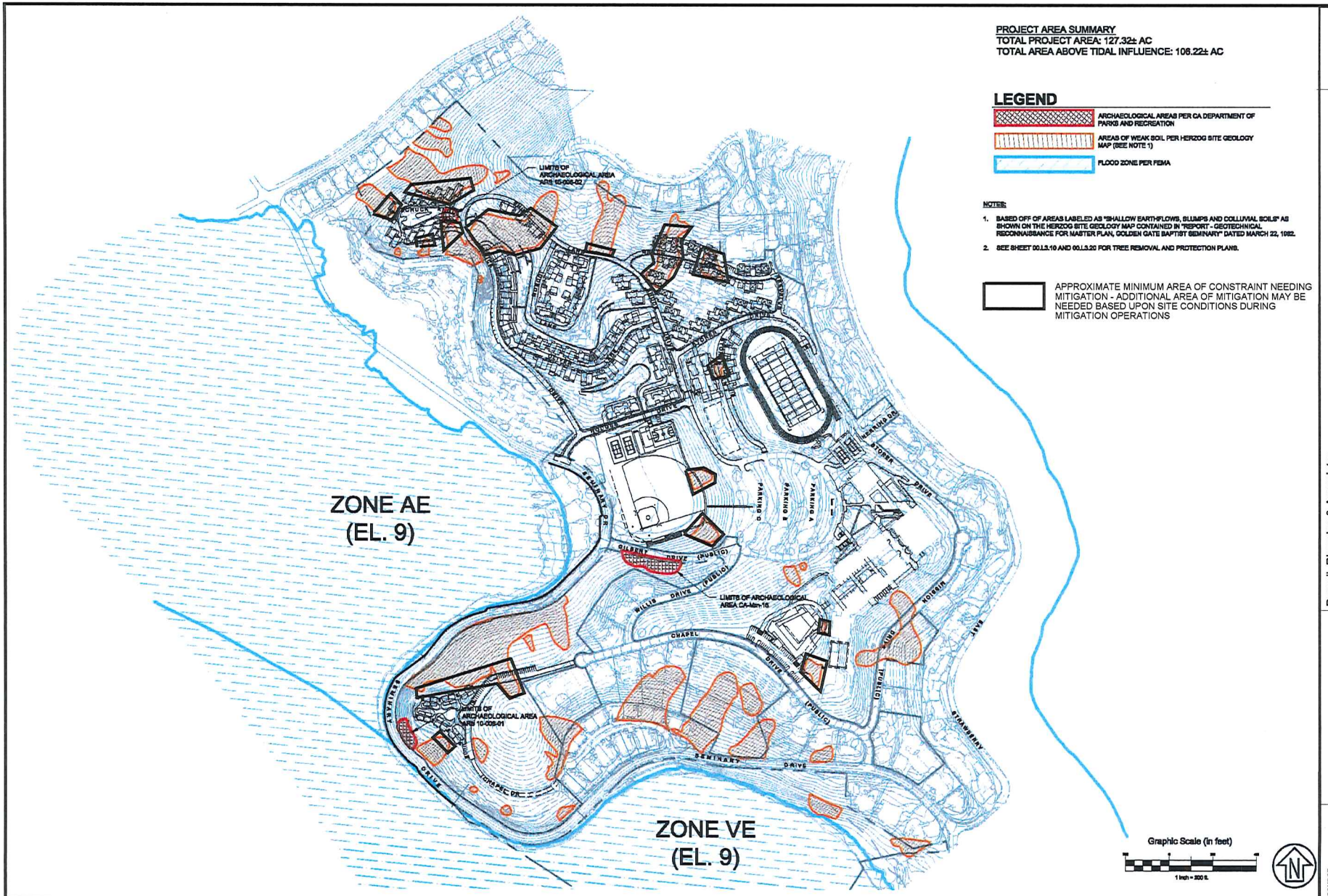
SITE DEVELOPMENT PLAN
THE SEMINARY
MILL VALLEY, CALIFORNIA

CLIENT NORTH COAST LAND HOLDINGS, LLC

DATE MAY 2016
JOB NO. 7694-01
DWG NO. N769401FIG4
DRAWN IDA
CHK'D DJR
APP'D DJR



PROJECT AREA SUMMARY
TOTAL PROJECT AREA: 127.32± AC
TOTAL AREA ABOVE TIDAL INFLUENCE: 106.22± AC

LEGEND

- ARCHAEOLOGICAL AREAS PER CA DEPARTMENT OF PARKS AND RECREATION
- AREAS OF WEAK SOIL PER HERZOG SITE GEOLOGY MAP (SEE NOTE 1)
- FLOOD ZONE PER FEMA

NOTES:

1. BASED OFF OF AREAS LABELED AS "SHALLOW EARTHFLOWS, SLUMPS AND COLLUVIAL SOILS" AS SHOWN ON THE HERZOG SITE GEOLOGY MAP CONTAINED IN "REPORT - GEOTECHNICAL RECONNAISSANCE FOR MASTER PLAN, GOLDEN GATE BAPTIST SEMINARY" DATED MARCH 22, 1982.
2. SEE SHEET 00.L3.10 AND 00.L3.20 FOR TREE REMOVAL AND PROTECTION PLANS.

APPROXIMATE MINIMUM AREA OF CONSTRAINT NEEDING MITIGATION - ADDITIONAL AREA OF MITIGATION MAY BE NEEDED BASED UPON SITE CONDITIONS DURING MITIGATION OPERATIONS

Graphic Scale (in feet)
1 Inch = 300 ft.

SOURCE: CSW/ST2

DATE JUNE 2016
JOB NO. 7694-01
DWG NO. N769401FIG 5
DRAWN IDA
CHK'D DJR
APP'D DJR

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CONSTRAINTS MAP AND APPROXIMATE MITIGATION LIMIT
THE SEMINARY
MILL VALLEY, CALIFORNIA

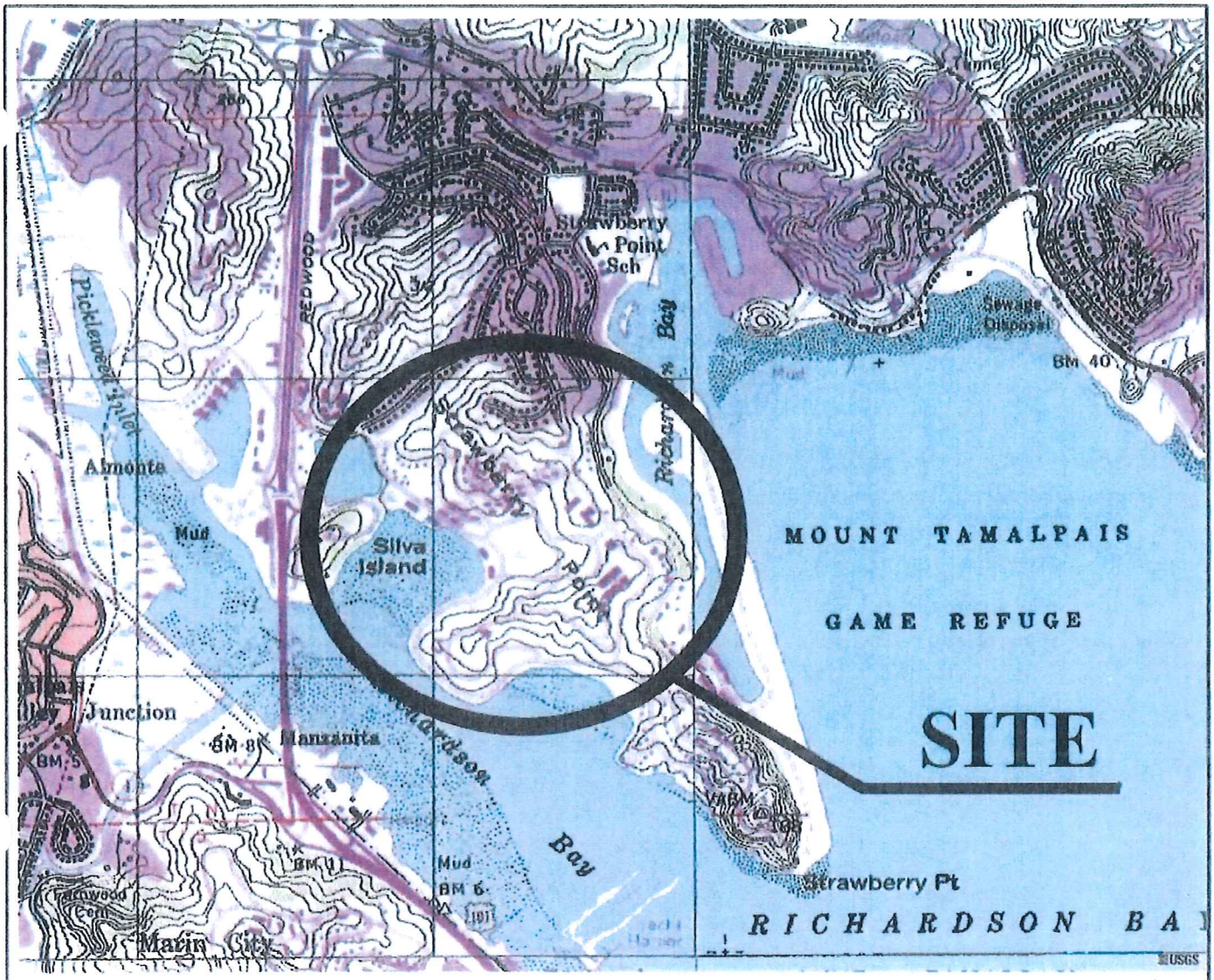
CLIENT NORTH COAST LAND HILDINGS, LLC

FIGURE NO. 5

REV. NO.

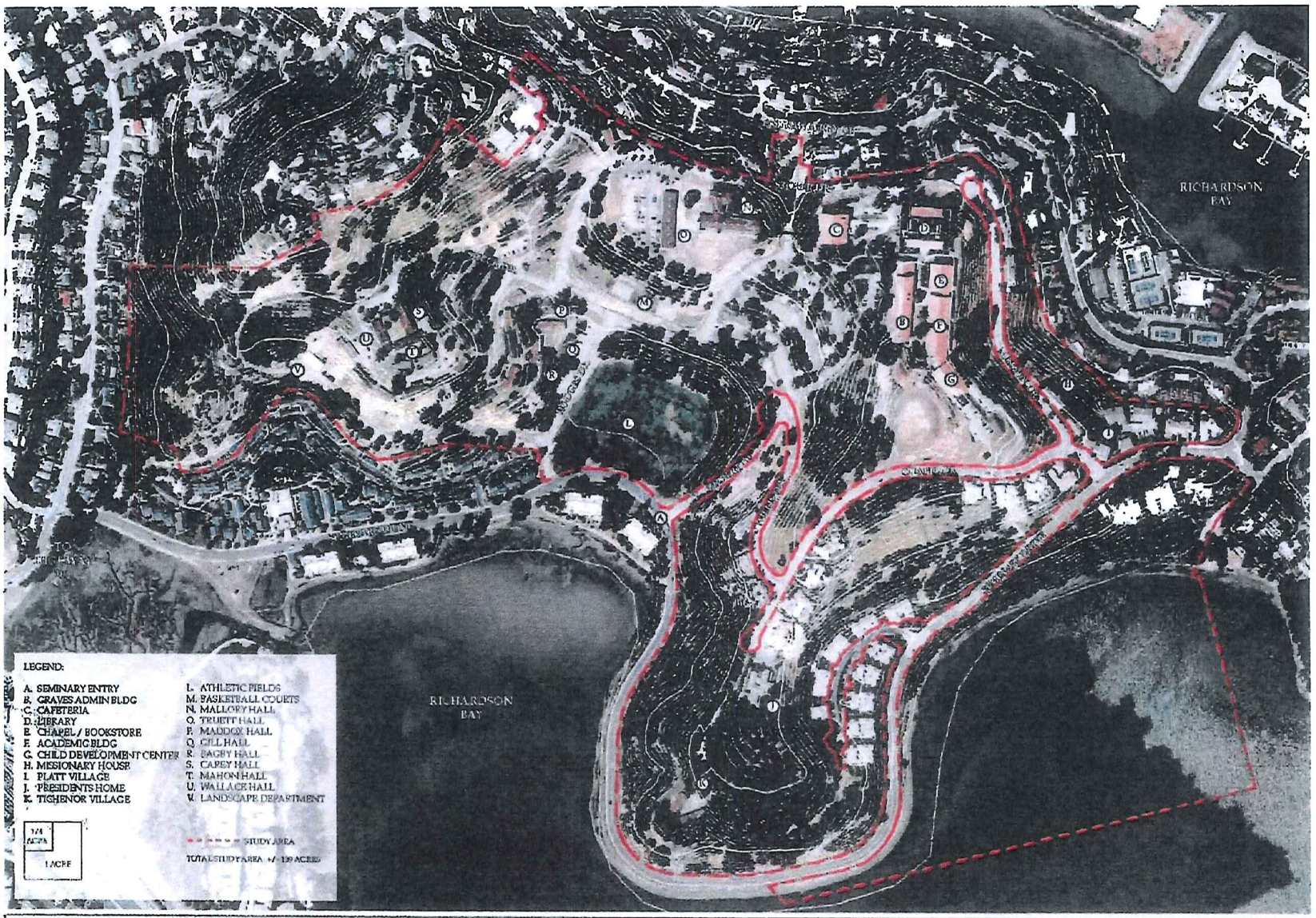
APPENDIX A

PRA FIGURES FROM STAGE 1 FEASIBILITY STUDY



N

NOTES	DATE MAY 2010	Purcell, Rhoades & Associates	
	JOB NO. 7463-01	Consultants in the Applied Earth Sciences	
	DWG NO. H746301FIG1	**SITE LOCATION MAP**	FIGURE NO
	DRAWN IDA	GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY	1
	CHK'D DJR	MILL VALEY, CALIFORNIA	
	APP'D DJR	CLIENT HARTMARIN	REV. NO.



HARTMARIN HART HOWERTON

GOLDEN GATE
BAPTIST THEOLOGICAL SEMINARY

CAMPUS PLAN

N 0 100 200

Purcell, Rhoades & Associates
Consultants in the Applied Earth Sciences

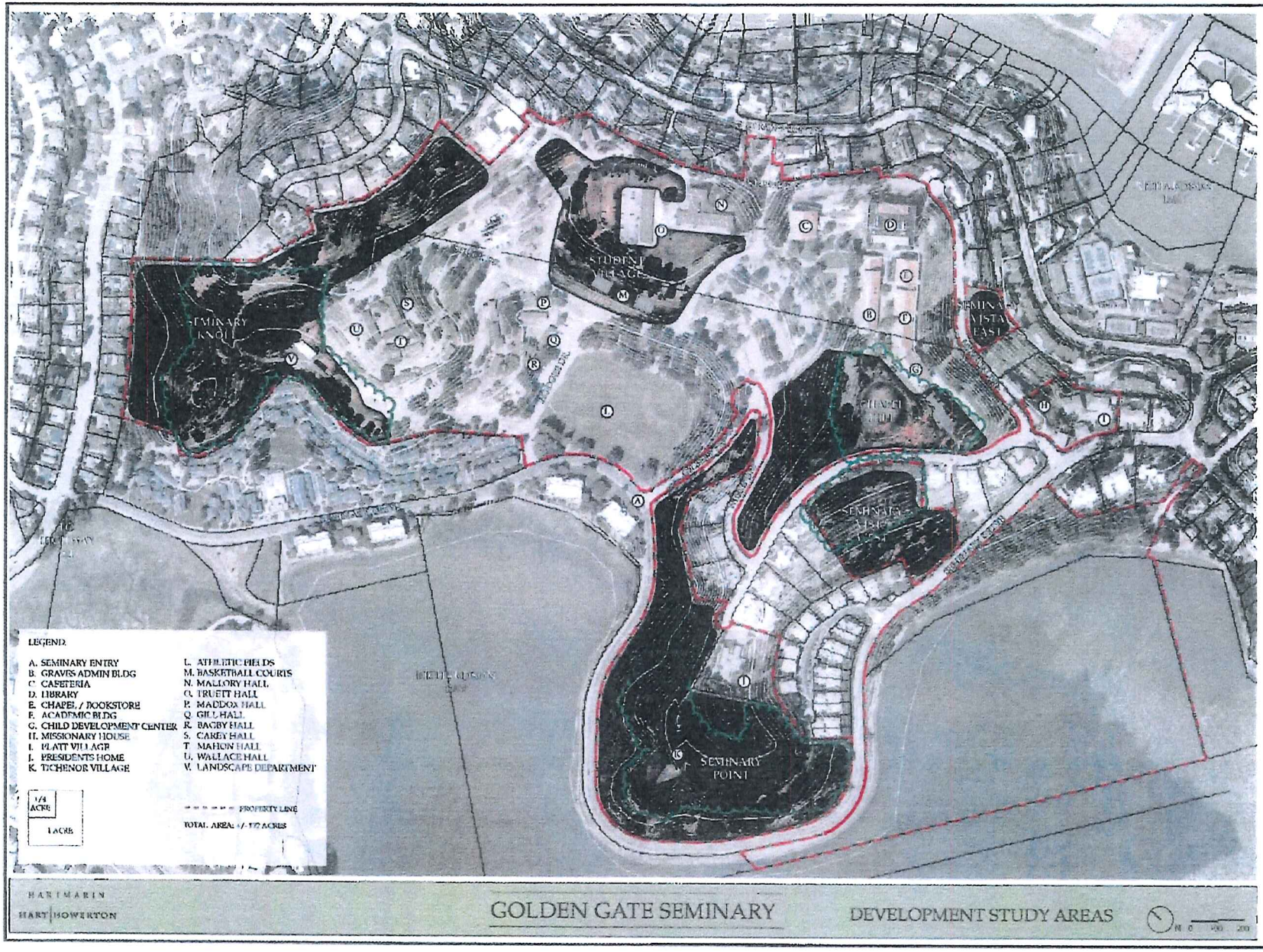
CAMPUS PLAN
GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
MILL VALLEY, CALIFORNIA

DATE	MAY 2010
JOB NO.	7463-01
DWG NO.	H746301FIG2
DRAWN	CA
CHK'D	DJR
APP'D	CJR

CLIENT HARTMARIN

FIGURE NO. 2

REV. NO.



HARTMARIN

HART | HOWERTON

GOLDEN GATE SEMINARY

DEVELOPMENT STUDY AREAS

Purcell, Rhoades & Associates
Consultants in the Applied Earth Sciences

DEVELOPMENT SITE PLAN
GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
MILL VALLEY, CALIFORNIA

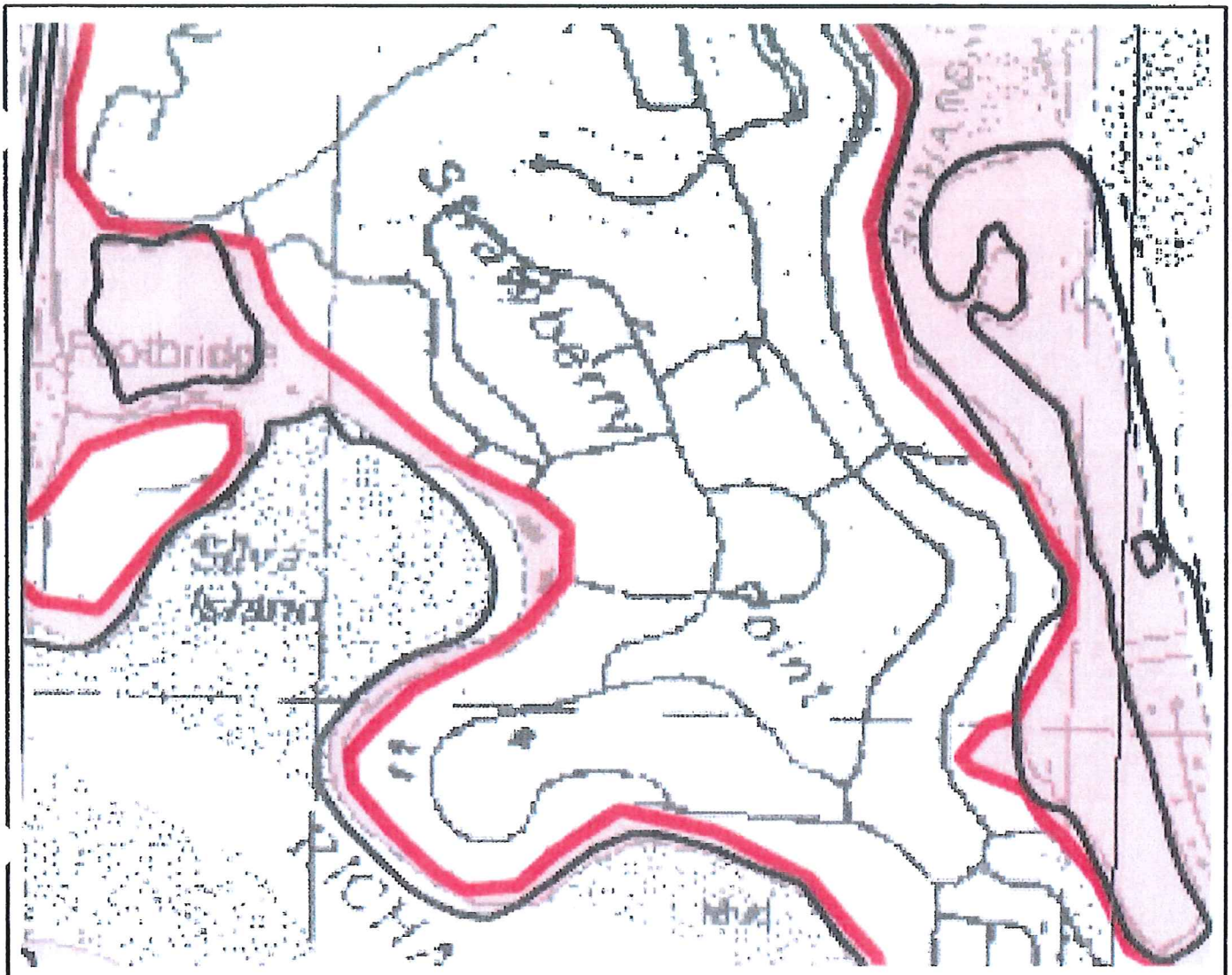
HARTMARIN

DATE	MAY 2010
JOB NO.	7435-01
DWG NO.	H746901FIG3
DRAWN	DA
CHKD	DJR
APP'D	DJR

CLIENT

FIGURE NO. 3

REV. NO.



Tsunami Inundation Line

Tsunami Inundation Area

Mean High Tide Line

N

NO SCALE

NOTES

SOURCE:

CGS (2009)

DATE	MAY 2010
JOB NO.	7463-01
DWG NO.	H746301FIG4
DRAWN	IDA
CHK'D	DJR
APP'D	DJR

Purcell, Rhoades & Associates

Consultants in the Applied Earth Sciences

TSUNAMI INUNDATION LINE

GOLDEN GATE BAPTIST SEMINARY

MILL VALEY, CALIFORNIA

CLIENT HARTMARIN

FIGURE NO. 4

REV. NO.

HARTMARIN HART·HOWERTON

GOLDEN GATE
BAPTIST THEOLOGICAL SEMINARY

CAMPUS PLAN

N 0 100 200

Purcell, Rhoades & Associates
Consultants in the Applied Earth Sciences

FIGURE NO. 5

SITE AERIAL PHOTO AND PRA BORING LOCATIONS
GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
MILL VALLEY, CALIFORNIA

CLIENT HARTMARIN

REV. NO.

DATE	MAY 2009
JOB NO.	7493-01
DWG NO.	P7493001.FIG5
DRAWN	IDA
CHKD	DJR
APP'D	DJR

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 4/20/2010	PAGE 1 OF 1
DRILL: Hand Auger DRILLER: Purcell, Rhoades & Associates LOCATION: See Site Geologic Map		BORING ELEV.: 75' msl BORING DIAM.: 3-1/2 INCHES	BORING NO. **B-1**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft.	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1		1-1 1-2		SILTY CLAY WITH SILTSTONE PARTICLES to ½", medium to dark brown, moist, transitioning to SILTSTONE, very hard at 1 foot.										
2				**BORING TERMINATED AT 1.5 FEET** **NO GROUNDWATER ENCOUNTERED.**										
3														
4				Bulk sample										
5				2-inch core sample										
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														
26														
27														
28														
29														
30														

Purcell, Rhoades & Associates
Consultants in the Applied Earth Sciences

EXPLORATORY BORING LOG B-1
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
6

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 4/20/2010	PAGE 1 OF 1
DRILL: Hand Auger DRILLER: Purcell, Rhoades & Associates LOCATION: See Site Geologic Map		BORING ELEV.: 70' msl BORING DIAM.: 3-1/2 INCHES	BORING NO. **B-2**

FIELD				DESCRIPTION	LABORATORY										
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft.	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1		2-1		SANDY CLAY WITH SILTSTONE, light brown orange, very moist some large SILTSTONE to 1", roots, mottled										
2														
3		2-2		SANDY SILT lense, medium brown, moist										
4				SANDY CLAY, orange/gray, mottled, moist, native, transition to very weathered SANDSTONE, orange gray, moist										
5		2-3		**BORING TERMINATED AT 5 FEET** **NO GROUNDWATER ENCOUNTERED.**										
6				Bulk sample										
7														
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EXPLORATORY BORING LOG B-2
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
7

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 4/20/2010	PAGE 1 OF 1
DRILL: Hand Auger DRILLER: Purcell, Rhoades & Associates LOCATION: See Site Geologic Map.		BORING ELEV.: 175' msl BORING DIAM.: 3-1/2 INCHES	BORING NO. **B-3**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft.	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1		3-1		SANDY CLAY WITH LARGE SILTSTONE, mottled dark brown, moist, refusal to drilling.										
				BORING TERMINATED AT 1 FEET **NO GROUNDWATER ENCOUNTERED.**										
				Bulk sample										

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EXPLORATORY BORING LOG B-3
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
8

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 4/20/2010	PAGE 1 OF 1
DRILL: Hand Auger DRILLER: Purcell, Rhoades & Associates LOCATION: See Site Geologic Map.		BORING ELEV.: 100' msl BORING DIAM.: 3-1/2 INCHES	BORING NO. **B-4**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft.	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SANDY CLAY WITH GRAVEL AND SILTSTONE, mottled brown to orange, moist, very hard, sandstone/siltstone/claystone to 3-inch diameter										
2														
3		4-1		SANDY SILT WITH CLAY, medium brown, orange lenses, very moist										
4				Standing water visible on soil, some rust color Some bedrock particles to 1/4-inch diameter,										
5		4-2		mottled brown, rust, blue										
6				**BORING TERMINATED AT 5 FEET** **NO GROUNDWATER ENCOUNTERED.**										
7				Bulk sample										
8														
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EXPLORATORY BORING LOG B-4
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
9

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 4/22/2010	PAGE 1 OF 1
DRILL: Hand Auger DRILLER: Purcell, Rhoades & Associates LOCATION: See Site Geologic Map.		BORING ELEV.: 77' msl BORING DIAM.: 3-1/2 INCHES	BORING NO. **B-5**

FIELD				DESCRIPTION	LABORATORY										
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft.	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SILTY CLAY, mottled light to medium brown, very moist to saturated										
2				SILTY CLAY WITH SILTSTONE AND SANDSTONE PARTICLES TO 1/2-inch diameter, mottled orange/brown, very moist to saturated loose, caving, water seeping from 1 to 2-1/2 feet										
3				SANDY SILT, medium brown, moist										
4		5-1		SILTY CLAY WITH SILTSTONE AND SANDSTONE PARTICLES TO 1/2-inch diameter, mottled orange/brown, very moist to saturated loose, caving, water seeping from 1 to 2-1/2 feet										
5				**BORING TERMINATED AT 5 FEET** **NO GROUNDWATER ENCOUNTERED.**										
6														
7				Bulk sample										
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EXPLORATORY BORING LOG B-5
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
10

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 4/22/2010	PAGE 1 OF 1
DRILL: Hand Auger DRILLER: Purcell, Rhoades & Associates LOCATION: See Site Geologic Map.		BORING ELEV.: 92' msl BORING DIAM.: 3-1/2 INCHES	BORING NO. **B-6**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft.	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SILTY CLAY AND SANDY CLAY WITH BEDROCK, mottled, moist										
2		6-1												
3		6-2		SILTY CLAY WITH WEATEHRED CLAYSTONE, mottled gray, moist SILTSTONE, weathered, medium gray, moist										
4				**BORING TERMINATED AT 4 FEET** **NO GROUNDWATER ENCOUNTERED.**										
5														
6														
7				Bulk sample										
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EXPLORATORY BORING LOG B-6
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
11

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 4/22/2010	PAGE 1 OF 1
DRILL: Hand Auger DRILLER: Purcell, Rhoades & Associates LOCATION: See Site Geologic Map.		BORING ELEV.: 95' msl BORING DIAM.: 3-1/2 INCHES	BORING NO. **B-7**

FIELD				DESCRIPTION	LABORATORY										
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft.	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
				SANDY SILT, medium brown, moist										
				SILTY CLAY WITH WEATHERED CLAYSTONE, mottled gray, moist										
1				SANDSTONE, very dense, yellow brown, moist										
				BORING TERMINATED AT 0.75 FEET										
				NO GROUNDWATER ENCOUNTERED.										
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EXPLORATORY BORING LOG B-7
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
12

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 4/22/2010	PAGE 1 OF 1
DRILL: Hand Auger DRILLER: Purcell, Rhoades & Associates LOCATION: See Site Geologic Map.		BORING ELEV.: 140' msl BORING DIAM.: 3-1/2 INCHES	BORING NO. **B-8**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft.	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SANDY SILT WITH SILTSTONE, medium brown, moist										
				SANDY CLAY, orange brown mottled, very moist										
2				SANDSTONE/SILTSTONE, weathered, orange mottled, moist										
3				**BORING TERMINATED AT 2 FEET** **NO GROUNDWATER ENCOUNTERED.**										
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EXPLORATORY BORING LOG B-8
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
13

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: B-24 Truck Mounted Auger DRILLER: RAM Geotechnical LOCATION: See Site Geologic Map.	Hammer Weight: 140 lb Drop: 30 in	BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. **B-9**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1		9-1	50/3"	SANDSTONE/SILTSTONE, light brown, damp										
2				**BORING TERMINATED AT 1'-3"** **NO GROUNDWATER ENCOUNTERED.**										
3														
4														
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EXPLORATORY BORING LOG B-9
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
14

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: B-24 Truck Mounted Auger DRILLER: RAM Geotechnical LOCATION: See Site Geologic Map.	Hammer Weight: 140 lb Drop: 30 in	BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. **B-10**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SILTSTONE, weathered, orange brown, mosit										
2			10-65/6"	SILTSTONE, hard, gray, dry to damp										
3				**BORING TERMINATED AT 2.5 FEET.** **NO GROUNDWATER ENCOUNTERED.**										
4														
5														
6														
7														
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EXPLORATORY BORING LOG B-10
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
15

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: B-24 Truck Mounted Auger DRILLER: RAM Geotechnical LOCATION: See Site Geologic Map.	Hammer Weight: 140 lb Drop: 30 in	BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. **B-11**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SILTY SAND, with sandstone particles, orange brown, moist		SM								
2														
3				SANDY CLAY WITH GRAVEL (crushed aggregate base), orange										
4		11-1	18	brown, moist	Very Stiff	CL								
5														
6				SANDY CLAY, dark gray, very moist	Very Stiff	CL								
7														
8		11-2	11	SANDY CLAY, with siltstone particles, dark gray with some olive and rust, very moist to saturated	Stiff	CL	100	24	420					
9														
10														
11														
12				SANDY SILT WITH CLAY, rust, saturated										
13		11-3	24	▼ Groundwater encountered at 13.5 feet during drilling SILTY CLAY, some sand and small sandstone particles,orange, moist	Very Stiff	CL	92	29	2790					
14														
15														
16														
17				▼ Groundwater measured at 17.5 feet 5minuntes after drilling. Borehole not left open to remeasure.										
18		11-4	49	SANDSTONE, weathered, clayey, mottled orange, moist										
19				**BORING TERMINATED AT 18.5 FEET.** **GROUNDWATER ENCOUNTERED AT 13 FEET DURING DRILLING.**										
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EXPLORATORY BORING LOG B-11
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
16

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: Continuous Sample DRILLER: RAM Geotechnical LOCATION: See Site Geologic Map.	Hammer Weight: 70 lb Drop: 30 in	BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. **B-12**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1		12-1	16	SILTY CLAY, with sandstone and siltstone particles to 1-1/2", medium brown, moist	Stiff to Very Stiff	CL	106	18						
2		12-2	33/8"	SANDY SILT, with sandstone and siltstone, orange/gray, moist Bottom of sample: SANDSTONE, orange, moist		SM								
3				**BORING TERMINATED AT 2'2".** **NO GROUNDWATER ENCOUNTERED.**										
4														
5														
6														
7														
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EXPLORATORY BORING LOG B-12
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
17

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: B-24 Truck Mounted Rig DRILLER: RAM Geotechnical LOCATION: In gravel roadway, see Plan	Hammer Weight: 140 lb Drop: 30 in	BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. **B-13**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
0				SANDY GRAVEL, medium brown, moist		GM								
1				SILTY SAND WITH GRAVEL, orange/brown, moist		SM								
2														
3		13-1	16	SILTY CLAY, some sandstone, medium brown with rust, very moist	Stiff to Very Stiff	CL	107	19	2930					
4				SANDY CLAY WITH SILTSTONE, orange, moist to very moist		CL								
5														
6				Harder drilling at 6 feet.										
7														
8		13-2	80/ 11"	SILTSTONE/CLAYSTONE, mottled orange, moist										
9				**BORING TERMINATED AT 8.5 FEET.** **NO GROUNDWATER ENCOUNTERED.**										
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EXPLORATORY BORING LOG B-13
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
18

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: B-24 Truck Mounted Auger DRILLER: RAM Geotechnical LOCATION: Unpaved Road, See Site Geologic Map.	Hammer Weight: 140 lb Drop: 30 in	BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. **B-14**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SILTY SAND WITH GRAVEL, orange, damp		SM								
2		15-1	67	SANDSTONE/SILTSTONE, clayey, mottled orange, damp										
3				**BORING TERMINATED AT 3 FEET.** **NO GROUNDWATER ENCOUNTERED.**										
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EXPLORATORY BORING LOG B-14
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
19

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: B-24 Truck Mounted Rig DRILLER: RAM Geotechnical LOCATION: See Site Geologic Map	Hammer Weight: 140 lb Drop: 30 in	BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. **B-15**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SANDY CLAY, medium to dark brown, moist		CL								
2														
3		15-1	37	SANDY CLAY WITH SANDSTONE, mottled orange/brown, moist	Hard	CL	111	16	5055					
4														
5														
6				Refusal drilling at 6.5 feet, SPT sample barrel no penetration, moved 15 feet north to continue drilling. Cobble Float.										
7														
8		15-2	48	SILTSTONE, float, gray, damp										
9														
10														
11														
12				Moisture content increasing										
13		15-2	48	SILTY CLAY, siltstone particles, medium brown, moist	Stiff	CL								
14														
15														
16				SANDY CLAY, orange/brown, very moist to saturated										
17					▼ Groundwater measured at 17 feet during drilling.									
18		15-2	48	SANDY CLAY, with sandstone, weathered bedrock.										
19				**BORING TERMINATED AT 18.5 FEET.** **GROUNDWATER ENCOUNTERED AT 17 FEET.**										
20														
21														
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EXPLORATORY BORING LOG B-15
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
20

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: B-24 Truck Mounted Auger DRILLER: RAM Geotechnical LOCATION: See Site Geologic Map.	Hammer Weight: 140 lb Drop: 30 in	BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. **B-16**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1														
2		15-1	67	SANDSTONE, orange, damp										
3				**BORING TERMINATED AT 2.5 FEET.** **NO GROUNDWATER ENCOUNTERED.**										
4														
5														
6														
7														
8														
9														
10														
11														
12														
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EXPLORATORY BORING LOG B-16
Golden Gate Baptist Seminary
Mill Valley, California
Client: Hart Marin

FIGURE NO.
21

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jtm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: B-24 Truck Mounted Auger DRILLER: RAM Geotechnical Hammer Weight: 140 lb LOCATION: Unpaved Road, See Site Geologic Map. Drop: 30 in		BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. **B-17**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SILTY SAND WITH GRAVEL, orange, damp		SM								
2				SANDY SILT, siltstone particles, orange/brown, damp		ML								
3		17-1	42	SANDY SILT, siltstone and claystone particles, mottled orange brown, moist	Hard	ML	119	12	3290					
4														
5														
6														
7				Top of sample: SILTY CLAY WITH SAND, small claystone particles, dark brown, moist to very moisy										
8		17-2	26	Bottom of sample: SILTY CLAY, siltstone particles, blue/gray, very moist	Very Stiff	CL		11		31	11			
9														
10				Hard drilling at 11'										
11														
12		17-3	42/2"	SILTSTONE, blue to dark red, moist										
13				**BORING TERMINATED AT 12'2".** **NO GROUNDWATER ENCOUNTERED.**										
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														
26														
27														
28														
29														
30														

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EXPLORATORY BORING LOG B-17
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
22

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: B-24 Truck Mounted Auger DRILLER: RAM Geotechnical LOCATION: See Site Geologic Map.	Hammer Weight: 140 lb Drop: 30 in	BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. **B-18**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SILTY SAND WITH GRAVEL, orange, damp		SM								
2														
3		18-1	25	SILTY CLAY WITH SAND, mottled orange/brown, moist Hard drilling at 4'	Very Stiff	CL-ML	112	16	6260	24	6			
4														
5														
6				SANDY CLAY, orange, moist		CL-ML								
7														
8		18-2	67	SANDSTONE, weathered, orange, moist **BORING TERMINATED AT 8 FEET.** **NO GROUNDWATER ENCOUNTERED.**										
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
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29														
30														

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EXPLORATORY BORING LOG B-18
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
23

EXPLANATION

Lithologic contact: dashed where approximate, dotted where concealed queried where uncertain

Strike and dip of bedding

Sheared bedrock

Shallow earthflows, slumps and colluvial soils

Scarp, number indicates height in feet

Seepage

Area of poor drainage

Area of gulley erosion

Test pit (SEE APPENDIX B FOR HERZOG LOGS)

Test boring (SEE APPENDIX B FOR HERZOG LOGS)

Estimated depth to competent material

Probe drill holes–depth to rock

Franciscan Rocks

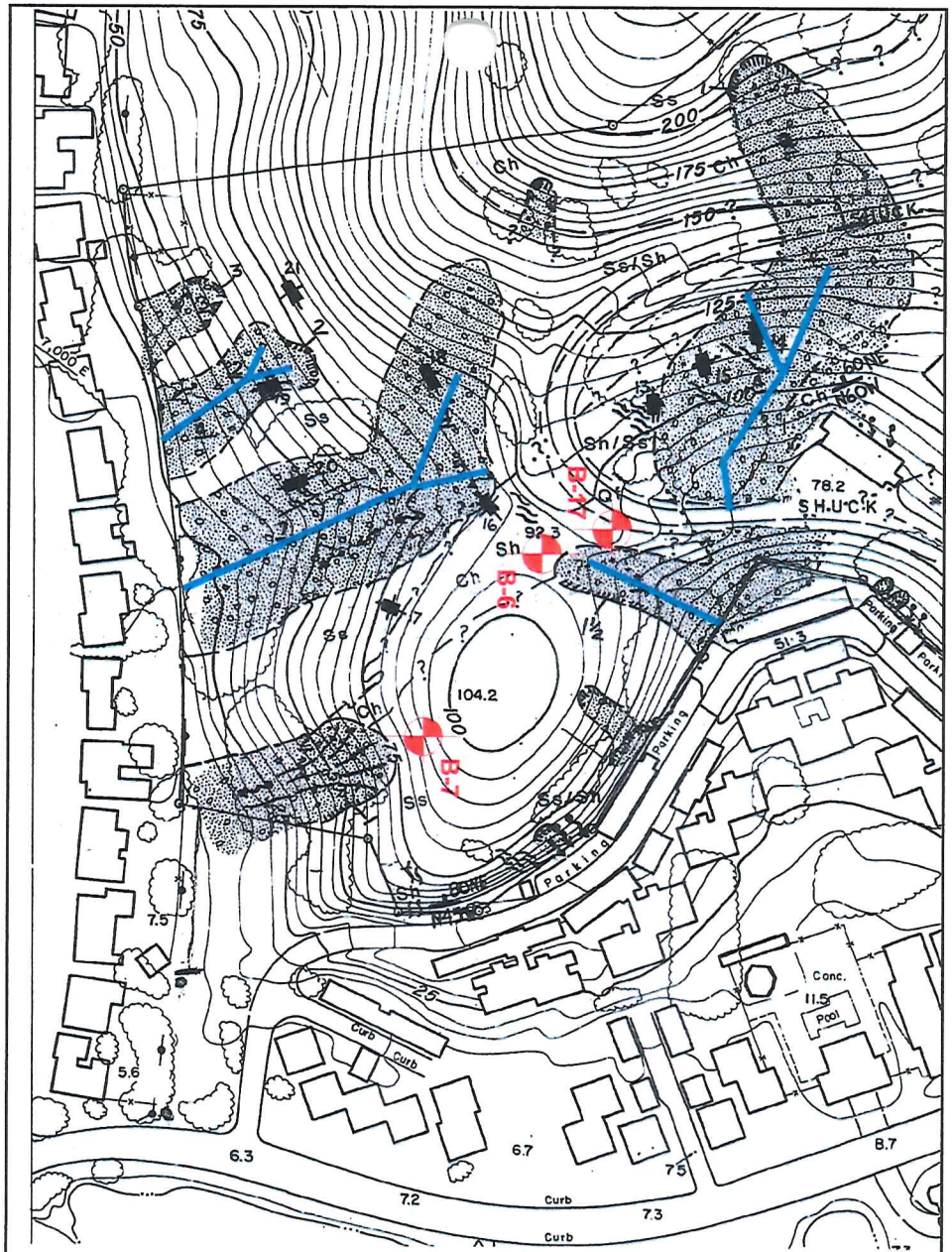
- Ss SANDSTONE
- Sh SHALE
- Ss/Sh SANDSTONE AND SHALE
- Ch CHERT
- Sp SERPENTINITE

- Qm BAY MUD
- Qf FILL

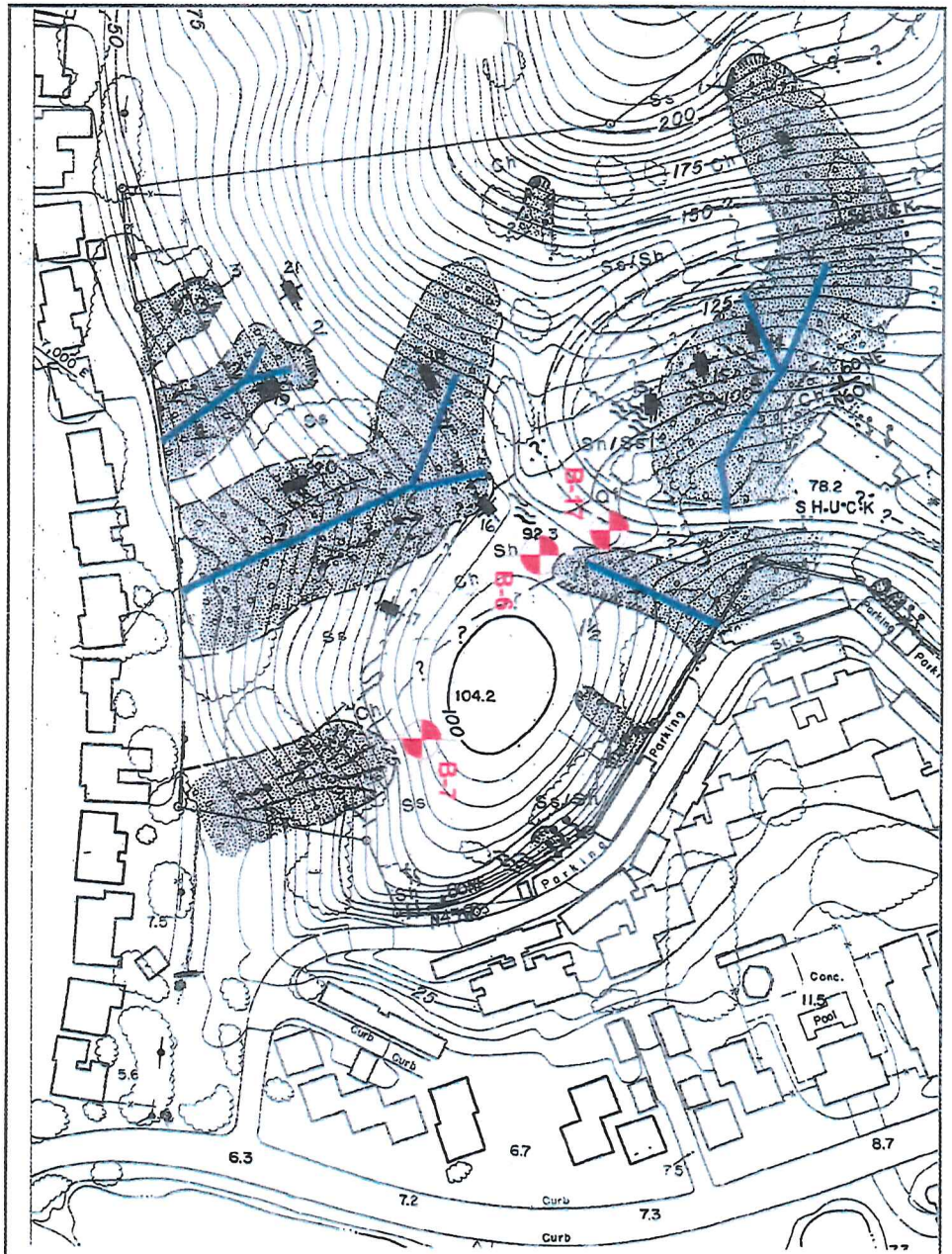
Subdrains from Herzog Mitigation Map (Appendix A-2)

PRA BORING & PROBE LOCATIONS (SEE FIGURES 6 THROUGH 23 FOR LOGS)

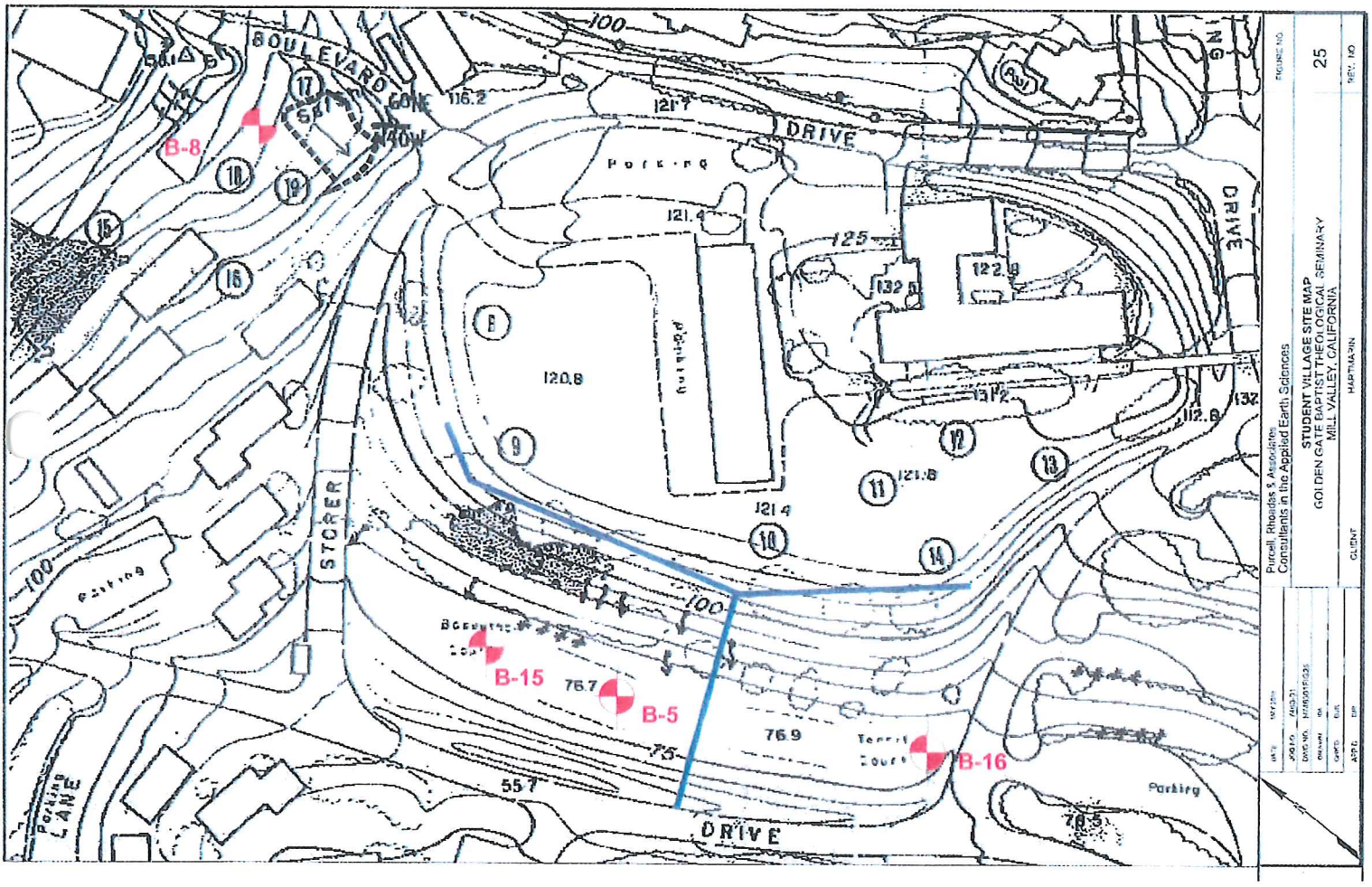
NOTES	DATE MAY 2010	Purcell, Rhoades & Associates Consultants in the Applied Earth Sciences	
	JOB NO. 7463-01		
	DWG NO. H746301FIG24-A	KEY TO SITE MAPS GOLDEN GATE BAPTIST SEMINARY MILL VALEY, CALIFORNIA	FIGURE NO. 24-A
	DRAWN IDA		
	CHK'D DJR		
	APP'D DJR	CLIENT HARTMARIN	REV. NO.



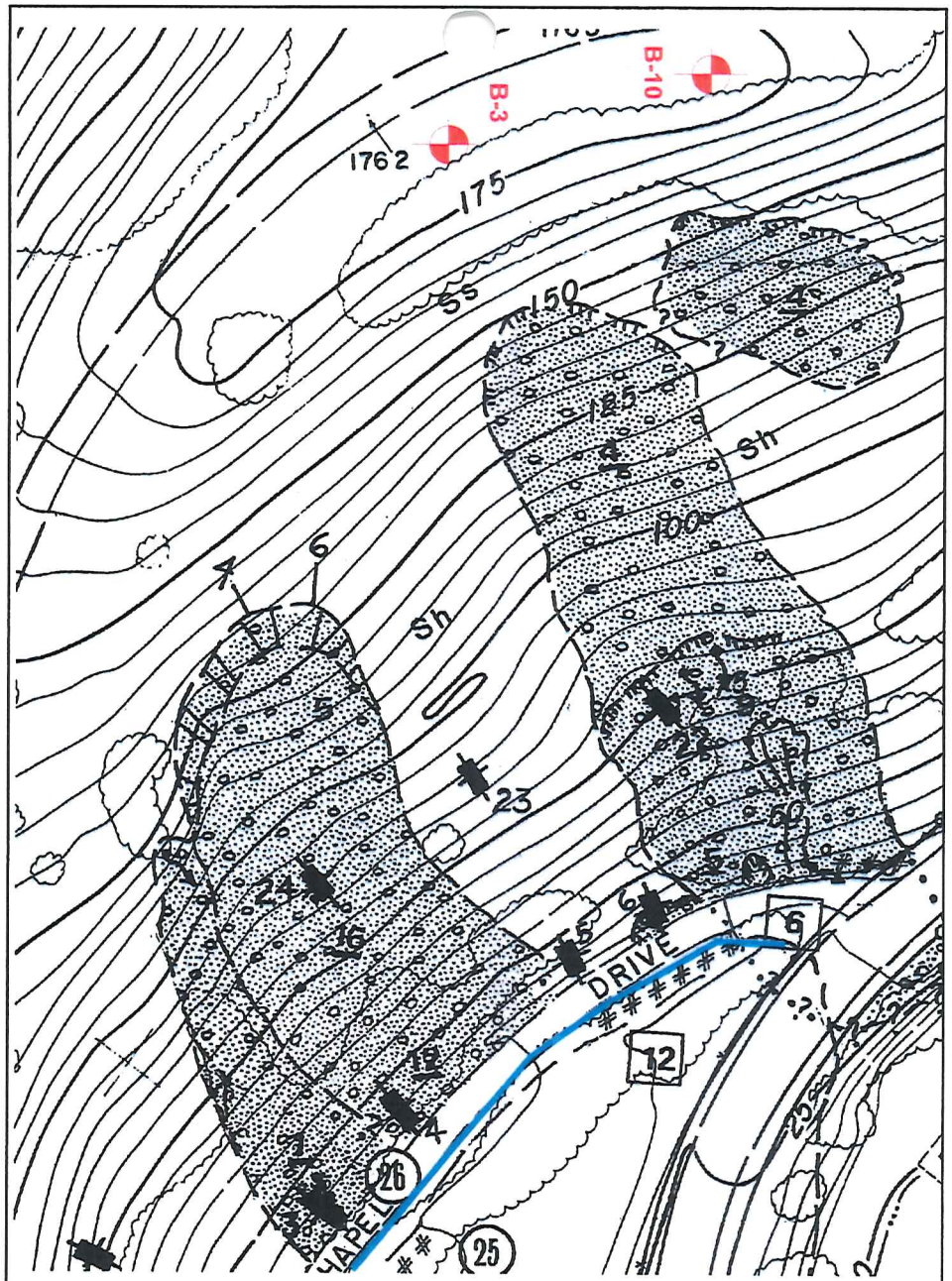
DATE MAY 2010 JOB NO. 7483-01 DWG NO. H748301FIG24 DRAWN IDA CHK'D DJR APP'D DJR	Purcell, Rhoades & Associates Consultants in the Applied Earth Sciences **SEMINARY KNOLLS SITE MAP** GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY MILL VALLEY, CALIFORNIA CLIENT HARTMARIN	FIGURE NO. 24 REV. NO.



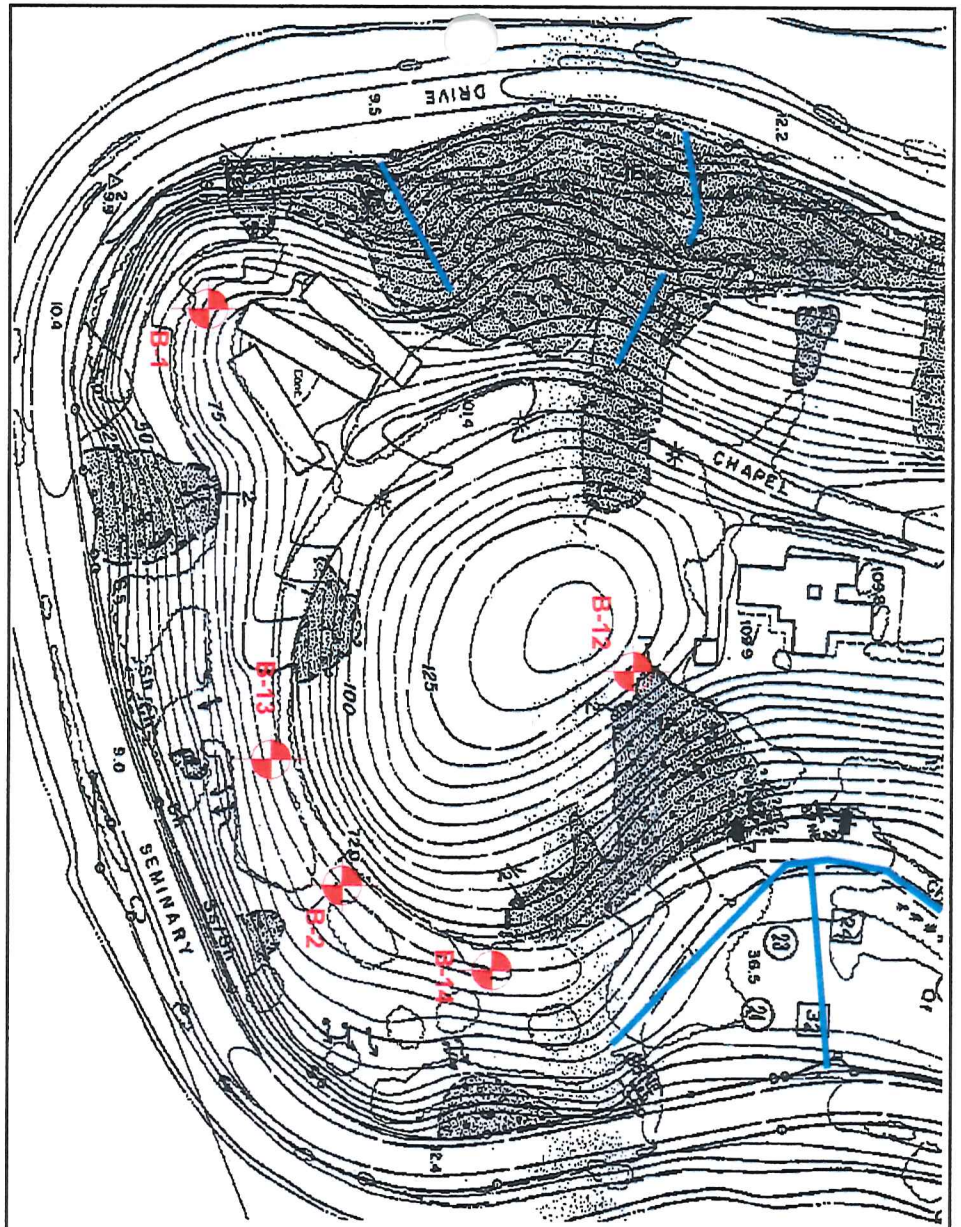
DATE	MAY 2010	Purcell, Rhoades & Associates Consultants in the Applied Earth Sciences	FIGURE NO.
JOB NO.	7463-D		
DWG NO.	H746301F.G24	SEMINARY KNOLLS SITE MAP GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY MILL VALLEY, CALIFORNIA	24
DRAWN	KHA		
CHK'D	DJR		
APP'D	DJR	CLIENT: HARTMARIN	REV. NO.


B-8
B-15
B-5
B-16
BOULEVARD
DRIVE
STORER
LANE
Parking
Tennis Courts
100
125
120.8
121.4
121.8
122.9
132.8
112.8
76.7
76.9
55.7
78.5
STUDENT VILLAGE SITE MAP
GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
MILL VALLEY, CALIFORNIA
Purcell, Rhoades & Associates
Consultants in the Applied Earth Sciences
FIGURE NO.
25
REV. NO

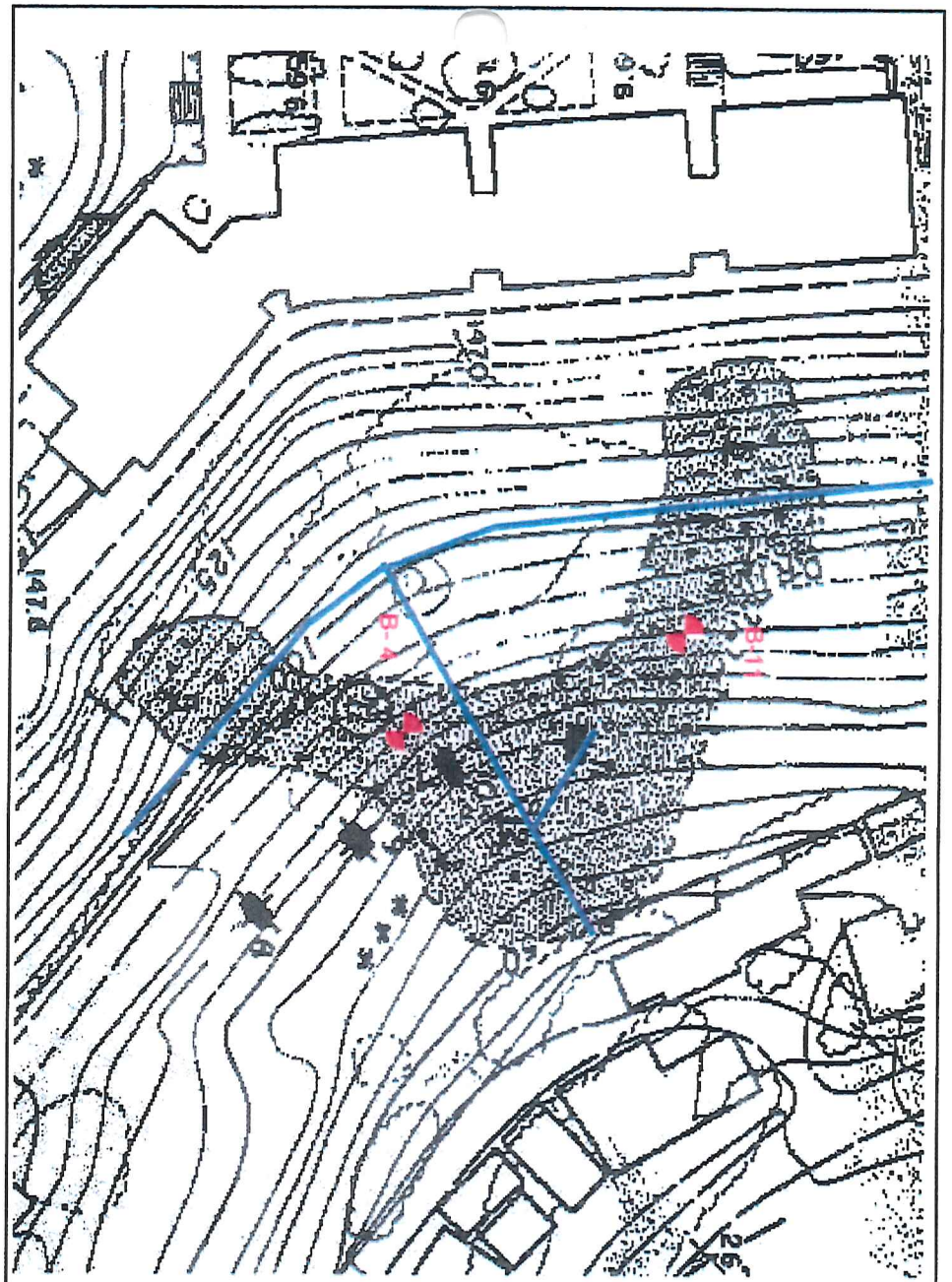
185.2
184.0
B-18
B-9
186.0
175
150
159.9
147.6
Gate
159.6
160.5
Portion
DRIVE
Purcell, Rhodes & Associates
Consultants in the Applied Earth Sciences
CHAPEL HILL SITE MAP
GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
MILL VALLEY, CALIFORNIA
26



DATE MAY 2010	Purcell, Rhoades & Associates Consultants in the Applied Earth Sciences		FIGURE NO.
JOB NO. 7463-01			
DWG NO. H746301FIGX27	**SEMINARY VISTA WEST SITE MAP** GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY MILL VALLEY, CALIFORNIA		27
DRAWN IDA			
CHK'D DJR			
APP'D DJR	CLIENT	HARTMARIN	REV. NO.



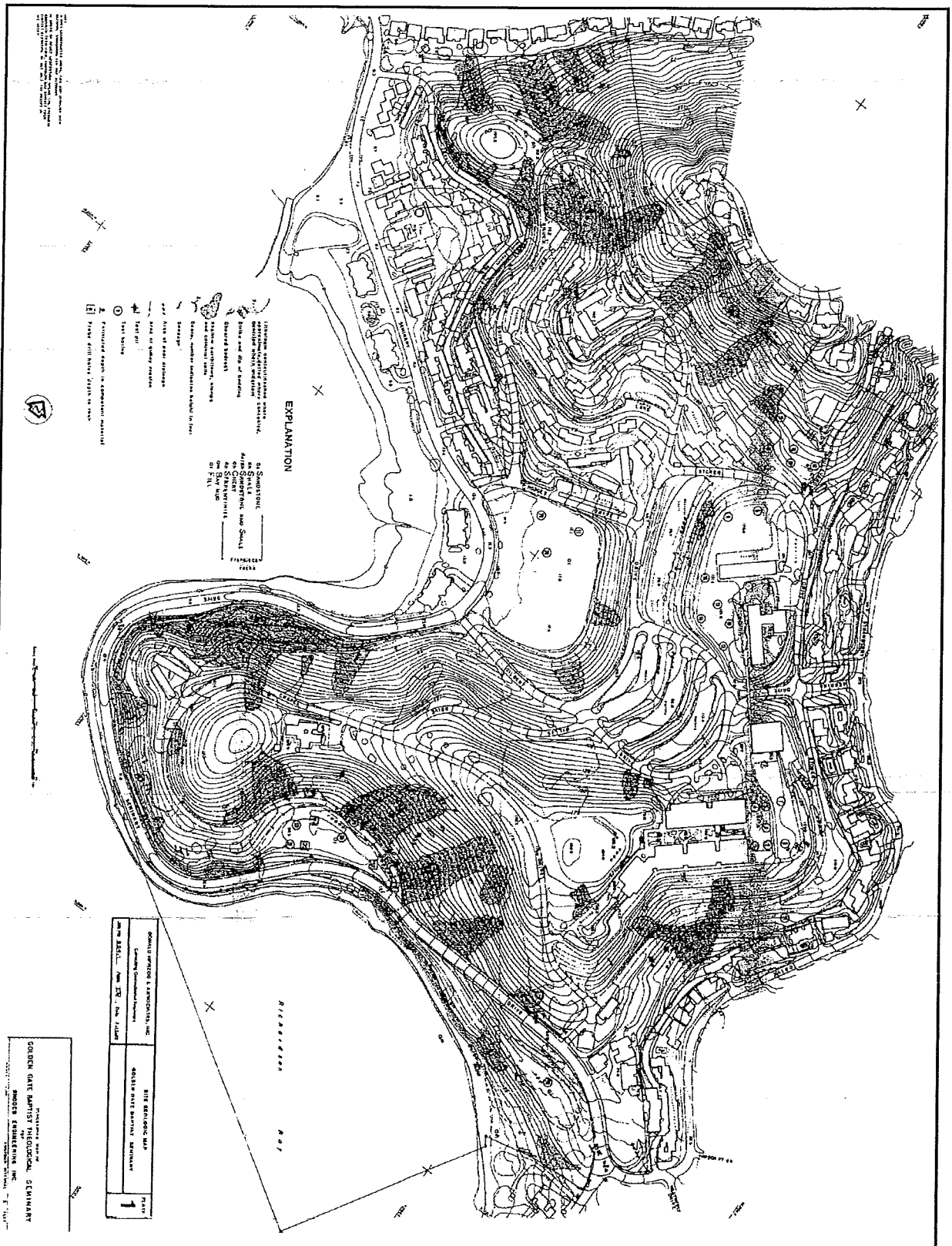
DATE	MAY 2010	Purcell, Rhoades & Associates Consultants in the Applied Earth Sciences	FIGURE NO.
JOB NO.	7463-01		
DWG NO.	H746301FIGX28	**SEMINARY POINT SITE MAP** GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY MILL VALLEY, CALIFORNIA	28
DRAWN	IDA		
CHK'D	DJR		
APP'D	DJR	CLIENT HARTMARIN	REV. NO.



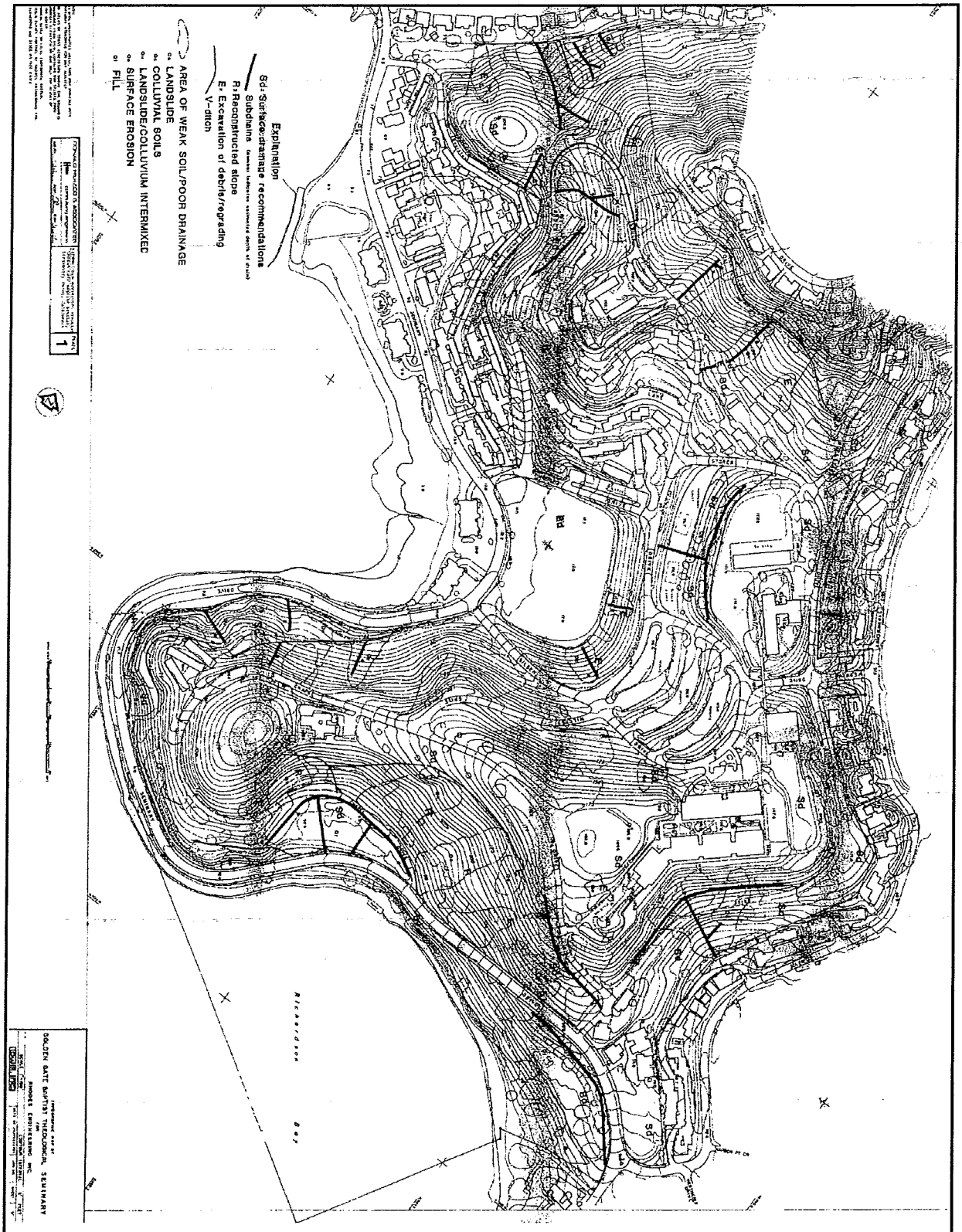
DATE	MAY 2010	Purcell, Rhoades & Associates Consultants in the Applied Earth Sciences	FIGURE NO.
JOB NO.	7483-31		
DWG NO.	H7483018G29	SEMINARY VISTA EAST SITE MAP GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY MILL VALLEY, CALIFORNIA	29
DRAWN	KA		
CHK'D	DJR		
APP'D	DJR	CLIENT HARTMARIN	REV. NO.

APPENDIX B

HERZOG GEOLOGIC MAP, RECOMMENDED MITIGATION MEASURES, EXPLORATORY BORINGS AND TEST PIT LOGS



DATE	MAY 20106	Purcell, Rhoades & Associates Consultants in the Applied Earth Sciences	FIGURE NO.
JOB NO.	7694-01		
DWG NO.	H769401APP B-1	HERZOG SITE GEOLOGY MAP THE SEMINARY MILL VALLEY, CALIFORNIA	B-1
DRAWN	IDA		
CHK'D	DJR		
APP'D	DJR	CLIENT NORTH COAST LAND HOLDINGS, LLC	REV. NO.



DATE	MAY 2016	Purcell, Rhoades & Associates Consultants in the Applied Earth Sciences	FIGURE NO.
JOB NO.	7694-01	HERZOG MITIGATION MEASURES MAP THE SEMINARY MILL VALLEY, CALIFORNIA	B-2
DWG NO.	H769401APP B-2		
DRAWN	IDA		
CHK'D	DJR		
APP'D	DJR	CLIENT NORTH COAST LAND HOLDINGS, LLC	REV. NO.

MAJOR DIVISIONS					TYPICAL NAMES
COARSE GRAINED SOILS (MORE THAN HALF IS LARGER THAN #200 SIEVE)	GRAVELS (MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE)	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS, GRAVEL - SAND MIXTURES
			GP		POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES
		GRAVELS WITH OVER 12% FINES	GM		SILTY GRAVELS, POORLY GRADED GRAVEL - SAND - SILT MIXTURES
			GC		CLAYEY GRAVELS, POORLY GRADED GRAVEL - SAND - CLAY MIXTURES
	SANDS (MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE)	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS, GRAVELLY SANDS
			SP		POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 12% FINES	SM		SILTY SANDS, POORLY GRADED SAND - SILT MIXTURES
			SC		CLAYEY SANDS, POORLY GRADED SAND - CLAY MIXTURES
FINE GRAINED SOILS (MORE THAN HALF IS SMALLER THAN #200 SIEVE)	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL		ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt		PEAT AND OTHER HIGHLY ORGANIC SOILS

UNIFIED SOIL CLASSIFICATION SYSTEM

Consol — Consolidation
LL — Liquid Limit (in %)
PL — Plastic Limit (in %)
G_s — Specific Gravity
SA — Sieve Analysis
■ "Undisturbed" Sample
⊠ Bulk Sample

	Shear Strength, psf	Confining Pressure, psf	
*Tx	320	(2600)	Unconsolidated Undrained Triaxial
TxCU	320	(3600)	Consolidated Undrained Triaxial
DS	2750	(2000)	Consolidated Drained Direct Shear
FVS	470		Field Vane Shear
*UC	2000		Unconfined Compression
LVS	700		Laboratory Vane Shear

Notes: (1) All strength tests on 2.8" or 2.4" diameter samples unless otherwise indicated.

(2) * indicates 1.4" diameter sample.

KEY TO TEST DATA

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Job No. 994.1 Appr: BZ Date 9/4/79

SOIL CLASSIFICATION CHART AND KEY TO TEST DATA
Baptist Seminary

PLATE 24

LIBRARY

LOG OF BORING 1 7 6 1 5 3 2

Equipment 6" Solid Auger 4 1

Elevation 148± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	* Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		BROWN SANDY SILT (ML) ~~topsoil and fill~~
		25/3"	4			3		BROWN SANDSTONE (Bedrock) highly weathered, partially decomposed, closely jointed, fine-grained, soft, friable. used tungsten-carbide bit after 3' (FRANCISCAN FORMATION)
		40/2"	7					
		30/1"	5			6		Free water not encountered
						9		NOTE: All rocks encountered in this project belong to the Franciscan Formation, mainly sandstone and shale (Cretaceous). The sandstone is gray and brown, thickly bedded, medium-grained, containing grains of quartz and feldspar. The shale is generally well-bedded siltstone, dark gray, stained brown by iron oxides along joints.
						12		
						15		

*280 lbs. falling 30 inches. Adjusted to SPT blows. O.D. of California Sampler = 0.3 inch.

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LOG OF BORING 1

Baptist Seminary
Mill Valley, California

PLATE 5

LIBRARY

LOG OF BORING 2

Equipment 6" Solid Auger

Elevation 147± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
			24	21	78	0		BLACK-BROWN SANDY SILT (ML) topsoil
			12/2"	10	127			BROWN SANDSTONE highly weathered, completely decomposed, soft
				10	121	3		BROWN SANDSTONE (Bedrock) highly weathered, partially decomposed, fine-grained, soft to medium hard
	0.5	1000				6		used tungsten-carbide bit in the sandstone
						9		
						12		
						15		Free water not encountered

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Consulting Soil & Foundation Engineers

Job No: 994.1 Appr: RT Date 9/4/79

LOG OF BORING 2

Baptist Seminary
Mill Valley, California

PLATE 6

LOG OF BORING 3

Equipment 6" Solid Auger

Elevation 147± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
			12/2"	8		0		BLACK-BROWN SANDY SILT (ML) topsoil
						3		GRAY-BROWN SANDSTONE (Bedrock) highly weathered, partially decomposed, fine-grained, low hardness
						6		
						9		
						12		Free water not encountered

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Job No: 994.1 Appr: BR Date 9/4/79

LOG OF BORING 3

Baptist Seminary
Mill Valley, California

PLATE 7

LOG OF BORING 4 1/2

Equipment 6" Solid Auger

Elevation 148± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample
			36	7	130	0	
	0.5	1000				3	
						6	
						9	
	0.5	1200				12	
						15	

BROWN SANDY SILT (ML) Topsoil

BROWN SANDSTONE (Bedrock) highly weathered, closely jointed, fine-grained, top 2' partially decomposed, soft to medium hard

Free water not encountered

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Job No: 994.1 Appr: RT Date 9/4/79

LOG OF BORING 4

Baptist Seminary
Mill Valley, California

PLATE 8

LOG OF BORING 5

Equipment 6" Solid Auger

Elevation 147± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
				16	99	0		DARK BROWN SANDY SILT (ML) topsoil, wet, stiff
			38	9	131			BROWN SANDSTONE (Bedrock) deeply weathered, partially decomposed, highly jointed, very low hardness, friable to 3', soft to medium hard below 3'
	0.4	700				3		
	0.5	800				6		
						9		
						12		Free water not encountered
						15		

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Job No: 994.1 Appr: BT Date 9/4/79

LOG OF BORING 5

Baptist Seminary
Mill Valley, California

PLATE 9

LOG OF BORING 6

Equipment 6" Solid Auger

Elevation 131± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
			16	5	87	0		DARK BROWN SANDY SILT (ML) topsoil, moist, stiff
			20/3"	6	137			BROWN SANDSTONE (Bedrock) highly weathered, closely jointed, soft to medium hard
	0.5	1200				3		
	0.5	1200				6		
	1.0	1200						moderately hard from 8' to 9'
	1.0	1200				9		
						12		
								Free water not encountered

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Consulting Soil & Foundation Engineers

Job No: 994.1 Appr: R.T Date 9/4/79

LOG OF BORING 6

Baptist Seminary
Mill Valley, California

PLATE 10

LOG OF BORING 7

Equipment 6" Solid Auger

Elevation 130± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		BROWN SANDY SILT (ML) Topsoil
			31	11	106			MOTTLED BROWN-ORANGE SANDY SILT (ML) very dense, residual (totally decomposed sandstone)
			50	12	111			
				13	109	3		
	0.3	500						BROWN SANDSTONE (Bedrock) highly weathered, closely jointed, closely fractured, low hardness to 10', moderately hard after 10'
	0.3	500				6		
	0.3	600				9		
	0.3	600						
	0.5	1200				12		
	0.5	1200						
						15		Free water not encountered

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Consulting Soil & Foundation Engineers

Job No: 994.1 Appr: BT Date 9/4/79

LOG OF BORING 7

Baptist Seminary
Mill Valley, California

PLATE 11

Tennisats.

LOG OF BORING 8

Equipment 6" Solid Auger

Elevation 120± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		BROWN SANDY SILT (ML) topsoil
		25/4"		5	99			MOTTLED SERPENTINE (Brown-green-gray) interbedded with sandstone beds. Soft to 3'. Medium hard after 3'. some very hard zones.
		40/5"		7	104	3		
						6		
						9		
						12		Free water not encountered

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Job No: 994.1 Appr: BT Date 9/4/79

LOG OF BORING 8

Baptist Seminary
Mill Valley, California

PLATE 12

Tennis Cts 5

LOG OF BORING 9

Equipment 6" Solid Auger

Elevation 120± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample
				7	81	0	
			38	6	103	1	

GRAY-BROWN SANDY SILT (ML)
topsoil and fill

BROWN SANDSTONE
interbedded with veins of serpentine, medium hard to hard, fine-grained, angular grains of quartz and feldspar.

3

6

9

12

Free water not encountered

15

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Consulting Soil & Foundation Engineers

Job No: 994.1 Appr: BT Date 9/4/79

LOG OF BORING 9

Baptist Seminary
Mill Valley, California

PLATE 13

DORM HILL

LOG OF BORING 10

Equipment 6" Solid Auger

Elevation 120± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
			30	6	121	0		BROWN SANDY SILT (ML) topsoil and fill
			20	8	116	3		BROWN SANDY SILT (ML) some clay, some fine gravel, dense (Fill)
				10	111			BLACK-BROWN SANDY SILT (topsoil of original hill)
			34	7	113	6		ORANGE-BROWN SANDSTONE highly weathered, soft, friable at the surface, closely jointed medium hard below 9'. Rock bit used from 10' to 12'.
	0.5	800				9		
	0.5	800				12		
						15		
						18		Free water not encountered

DONALD HERZOG & ASSOCIATES
Consulting Soil & Foundation Engineers

Job No: 994.1 Appr: BT Date 9/4/79

LOG OF BORING 10
Baptist Seminary
Mill Valley, California

PLATE 14

LOG OF BORING 11

Equipment 6" Sllid Auger

Elevation 122± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
			20/3"	5	94	0	1	BROWN SANDY SILT (ML) Topsoil
						3		BROWN-GRAY SANDSTONE (Bedrock) medium hard, weathered, and fractured to 2.5'
						6		Free water not encountered

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LOG OF BORING 11

Baptist Seminary
Mill Valley, California

PLATE 15

LOG OF BORING 12

Equipment 6" Solid Auger

Elevation 121+ Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample
			30/4"	6	99	0	
	2.5	1200				3	
						4.5	
						6	
						9	

BROWN SANDY SILT (ML)
~~topsoil and fill~~

BROWN-GRAY SANDSTONE
moderately weathered and jointed to 2'. Less weathered below 2'

Free water not encountered

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LOG OF BORING 12

Baptist Seminary
Mill Valley, California

PLATE 16

LOG OF BORING 13

Equipment 6" Solid Auger

Elevation 121± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		
			25	7	91			DARK BROWN SANDY SILT (ML) topsoil and fill
				8	102			
								BROWN SILTY GRAVEL AND SAND (GM-ML) dense (Fill)
				7	116			
			30	6	120	3		
								MOTTLED RED-BROWN CLAYEY SILT AND SOME FINE SAND (ML) very dense (residual) (decomposed sandstone)
			27	18	111	6		
								RED-BROWN SANDSTONE (Bedrock) highly weathered, closely jointed, soft to medium hard
			34	19	100			
			15/3"	18	111	9		
	0.5	800				12		
	0.5	1000						
						15		
						18		Free water not encountered

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LOG OF BORING 13

Baptist Seminary
Mill Valley, California

PLATE 17

LOG OF BORING 14

Equipment 6" Solid Auger

Elevation 120± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		BROWN SANDY SILT (ML) Topsoil
			40	11	111			MOTTLED BROWN FINE SANDY SILT (ML) some fine gravel
						3		
			22	8	126			BLACK-GRAY SANDSTONE highly weathered, partially decomposed, closely jointed. Interbedded with some shale beds.
			–			6		
			30/3"	3				changed from a clay bit to a rock bit at 6'. Less weathered below 6'
	0.7	800				9		
	1.0	1000						
	1.0	1000				12		
	1.5	1400						
						15		
						18		Free water not encountered

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LOG OF BORING 14

Baptist Seminary
Mill Valley, California

PLATE 18

Village I

LOG OF BORING 15

Equipment 6" Solid Auger

Elevation 148± Date 8/8/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		BROWN SANDY SILT (ML) Topsoil
			25	7	108			YELLOW-BROWN FINE SANDY SILT (ML) some medium to fine gravel, some clay (Colluvial)
						3		
			21	12	106			increase of moisture between 5' and 6'(contact point)
						6		YELLOW-BROWN CLAYEY SILT AND SILTY CLAY (CM-CL) dense, parent material (residual) (Decomposed sandstone)
			27	22	102			
						9		
			37	16	112			RED-BROWN SANDSTONE weathered
						12		
						15		

Free water not encountered

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LOG OF BORING 15

Baptist Seminary, Mill Valley, California

PLATE 19

LOG OF BORING 16

Equipment 6" Solid Auger

Elevation 125± Date 8/8/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		YELLOW-BROWN SANDY SILT (ML) stiff, moist (topsoil)
			26	9	103			
				9	107			MOTTLED FINE BROWN SANDY SILT (ML) (Colluvial)
						3		YELLOW-BROWN SILTY CLAY (CL) dense, totally decomposed sandstone (residual)
			25	21	105			
						6		GRAY-BROWN SANDSTONE AND SHALE partially decomposed into residual soil with clayey zones.
			28					
			15/3"	9	125			GRAY-BROWN SANDSTONE AND SHALE interbedded. Soft bedrock to 10'
						9		
	1.0	1200						
						12		
						15		
								Free water not encountered
						18		

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LOG OF BORING 16

Baptist Seminary
Mill Valley, California

PLATE 20

LOG OF BORING 17

Equipment 6" Solid Auger

Elevation 133± Date 8/8/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		BROWN SANDY SILT (Topsoil)
			30	12	100	3		MOTTLED BROWN FINE SANDY SILT (ML) some fine gravel (colluvial)
		20/3"		11	116	6		GRAY-BROWN SHALE AND SANDSTONE interbedded. Highly weathered, closely jointed, soft
						9		
						12		

Free water not encountered

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LOG OF BORING 17
Baptist Seminary
Mill Valley, California

PLATE 21

LOG OF BORING 18

Equipment 6" Solid Auger

Elevation 142± Date 8/8/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		BROWN SANDY SILT (ML) trace of fine gravel (colluvium and fill)
			10	8	85	3		MOTTLED BROWN SANDY SILT (ML) medium dense, very moist (colluvial)
			10	14	98	6		ORANGE-BROWN SANDY SILT (ML) some clay, some angular gravel, dense (residual)
		24/3"		11	126	9		ORANGE-BROWN SANDSTONE AND SHALE interbedded, soft, highly weathered. Drilled to 10' with clay bit
						12		
						15		Free water not encountered

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LOG OF BORING 18

Baptist Seminary
Mill Valley, California

PLATE 22

LOG OF BORING 19

Equipment 6" Solid Auger

Elevation 130± Date 8/8/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		BROWN SANDY SILT (ML) topsoil and fill
			14	16	86			BROWN SANDY CLAY (CL) some fine gravel, very moist, stiff (colluvial)
				16	93	3		
			25	15	111			BROWN CLAYEY SILT (ML) totally decomposed sandstone (residual)
						6		
			30/3"	9	128			MOTTLED BROWN SANDSTONE highly weathered, partially decomposed, soft, friable
						9		
						12		Free water not encountered
						15		

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LOG OF BORING 19
Baptist Seminary
Mill Valley, California

PLATE 23

VILLAGE VII

LOG OF BORING 20

Equipment Truck-mounted 6" auger

Elevation 62± Date 10/12/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
Pocket Penetrometer psf						0		
4500+			13	11	98	5		BROWN-GRAY MOTTLED FINE SANDY SILT (ML) some fine gravel, some clay, dry, loose to stiff (FILL)
4500+ psf			26	16	106	10		BLACK-GRAY CLAYEY SILT (ML) original ground surface
4500+ psf			11	19	110	15		LIGHT BROWN SILTY CLAY (CL) some medium to fine gravel, trace of sand, plastic (COLLUVIAL)
		40/6"				20		SHALE highly weathered, fractured, closely jointed (Franciscan Formation)
	2	1200				25		End of Boring 23.5'
						30		Ground water not encountered

9'

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LOG OF BORING 20
Baptist Seminary
Mill Valley, California

PLATE 1

FACULTY STRONG N STORER

LOG OF BORING 21

Equipment Truck-mounted 6" auger

Elevation 87± Date 10/12/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		BROWN CLAYEY SILT (ML) Topsoil
Pocket Penetrometer psf								BROWN PLASTIC SILTY CLAY (CL) damp (COLLUVIAL)
4500+			17	19	108			
						5		BROWN SILTY CLAY (CL) (RESIDUAL)
								SANDSTONE highly weathered, fractured, fine grained
			30/3"					
						10		End of Boring 9.5'
								Ground water not encountered
						15		

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LOG OF BORING 21

Baptist Seminary
Mill Valley, California

PLATE 2

FACULTY AREA N

LOG OF BORING 22 STOCKPILE

Equipment Truck-mounted 6" auger

Elevation 94± Date 10/12/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
Pocket penetrometer psf						0		GRAVELLY SILT & SAND (SM-ML) dense, dry, road embankment (FILL)
		400				5		9'
		800				10		BROWN SILTY CLAY (CL) some fine gravel embedded in the matrix (COLLUVIAL)
3500			22	20	111	15		18'
			45	18	117	20		SANDSTONE highly decomposed
	3	1000						
						25		End of Boring 22.5'
						30		Ground water not encountered

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LOG OF BORING 22
Baptist Seminary
Mill Valley, California

PLATE 3

VILLAGE VI

LOG OF BORING 23

Equipment Truck-mounted 6" auger

Elevation 36 Date 10/12/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
Pocket Penetrometer psf						0		TOPSOIL & VEGETATION
			22	9	129			MIXTURE OF SILTY CLAY & GRAVEL (CL-GM) some sand, dense, dry (RANDOM FILL)
						5		
			11	15				
						10		GRAY-BLACK ORGANIC LAYERS OF SILTY CLAY intermixed with random fill, saturated (Fill of soft to medium stiff Bay Mud)
2400			14	21	105			
3500				16	109			
						15		BROWN SILTY CLAY (CL) with angular gravel embedded in the clay matrix (COLLUVIAL)
								soft augering at 19'
						20		
								22'
		800						SANDSTONE highly weathered and highly fractured, some residual soil zones
		1000						
		700				25		
		800						SANDSTONE weathered and fractured
		800						
	3	1200						
						30		End of Boring 28.5'
								Ground water not encountered
						35		

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LOG OF BORING 23

Baptist Seminary
Mill Valley, California

PLATE 4

LOG OF BORING 24

Equipment: Hollow Stem Auger

Elevation: 35± Date: 4/13/82

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
			12			0		GRAY-BROWN SANDY CLAYEY GRAVEL (GC) loose, moist (FILL)
UC = 1500 psf			19	15	116	5		becomes wet to saturated
UC = 2200 psf			43	14	122	10		DARK GRAY SANDY SILT (ML) medium stiff, moist to wet, with occasional sandstone fragments (?FILL)
UC = 1700 psf			45	19	123	15		MOTTLED GRAY-BROWN SANDY CLAY (CL) medium stiff to stiff, wet (COLLUVIUM)
UC = 2300 psf		90/11"		11	130	20		ORANGE-BROWN SANDSTONE intensely fractured, moderately hard, weak to moderately strong, deeply weathered
						25		BOTTOM OF HOLE
						30		No free water encountered

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LOG OF BORING 24

Golden Gate Baptist Seminary
Mill Valley, California

PLATE 2

LOG OF BORING 25

Equipment: Hollow Stem Auger

Elevation: 40+ Date: 4/13/82

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample
			4			0	DARK BROWN CLAYEY SILT (ML) soft, saturated (FILL)
							BROWN CLAYEY GRAVEL (GC) medium dense, wet (FILL)
UC = 1200 psf			22	13	119	5	
							MOTTLED GRAY-BROWN CLAYEY SILT (ML) stiff, wet (? bay deposit)
UC = 1200 psf			22	11	122	10	
UC = 800 psf			14	22.2	111	15	
							ORANGE-GRAY-BROWN SANDY CLAY (CL) stiff, wet, with angular rock fragments (COLLUVIUM)
= 2000 psf			55	18	110	20	
							GRAY SHALE interbedded with orange-brown sandstone, moderately hard, weak, near vertical bedding planes
UC = 2200 psf			50/5"	14	109	25	
			BOTTOM OF HOLE				
						30	No free water encountered

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LOG OF BORING 25
Golden Gate Baptist Seminary
Mill Valley, California

PLATE 3

LOG OF BORING 26

Equipment Hollow Stem Auger

Elevation 43± Date 4/13/82

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample
			50/3"			0	
						5	
						10	
						15	

MOTTLED BROWN CLAYEY GRAVEL (GC) (FILL)

MOTTLED ORANGE-BROWN SANDY CLAY (CL)
stiff, wet, with rock fragments (COLLUVIUM)

BROWN SANDSTONE
moderately hard, weak, deep to moderately weathered

BOTTOM OF HOLE

No free water encountered

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LOG OF BORING 26

Golden Gate Baptist Seminary
Mill Valley, California

PLATE 4

LOG OF BORING 27

Equipment: Hollow Stem Auger

Elevation: 17± Date: 4/14/82

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample
UC = 2200 psf			13	13	116	0	
UC = 1200 psf			25	21	108	5	
UC = 2300 psf			50/4"	10	91	10	
						15	

DARK BROWN SANDY SILT (ML) (FILL)

DARK BROWN SILTY SANDY GRAVEL (GM) medium dense, wet to saturated (FILL)

MOTTLED GRAY-BROWN SILTY SAND (SM) with occasional gravel, medium dense, wet

MOTTLED BROWN-ORANGE-GRAY SANDY SILT (ML) medium stiff, wet

GRAY-BROWN SHALE intensely fractured, moderaately hard to hard, deeply weathered, steeply dipping

BOTTOM OF HOLE

No free water encountered

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LOG OF BORING 27

Golden Gate Baptist Seminary
Mill Valley, California

PLATE 5

LOG OF BORING 28

Equipment: Hollow Stem Auger

Elevation: 17+ Date: 4/14/82

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample
UC = 2200 psf			11 16	8	118	0	
UC = 300 psf			9	28	89		
UC = 700 psf			11	22	108	5	
UC = 800 psf			16	24	100		
UC = 1200 psf			35	18	111	10	
UC = 2200 psf			65	14	123		
						15	
			100/3"				
						20	

DARK BROWN CLAYEY SILT (ML) med. stiff, wet to saturated (FILL)

DARK GRAY CLAYEY GRAVEL(GC) medium dense, wet (FILL)

MOTTLED DARK GRAY SILT CLAY(CL) medium stiff, saturated

MOTTLED ORANGE-BROWN CLAYEY SAND (SC) medium dense, saturated, with angular rock fragments

MOTTLED ORANGE-BROWN SANDY CLAY med. stiff, saturated--less sand at 8.5', wet

MOTTLED ORANGE-GRAY CLAYEY SILT (ML) stiff to very stiff, moist

ORANGE-BROWN CLAYEY SANDSTONE with gray silt inclusions, low hardness, friable

GRAY-BROWN SILTSTONE moderately hard, weak, deeply weathered

BOTTOM OF HOLE

No free water encountered

CI

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LOG OF BORING 28

Golden Gate Baptist Seminary
Mill Valley, California

PLATE 6

LOG OF BORING 29

Equipment: Hollow Stem Auger

Elevation: 17± Date: 4/14/82

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		DARK BROWN SANDY SILT (ML) medium dense, wet (FILL)
UC = 1200 psf			14 12	18	117			DARK GRAY SILTY GRAVEL (GM) medium dense, wet (FILL)
UC = 800 psf			14	28	91	5		DARK BROWN SANDY SILT (ML) medium stiff, wet, high organic content (?bay deposit)
UC = 2200 psf			60	11	123			GRAY-BROWN SHEARED SHALE intensely fractured, moderately hard, friable, deeply weathered
						10		
								BOTTOM OF HOLE
						15		No free water encountered

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LOG OF BORING 29

Golden Gate Baptist Seminary
Mill Valley, California

PLATE 7

TEST PITS

	Depth (Inches)	Description
1.	0- 20	Topsoil; dark brown silty sand, loose, wet
	20- 56	Colluvium/Residual soil; light brown sand (SP) and clayey sand (SC), loose to moderately dense, wet to saturated)
	56- 84	Weathered rock; yellow-brown sandstone and interbedded gray shale, closely fractured, low hardness, friable to weak, moderately weathered, extensive seepage at 78 inches
2.	0- 12	Topsoil; dark brown sandy silt (ML), loose, moist
	12- 19	Colluvium/Residual soil; mottled, yellow, orange-brown sandy clay (CL) with sandstone and shale fragments, moderately stiff, moist
	19- 21	Weathered rock; gray clayey gravel (GC) weathered shale fragments
	21- 42	Rock; gray shale, well consolidated, very thin-bedded, vertically dipping, closely fractured, moderately hard, moderately strong, moderately weathered

3.	0- 20	Topsoil; dark brown clayey sand (SC), loose, wet
	20- 35	Colluvium; dark brown sandy clay (CL) with rock fragments, seepage at 25 inches, moderately stiff, saturated
	35- 55	Colluvium; mottled orange-brown-gray, gravelly clay (CL), stiff, saturated
	55- 80	Colluvium (?); mottled orange-brown gravelly clay (CL), stiff to very stiff, saturated.
	80- 90	Weathered rock; orange-brown-gray weathered siltstone, poorly consolidated, low hardness, friable, deeply weathered
4.	0- 20	Topsoil; dark brown sandy clay (CL), moderately stiff, wet
	20- 26	Colluvium; mottled gray-orange-brown sandy clay (CL), moderately stiff, saturated, seepage at 24 inches, grades into lower material
	26-114	Colluvium; mottled orange-brown-gray clay, very stiff, sataurated, becomes grayer and siltier at 72 inches
5.	0- 9	Topsoil; dark brown clayey sand (SC), loose, wet
	9- 11	Residual soil; orange-brown and gray sand (SP) to sandy clay (CL), moderately dense to dense, wet
	11- 66	Weathered rock; orange-brown sandstone with gray clay seams, moderately consolidated, closely to intensely fractured, low to moderately hard, weak to friable, seepage at 12 inches

6.	0- 7	Topsoil; dark brown clayey sand (SC), loose, wet to saturated, seepage at 7 inches
	7- 36	Weathered rock; orange-brown sandstone with gray clay seams, moderately consolidated, closely fractured, low hardness, weak to friable, moderately to deeply weathered
7.	0- 18	Topsoil; dark brown sandy silt (ML), loose, moist
	18- 28	Colluvium; mottled rusty brown gravelly clay (CL), moderately stiff, wet to saturated, seepage at 28 inches
	28- 60	Colluvium; mottled gray-rust brown sandy clay (CL), stiff, saturated to wet
	60- 82	Residual soil; yellow-brown sandy clay (CL), very stiff, wet
	82- 90	Weathered rock; mottled gray-orange-brown siltstone grades into orange brown sandstone, poor to moderately consolidated, intensely fractured, low hardness, friable, deeply weathered

8.	0- 7	Topsoil; dark brown silt (ML), loose, moist
	7- 23	(?)Fill; brown sand (SP) and sandstone fragments, moderately dense, wet
	23- 29	Colluvium; brown clay (CL), stiff wet
	29- 31	Residual soil; gray clay (CL), moderately stiff, wet
	31- 48	Rock; gray shale, moderately to well consolidated, very thin-bedded, bedding N70W, 46NE, intensely to closely fractured, moderaetly hard, weak to moderately strong, moderately weathered
9.	0- 18	Topsoil; dark brown silt (ML), loose, moist to wet
	18- 34	Residual soil; red-brown sandy silt (ML), moderately stiff, wet
	34- 52	Weathered rock; brown sandstone, moderately consolidated, thin-bedded, bedding N64W, 56NE, closely to intensely fractured, moderately hard, weak to moderately strong, moderately weathered, seepage at 48 inches

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TEST PIT LOG
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PLATE
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10.	0- 24	Topsoil; dark brown silt (ML), with brown sandstone fragments, grades into lower material, loose, moist
	24- 55	Colluvium; brown clayey sand (SC), moderately dense, wet
	55- 68	Colluvium; brown clay (CL) with minor amount of sand, very stiff, saturated, seepage at 56 inches
	68-150	Colluvium/Residual soil; mottled orange-brown silty clay (CL), with rock fragments, stiff, saturated to wet--appears to resemble highly weathered rock at bottom of pit
11.	0- 20	Topsoil; dark brown silt (ML), loose, moist
	20- 52	Colluvium; dark brown silt (ML) with sandstone rock fragments, moderately stiff, wet
	52- 96	Colluvium; mottled orange-brown sandy clay (CL), stiff, wet to saturated, seepage at 60 inches, grades into lower material
	96-108	Residual soil/Weathered rock; mottled orange-gray-brown siltstone, poorly consolidated, intensely fractured, low hardness, friable, deeply weathered
	108-122	Weathered rock; mottled orange-gray-brown siltstone and brown sandstone, properties as above
12.		Not dug

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13.	0- 22	Topsoil; dark brown clayey silt (ML), loose, wet
	22- 28	Residual soil; mottled gray-brown sandy clay (CL) with shale fragments, moderately stiff, wet
	28- 40	Residual soil; mottled yellow-gray clayey sandy silt (ML), with shale fragments, stiff, moist
	40- 76	Weathered rock/rock; gray sheared shale with some inclusions of graywacke, crushed to intensely fractured, low hardness, friable, deeply weathered
	76-104	Rock; dark gray graywacke sandstone, well consolidated, closely fractured, hard, strong, moderately weathered
14.	0- 20	Topsoil; dark brown silt (ML), loose to moderately stiff, moist
	21- 30	Earthflow; red-brown clayey sand (SC) to gravelly sand (SP), loose wet, grades into lower material
	30- 46	Earthflow; light red-brown clayey gravel (GC) with brown sandstone fragments, loose, saturated, seepage at 40 inches
	46- 47	Residual soil; yellow-gray clay (CL) with shale fragments, moderately stiff, saturated, grades into lower material
	47-120	Weathered rock/rock; gray sheared shale and graywacke with light gray clay seams, intensely fractured, low to moderately hard, friable to weak, deeply weathered

15.	0- 16	Topsoil; dark brown clayey sand (SC), loose, wet
	16- 27	Earthflow; red-brown clayey sand (SC) to sand (SP) with small sandstone fragments, loose, saturated, seepage at 17 inches
	27- 28	Colluvium; mottled red-brown-yellow sandy clay (CL), moderately stiff, wet to saturated
	28- 37	Residual soil; mottled yellow-gray clay (CL) with fragments of chert and graywacke, very stiff, wet to moist
	37- 46	Residual soil; gray clay with shale and graywacke fragments, very stiff, moist
	46- 68	Rock; gray sheared shale and graywacke, low hardness, friable, deeply weathered, moist to dry, intensely sheared areas are predominantly clay
	68- 72	Rock; gray graywacke, well consolidated, closely to moderately fractured, hard, strong, moderately weathered, dry

DONALD HERZOG & ASSOCIATES
Consulting Soil & Foundation Engineers

Job No: 994.1 Appr: DH Date 5/19/82

TEST PIT LOG
Golden Gate Baptist Seminary
Mill Valley, California

PLATE
16

16.	0- 13	Topsoil; dark brown sandy clay (CL), loose to moderately stiff, wet to saturated, seepage at 13 inches
	13- 47	Residual soil; gray clay (CL) with occasional rock fragments of graywacke and chert, very stiff, expansive
	47- 96	Weathered rock; momttled green-yellow-gray clay (CL) intermixed with sheared shale and graywacke, poorly consolidated, intensely fractured to crushed, low hardness, friable to plastic, deeply weathered; clay is stiff, wet to moist
17.	0- 7	Topsoil; dark brown sandy silt, loose, moist
	7- 19	Weathered rock; yellow-brown sandstone, moderately consolidated, intensely fractured, low hardness, friable to weak, grades into lower material
	19- 22	Weathered rock; yellow-brown clay (CL), moderately stiff, saturated, seepage at 19 inches
	22- 24	Weathered rock; gray clay (CL), moderaetly stiff, wet
	24- 72	Rock; gray shale and yellow-brown sandstone with gray clay seams, moderately consolidated, intensely fractured, moderately hard, friable to weak, deep to moderately weathered

18.	0- 20	Topsoil; dark brown silt (ML), loose, wet
	20- 39	Colluvium; red-brown sandy clay (CL), stiff, wet to saturated, seepage at 26 inches
	39- 55	Colluvium; mottled yellow-brown sandy clay (CL), stiff, saturated to wet
	55- 78	Weathered rock/rock; yellow-brown sandstone, moderately fractured, low to moderately hard, friable to weak, moderately weathered
19.	0- 6	Topsoil; dark brown silty sand (SM), loose, wet to saturated, seepage at 4 inches
	6- 52	Rock; yellow-brown sandstone, moderately consolidated, closely fractured, weak to friable, moderately hard, moderately weathered

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TEST PIT LOG
Golden Gate Baptist Seminary
Mill Valley, California

PLATE
18

20.	0- 16	Topsoil; dark brown sandy silt (ML), loose, wet to saturated, seepage at 7 inches
	16- 30	Earthflow; gray-brown clayey sand (SC), moderately dense, saturated
	30- 60	Earthflow; yellow-brown slightly sandy clay (CL), stiff, saturated
	60- 76	Colluvium; mottled yellow-brown-gray clay (CL), very stiff, saturated
	76- 89	Weathered Rock; mottled yellow-brown-gray silstone anad sandstone with clay fracture filling, poorly consolidated, intensely fractured, low hardness, friable, deeply weathered
	89- 91	Rock; yellow-brown sandstone, moderate consolidation, intensely fractured, low to moderately hard, friable to weak, moderately weathered

DONALD HERZOG & ASSOCIATES
Consulting Soil & Foundation Engineers

Job No: 994.1 Appr: DH Date 5/19/82

TEST PIT LOG
Golden Gate Baptist Seminary
Mill Valley, California

PLATE 19

21.	0- 30	Topsoil; dark brown silt (ML), loose, moist
	30- 44	Colluvium/residual soil; orange-brown sandy silt (ML) with rock fragments, moderately stiff, wet
	42- 62	Residualsoil/weathered rock; orange-brown-gray siltstone, poorly consolidated, intensely fractured, low hardness, friable, deeply weathered, moist
	62- 72	Rock; gray-brown shale and orange-brown sandstone, moderately consolidated, intensely fractured, moderately hard, weak, moist
22.	0- 12	Topsoil; dark brown silt (ML), loose, moist to wet
	12-108	Colluvium; mottled yellow-brown-red gravelly silt (ML), moderately stiff, saturated and prone to caving, seepage at 48 inches
	108-120	Rock; yellow-brown sandstone, moderately consolidated, moderately hard, weak, moderately weathered

23.	0- 27	Topsoil; dark brown silt (ML), loose moist
	27- 36	Colluvium; mottled orange-brown clayey silt (ML) with sandstone fragments, stiff, wet to saturated, seepage at 34 inches
	36- 52	Rock; orange-brown sandstone, moderately consolidated, closely to intensely fractured, moderately hard, weak, moderately weathered
24.	0- 48	Topsoil/earthflow; dark brown silt (ML) with sandstone fragments, loose to moderately stiff, wet to saturated, seepage at 41 inches
	48- 72	Colluvium; mottled orange-brown clay (CL) with rock fragments, moderaetly stiff to very stiff, saturated
	72-160	Colluvium/residual soil; mottled yellow-brown-gray clay (CL) with rock fragments, stiff to very stiff, saturated to wet--starting to appear as residual soil in bottom.

APPENDIX C

RECOMMENDED GRADING SPECIFICATIONS

APPENDIX C

RECOMMENDED GRADING SPECIFICATIONS

THE SEMINARY
201 SEMINARY DRIVE
MILL VALLEY, CALIFORNIA

1.General

1.1 These Recommended Grading Specifications (called "Specifications" here) provide general guidelines for soil engineering aspects of grading for the subject development. The Geotechnical Engineer from PURCELL RHOADES & ASSOCIATES, Inc. (PRA) should be consulted prior to any site work connected with grading. Please refer to the following report(s) for other grading recommendations supporting these Specifications.

1. PRA, 06/8/16, PreliminaryGeotechnical Design Report, The Seminary, 201 Seminary Drive, Mill Valley, California: Job No. 14-160/7694-01.

1.2 These Specifications include the following:

- clearing, stripping, grubbing, and preparing areas to be filled
- selecting materials for fill
- placing, spreading, and compacting fill
- completing subsidiary work necessary to conform to lines, grades, and slopes shown on accepted plans
- protecting the soil in slab and foundation areas from drying out between grading and construction

1.3 Tests and observations shall be made by a representative from PRA Group, Inc. during the grading so that we can confirm that grading was performed according to these Specifications. Such confirmation in a Final grading report is often required to obtain a building permit.

1.4 PRA shall be notified at least 2 working days prior to placement of fill so arrangements for testing and observation may be made.

1.5 Grading or placement of fill done without the presence of a representative of PRA or without prior coordination between PRA and the grading contractor shall be at the contractor's risk; PRA will accept no responsibility for such work.

2. Testing

2.1 The American Society for Testing and Materials (ASTM) Test Procedure D 1557-78 shall be the standard test to define maximum densities for all compaction of fill. All densities shall be expressed as relative compaction in terms of the maximum dry density obtained in the laboratory by the foregoing standard procedure.

2.2 Field density tests shall be performed according to ASTM Test Procedures D 6938-08A. The locations and number of field density tests shall be selected by the Geotechnical Engineer or the Engineer's Representative.

3. Clearing, Stripping, Grubbing, and Preparing of Areas to Be Filled

3.1 Trees, roots, vegetation, and organic surficial soil shall be removed from structural areas unless specified otherwise by PRA. The depth of organic surficial soil to be removed will be recommended by the Geotechnical Engineer or the Engineer's Representative but, in general, will probably vary from about 2 to 4 inches.

3.2 Strippings are defined as surface vegetation and organic surficial soil. Strippings may not be used in fill unless specifically authorized and observed by the Geotechnical Engineer or the Engineer's Representative. Stripping may be stockpiled for landscaping use, with the approval of the landscape architect.

3.3 Soil deemed soft or unsuitable by the Geotechnical Engineer or the Engineer's Representative shall be removed. Loose fills and surface soil sloughs shall also be excavated.

3.4 Underground structures such as old foundations, abandoned pipelines, septic tanks, and leach fields shall be removed from the site.

3.5 The final stripping and excavation shall be approved by the Geotechnical Engineer or the Engineer's Representative before further grading is started.

3.6 The original ground on which the fill, foundation or slabs are to be placed shall be plowed or scarified at least 8 inches and until the surface is free from ruts, hummocks or uneven features which would tend to prevent compaction. The contractor shall observe the following guidelines:

- Where the slope ratio of the original ground is steeper than 5:1 (horizontal to vertical), the bank shall be stepped or benched.
- At the toe of the side slope fills, the base key shall be at least 12 feet in width, cut into firm, natural ground and sloped back into the hillside at a gradient of at least 2 percent.
- Subsequent keys or benches shall be 10 feet wide and placed no more than 4 feet in vertical height from the previous key or bench unless otherwise recommended by the Geotechnical Engineer or the Engineer's Representative.

3.7 The native subgrade soil to receive fill shall be moisture-conditioned and compacted to the requirements specified in the referenced report and below:

Minimum relative compaction:	90	percent
Minimum moisture content:	3	percent over optimum
Special considerations:	85-90	percent compaction in designated expansive soil at 5 percent over optimum moisture condition.

4. Selecting Fill

4.1 The Geotechnical Engineer or the Engineer's Representative shall evaluate suitability of materials for compacted fills. The material shall be a soil or soil-rock mixture, free of organic matter or other deleterious substances. Within 3 feet of finished grade, the compacted fill shall contain no rocks or lumps over 6 inches in diameter and none that are more than 15 percent larger than 2-1/2 inches. Rocks greater than 6 inches in diameter shall be placed in deep fills as approved by the Geotechnical Engineer or the Engineer's Representative so that they are not nested and so compaction may be achieved around them.

4.2 If imported materials are needed, they must be approved by the Geotechnical Engineer or the Engineer's Representative prior to transporting the fill to the project. Unless otherwise exempted by the Geotechnical Engineer, they should meet the following requirements:

1. The plasticity index shall not exceed 15.
2. No rocks shall exceed 6 inches in diameter.

5. Placing, Spreading, and Compacting Fill

5.1 The fill shall be placed in uniform lifts of not more than 8 inches in uncompacted thickness. Each layer shall be spread evenly and shall be thoroughly blade mixed during spreading to obtain uniformity of material. Before compaction begins, the fill shall be brought to a water content (as directed by the Geotechnical Engineer or the Engineer's Representative) that will permit proper compaction by either (1) aerating the material if it is too wet or (2) spraying the material with water if it is too dry.

5.2 After each layer has been placed, mixed, and spread evenly, it shall be compacted as specified in the referenced report and below:

Minimum relative compaction:	90	percent
Minimum moisture content:	3	percent over optimum
See Section 3.7 for expansive soil criteria		

5.3 The contractor shall use appropriate equipment to compact the fill to the specified density. Compacting shall be performed while the fill is within the specified range of moisture content. Each layer shall be compacted over its entire area, and the compacting equipment shall make enough passes to achieve the required density.

5.4 Fill placed on slopes shall be compacted by means of suitable equipment. Benching of the slopes should be done in increments of 3 to 5 feet in height until the fill is brought to its specified height or as determined by the Geotechnical Engineer or the Engineer's Representative.

5.5 When sheepsfoot rollers are used for compaction, the density tests shall be taken in the compacted material below the surface disturbed by the roller. When these tests indicate that the density of any layer of fill, or portion thereof, is below the required density, it shall be reworked until the required compaction has been obtained.

5.6 Soil shall not be placed or compacted during periods of rain or on ground which is not drained of water. Soil which has been moistened by rain or other cause shall not be compacted until the moisture content is within the limits specified in the referenced report. Prior approval by the Geotechnical Engineer or the Engineer's Representative shall be obtained before continuing grading.

6. Backfilling Trenches

6.1 Geologic exploratory trenches (or other depressions, including tree root ball areas), if any, within the proposed building or pavement areas, shall be re-excavated and backfilled to meet the requirements for compacted fill, as specified above.

6.2 The utility trenches extending under the perimeter foundation and concrete slabs-on-grade may require backfilling or plugging with impermeable soils at the building line with a 3-foot wide impermeable segment of compacted fill. Requirements will be specified during trench backfilling. Ponding or jetting of trench backfill is not recommended.

7. Removing Subsurface Pipes

7.1 The Geotechnical Engineer or Engineer's Representative shall designate the methods of removal of subsurface pipes. Depending upon depth and location, one of the following methods shall be specified:

- The pipe shall be removed, and the trench shall be filled and compacted according to applicable requirements for compacting native soil (Section 3) or fill (Section 5).
- The pipe shall be crushed in the trench, and the trench shall be filled and compacted according to applicable portions of Sections 3 and 5.
- The ends of the pipes shall be capped with concrete to prevent entrance of water. The length of the cap shall be at least 5 feet.

7.2 Any existing wells on the site shall be filled, buried and capped according to the requirements of the local regulatory agency. The final elevation of the top of the well casing shall be a minimum of 36 inches below any adjacent grade at the completion of grading or filling. Under no circumstances should structural foundations be placed over the capped wells.

8. Grading Slopes

8.1 Slopes shall be graded at gradients no steeper than 2:1 (horizontal to vertical) for fill and cut, except as noted in the referenced report.

8.2 After the slopes have been graded, they shall be track-rolled, and provisions shall be made for planting the slopes for erosion control. Drainage facilities shall be constructed to prevent water from flowing over slopes. No slope shall be left to stand through a winter season without erosion control.

9. Installing Subdrains

9.1 For subdrains, the contractor shall provide and install perforated pipe Standard Designation Ratio (SDR) 23.5 or equivalent approved by the Geotechnical Engineer or the Engineer's Representative and filter material for subdrains as shown on the plans or as directed by the PRA. The following restrictions apply:

9.1.1 Clay drain tile, concrete drain tile and perforated clay pipe shall not be permitted. Use no wyes, tees, or other joints of these materials.

9.1.2 Porous concrete pipe, perforated asbestos-cement pipe, bituminous fiber or pipe of other materials shall be permitted only on written authorization of the Geotechnical Engineer.

9.1.3 The contractor shall use ½ by 3/4 inch drain rock wrapped within a filter fabric approved by our Geotechnical Engineer, unless otherwise permitted by written authorization from the Geotechnical Engineer.

9.1.4 Unless recommended otherwise by the Geotechnical Engineer or the Engineer's Representative, the contractor shall use pipes not less than 4 inches in diameter for lateral drains up to 50 feet in length. Use pipes of not less than 6 inches in diameter for lateral drains greater than 50 feet in length. Larger minimum pipe diameters may be specified by the Geotechnical Engineer or the Engineer's Representative during construction.

10. Unusual Conditions

10.1 If unusual conditions occur during grading, the Geotechnical Engineer shall be immediately notified for recommendations.

Appendix K

Stage 1 Feasibility Study

STAGE 1 FEASIBILITY STUDY
Golden Gate Baptist Theological Seminary
Master Plan Amendment
Mill Valley, California

for

HARTMARIN
PROJECT NO. 08-236/7463-01
JUNE 22, 2010
Revised AUGUST 23, 2010

Purcell, Rhoades & Associates
Consultants in the Applied Earth Sciences

1041 Hook Avenue
Pleasant Hill, CA 94523

Tel (925) 932-1177
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No. 08-236/7463-01
June 22, 2010
Rev. 8-23-10

Golden Gate Baptist Theological Seminary
c/o Mr. Rob Hart
HartMarin
75 Rowland Way, Ste. 140
Novato, CA 94945

Subject: **STAGE 1 FEASIBILITY STUDY**
Golden Gate Baptist Theological Seminary Master Plan Amendment
Mill Valley, California

Dear Mr. Hart:

As requested, we are pleased to submit this Stage 1 Feasibility Study for proposed Master Plan Amendment for development at the Golden Gate Baptist Theological Seminary in Mill Valley, California. The intent of this study is to review published data, perform a field investigation and laboratory testing of obtained soil samples, and to provide this summary report describing the feasibility for development in the specified Development Study Areas. This Stage 1 Study was originally issued June 22, 2010, and subsequently, conceptual renderings of proposed development for each study zone were issued (see Appendix C). This report has been revised to include additional observations and comments as a result of these renderings.

Based upon our review of the available documents, field investigation, laboratory testing and engineering review, it is our opinion that the designated focused study areas are feasible for consideration in development. The respective focused study areas each have geotechnical issues that can be mitigated with conventional engineering analysis and using typical construction methods.

We appreciate this opportunity to be of service on this project. Please contact this office with any questions.

Very truly yours,
PURCELL, RHOADES & ASSOCIATES

Daniel J. Rhoades, P.E.
Principal
G. E. -716, exp. 06-30-11
ida/H746301.1

Dean Affeldt, CEG 1108
Principal

Purcell, Rhoades & Associates

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SUMMARY OF CONCLUSIONS

1. The focused study areas are underlain by variety of subsurface conditions, ranging from shallow bedrock, to moderately deep earthflow deposits, and engineered fill slopes.

2. In general, depending upon the specific site development planned, the focused study areas are feasible for development using conventional earth moving equipment, installation of surface and subsurface drainage controls, and typical foundation construction.

3. The Seminary Knoll study area will require mitigative grading to install engineered buttress fills within swales covered with earthflow deposits, installation of surface and subsurface drainage controls, and pier and grade beam foundation systems. Depending upon the specific site development plan, a catchment or buffer area, or a catchment wall may be required upslope of the development within the loop of Shuck Drive due to the presence of earthflow deposits upslope of upper Shuck Drive.

4. The Student Village Study area had several subareas at the time this report was originally issued. Subsequently, only the central subarea adjacent to Truett Hall and the existing parking facilities is now being considered for development. Due to the variable depth to the shallow lying bedrock and the proximity of a descending slope, the site will likely be developed using a pier and grade beam foundation with piers required to provide uniform embedment in the non-yielding bedrock unit. Some surface regrading and surface and subsurface drainage controls will also likely be required.

5. The Chapel Hill study area is underlain by shallow lying, very dense sandstone and siltstone bedrock. Site development would include typical surface and subsurface drainage controls, retaining walls for sublevel areas, and conventional footing foundation system.

6. The Seminary Vista West study area is underlain by shallow lying, dense sandstone and siltstone bedrock in the proposed development area adjoining Chapel Hill Drive. The descending slope below this study area consists of a reconstructed fill slope. Due to the proximity of the steep slope, a pier and grade beam foundation system would likely be needed.

7. The proposed areas for development at the Seminary Point study area are underlain by relatively shallow lying sandstone and siltstone bedrock. Surface and subsurface drainage controls, and a pier and grade beam foundation system would be required for development of this area. Depending upon the specific development location, some regrading may be necessary due to proximity to shallow earthflow deposits.

8. The Seminary Vista East study area is covered by an earthflow deposit, underlain with bedrock with depths encountered up to 18 feet below existing grade. Due to the wet, soft earthflow materials encountered and free groundwater present, development of this

study area would require removal of the surficial materials and reconstructing the slope with an engineered buttress fill, including surface and subsurface drainage controls. A pier and grade beam foundation system that is embedded into the underlying sandstone and siltstone bedrock would be required.

SCOPE OF WORK

The scope of work for this Stage 1 Feasibility Study, as requested in the 8/11/09 RFP submitted to this office, is as follows:

Stage 1 - Feasibility Study

- Attend initial orientation meeting on-site.
- Use no paint and leave no trace of your investigation. Repair investigation holes, pits and borings to existing condition.
- Document geology with borings within possible development areas.
- Report on existence of unstable soils, soils creep, ancient landslides, hard rock and other adverse geologic conditions within possible development zones.
- Describe each potential site in terms of its geotechnical setting, sensitive areas and areas most suitable for development.
- Provide a table of proposed geotechnical mitigation measures by zone appropriate to development in Marin.
- Include a summary of conclusions at the beginning of the report.
- All maps shall be in color. Provide (1) paper copy and (1) PDF digital file.

INTRODUCTION

The site area is within the Stawberry Point peninsula surrounded by Richardson Bay (see Figure 1, Site Location Map). The site topography has generally east-west trending with natural north and southward facing slopes that vary from 2-1/2 horizontal to 1 vertical (2-1/2:1, H:V) to 4.1. There are also localized flat knolls and marshland areas within the campus (see Figure 2, Campus Plan). The campus has been developed through the years (see Figure 2), and this Stage 1 Feasibility Study focuses on 6 specific development areas being considered for future development (see Figure 3, Development Study Areas).

PUBLISHED DATA

In review of geotechnical information in our files and in the Marin County web site, we noted the following preliminary information.

- the site is not traversed by a Special Studies Zone for potentially active faults
- the site area is mapped as having an expansive soil potential of low likelihood to nil
- a high liquefaction potential is mapped for the alluvial areas, and very low liquefaction potential is indicated for hillside areas
- a flood potential was not indicated for in the location of the proposed focused study areas

Regional geology maps show the site as predominantly underlain by Franciscan Complex melange, which is a unit that consists of "scrapes" of different rock types that have been mildly metamorphosed. There are blocks of very hard "greenstone" surrounded by siltstone and sandstone units. The western perimeter of this peninsula has inlets that have been mapped as having artificial fill placed over bay mud.

The campus has been the subject of prior geotechnical investigations and site work to improve slope stability. Prior studies prepared by Donald Herzog & Associates that were presented to our office for review and incorporation into this feasibility study are as follows:

August 31, 1979, Report - Soil Investigation, Golden Gate Baptist Theological Seminary, Mill Valley, California: Job No. 994.1

March 22, 1982, Report - Geotechnical Reconnaissance for Master Plan, Golden Gate Baptist Theological Seminary, Mill Valley, California: Job No. 994.1

May 19, 1982, Report - Geotechnical Reconnaissance for Master Plan, Golden Gate Baptist Theological Seminary, Mill Valley, California: Job No. 994.1.

August 10, 1982, Preliminary Report - Anticipated Remedial Measures, Golden Gate Baptist Theological Seminary, Strawberry Point, California: Job No. 994.1.

The site plan showing the locations of the Herzog test pits and borings is presented in the Figure A-1 of Appendix A, and where such explorations contribute to the focused study area under study, is also presented with the site map of the respective study area (see Figures 24 through 29). The logs of the Herzog test pits and exploratory borings are presented in Appendix B.

SITE CONDITIONS

Site Geology

The general site geology has been previously described in the March 22, 1982 Donald Herzog & Associates report, with their Geologic Map presented in Figure A-1 of Appendix A of this Stage 1 Feasibility Study, with their findings summarized as follows:

Rock outcrops within the area are sparse, except where exposed in cut slopes. The bedrock of the area is primarily composed of interbedded sandstones and shales of the Mesozoic-aged Franciscan Assemblage. The sandstone typically varies from light to dark brown in color; massive to thin bedded; closely to moderately fractured; moderately hard; weak to moderately strong; and moderately to deeply weathered Shales vary from thinly laminated to very thinly bedded; dark gray in color; closely fractured to sheared; friable to weak; low to moderately hard; and moderately to deeply weathered. Other sparsely occurring Franciscan rocks include chert, metagraywacke sandstone and serpentinite. The chert is thin bedded; variable in color; moderately to closely fractured; hard; strong; and

moderately weathered. It may vary from highly altered meta(?) Chert to argillaceous chert. Massive blocks of metagraywacke occur sporadically in the well-bedded sandstone and shale, primarily in areas where the rocks appear distorted or sheared Serpentinite is also rare and crops out as a small block in the southwest corner of the area.

The Franciscan rocks within this area display a localized uniform structural orientation. The sandstone, shale and chert commonly trend in a northwest direction, and dip moderately to steeply to the northeast. Strikes vary from North 40 degrees West to East-West, and dip northerly from 27 to 85 degrees. Zones of shearing, where the rocks are highly fractured, altered and structurally disrupted, are evident in some areas. However, these shear zones appear to be relatively small and do not significantly change the localized bedding orientation. The northwest portion of the area was previously characterized as a "melange" zone. However, the uniform orientation of the chert, shale and sandstone, as well as the fact that the chert displays a graded depositional contact with the shale and sandstone, suggests that this area is not as sheared and deformed as other typical Franciscan melange zones in the Coast Range geomorphic province.

Quaternary deposits in the area include residual soils, colluvium, landslide debris, bay mud and fill material. Soils may vary from light to dark brown sandy or clayey silts to silty clays. They are medium stiff to stiff, and moist to wet. Soil depths may vary from less than 6 inches to over 6 feet. The soils on all natural slopes are undergoing slow downslope transport in the form of creep, and the distinction between residual in-place soil and colluvium is often difficult to define.

Landslides, in the form of shallow earthflows (less than 10 feet deep), are common on natural slopes throughout the area. Flows are characterized by well defined headwall scarps, hummocky topography, lobate or delta-shaped masses near the toe of the slide, and seepage zones. The earthflows appear to be shallow seated and restricted to the unstable soils overlying the bedrock.

At the time of the March 22, 1982 DHA report, no new large scale earthflows were observed, and the extent of the slides that had been mapped in 1979 did not significantly increase as a result of the January 1982 record storm event. A few debris slides and slumps were noted by DHA during their field investigation. Those slides were described as being of small extent (several tens of square feet) and restricted to steep cut slopes and unstable fills, with most of the failures appearing to be recent as a result of the January 1982 storm event.

The majority of earthflows, landslides and colluvial filled swales identified by DHA were reportedly mitigated per the recommendations of the referenced August 10, 1982 report for "Anticipated Remedial Measures", and as shown on DHA's Plate 1, "Recommended Mitigation Measures", provided in Figure A-2 of Appendix A of this study. These mitigation measures ranged from installation of subdrains, surface concrete v-ditches, surface grading of the surficial soils, to reconstruction of the slope with engineered buttress fills. It is reported that as recommended by DHA, south facing slope between upper and lower Chapel Drive was reconstructed with an engineered buttress fill. This slope does appear

to be reconstructed, but PRA has not received any documentation of the observation and testing services provided by DHA for this reconstructed, nor of their observations for the other mitigation measures recommended in their report. As part of this Feasibility Study, PRA performed a site review within the designated development study areas in an attempt to locate indications of the installed mitigation measures, such as drop inlets, clean outs, v-ditches, etc.

Bay mud is of limited extent and restricted to areas in the southeast and west-central portion of the site. This material typically is an organic rich silt or clay of low strength and high compressibility. The bay mud deposit in the west-central portion of the campus area has been covered with fill and is not exposed at this time.

Fills are common throughout the area and generally consist of a heterogenous mixture of local sandstone and shale derived from previous site excavations. PRA has not received any documentation regarding the compaction of fills identified at this site.

Site Seismicity

The subject property, like all properties in the San Francisco Bay Area, is situated in a very seismically active region. The following statements summarize the potential impacts of the seismic setting upon development of the subject property.

Based on an analysis of the historic earthquake records of the active faults, published and unpublished data on potentially active faults and the geographic relationship between the subject property and the faults of the San Francisco Bay region, it is reasonable to conclude that the major Bay area fault systems have the greatest potential for adversely impacting the proposed development.

A coalition of scientists from the U. S. Geological Survey, Southern California Earthquake Center, and the California Geological Survey prepared the Uniform California Earthquake Rupture Forecast (2008). Data presented by this group estimates the chance of one or more large earthquakes (Magnitude 6.7 or greater) in the San Francisco Bay region within the 30 year time period between 2007 and 2036 to be approximately 63 percent. In that same time period, the chance for a magnitude 6.7 or greater earthquake on the Concord, Calaveras, Hayward, and San Andreas faults is 3, 7, 31, and 21 percent, respectively.

The site is not within a Special Studies Zone for active faults. A list of pertinent active faults, their distance, expected moment magnitude, and estimated mean peak ground acceleration (PGA) is provided below:

FAULT	DISTANCE (Miles)	MOMENT MAGNITUDE[1]	ACCELERATION (g)[2]
San Andreas (Northern)	6.6	7.4	0.30
San Gregorio	8.4	7.0	0.21
Hayward	11.0	6.4	0.12
Rodgers Creek	16.8	7.0	0.13
Point Reyes	18.4	7.0	0.13

(1) Estimated maximum moment magnitude from CDMG (1996) Open File Report 96-08, and Cao, et al. (2002).
(2) Mean peak ground acceleration averaged from Boore, Joyner, and Fumal (1997).

The specific hazards associated with active faults can be confined to ground shaking and ground failure due to earthquakes. Since there is no mapped active fault recognized by the California Geological Survey as crossing the site, the hazard for surface rupture through the subject site is unlikely from known active faults of the region. The subject site lies within the San Francisco Bay Area, a region of high seismic activity. The probability is very high for a major earthquake to occur in the Bay Area within the economic lifetime of the proposed structures.

Ground rupture tends to occur along lines of previous fault rupture or tectonic creep. Because no known faults (active or otherwise) cross the site, this hazard is low. The project site would be susceptible to ground shaking and ground failure during a major earthquake on the significant faults of the San Francisco Bay region. The seismic risk to a structure depends on the distance from the epicenter; the characteristics of the earthquake; the geologic, groundwater, and soil conditions underlying the structure and its vicinity; and the nature of the construction. Ground shaking at the site is likely to occur during the life of the project.

The effects of seismically-induced ground shaking at the subject property resulting from a large magnitude (6.0 or greater) earthquake on any major fault within the San Francisco Bay region can be estimated from accounts of the effects which were described shortly after the 1906 earthquake, magnitude 8.3 with an epicenter located between San Francisco and Marin Counties. Studies by Lawson (1908) and Borcherdt, et al (1975) indicate that the highest ground shaking intensities (i.e., very violent) occur within 1500 to 2000 feet of the master trace of the San Andreas fault, and that violent ground shaking generally occurs at sites that are within 1 mile of the master trace. Furthermore, sites situated between 1 and 3 miles of the master trace would likely experience very strong ground shaking intensities. Therefore, in the event of a large magnitude earthquake on the noted Bay Area faults, it is reasonable to assume that the subject property will experience strong to very strong ground shaking. It should be emphasized that this estimate is based on a small number of field observations in a region that was sparsely populated during the 1906 earthquake on the San Andreas fault.

Since these are estimates, and they are based on a small amount of data, they should be used as a general guide to reflect future ground shaking intensities. Nevertheless, we believe that it is reasonable to conclude that any structures constructed on the subject property should be expected to experience very strong ground shaking in the event of a major earthquake on active faults within the San Francisco Bay region.

Rather rough quantitative measurement of the dynamic characteristics of an earthquake can be estimated for the proposed structure. This estimate is based upon the attenuation method advanced by Boore, Joyner and Fumal (1997), for estimates of ground motion characteristics expressed in terms of acceleration of gravity. Based upon this attenuation relationship, a maximum moment magnitude on the San Andreas fault would result in an estimated mean peak ground acceleration of approximately 0.3g. For comparison, the interactive web site of probabilistic seismic hazards prepared by the U. S. Geological Survey indicates that the peak ground acceleration value that would have a 20 percent chance of being exceeded in a 50 year period is approximately 0.78g.

The peak values of ground acceleration represent a single moment acceleration. Ploessel and Slosson (1974) indicate that the repeatable high ground acceleration value for epicenters within 20 miles of a site would be approximately 65 percent of the peak value shown above.

The local building codes and current CBC recommendations reflect the design parameters for mitigation of earthquake conditions. The appropriate code should be utilized for minimum design standards based upon the particular features of the structure and the recommended minimum seismic load factors.

Liquefaction Potential - General

Liquefaction occurs when loose, saturated, granular deposits or low plasticity cohesive deposits lose strength in response to increased pore pressure during cyclic seismic loading. A regional assessment of liquefaction potential within the San Francisco Bay area was conducted by representatives of the U. S. Geological Survey (Witter et al, 2006). In this assessment, the central play field area, the westerly shoreline of the Seminary Point, and the northern border of Seminary Knoll were mapped as alluvial areas with either a High, or Moderate Liquefaction Susceptibility.

Herzog logged three exploratory borings in the western northern half of the playfield area, and determined that the materials encountered either consisted of cohesive soils not susceptible to liquefaction or shallow bedrock materials.

Tsunami Hazard

The west-central portion of the site area was previously identified as within a potential tsunami runup area by Ritter and Dupre (1972), but Herzog (1982) indicated that this interpretation was in error, and this area would not be impacted by tsunami. A 2009 map issued by the California Geological Survey shows the shoreline of Strawberry Point having a potential for being inundated by a tsunami (see Figure 4, Tsunami Inundation Map). This

map indicates that only the low lying elevation immediately adjacent to the shoreline, and the low lying elevation between Silva Island and the northwest corner of the site as being subject to inundation.

SITE EXPLORATION AND LABORATORY TESTING

Site Exploration

Field exploration of the site consisted of logging and sampling of eight hand-excavated test probes to a maximum depth of 5 feet below existing grade on April 20 & 22, 2010, and ten exploratory borings, up to a maximum depth of about 18-1/2-feet below existing grade using either a truck-mounted Mobile B-24 drill rig or a portable, Minuteman rig on May 20, 2010. Please see Figure 5, Site Aerial Photo and PRA Boring Locations, for exploratory test probe and boring locations.

Relatively undisturbed soil samples for laboratory testing were recovered in a 2.5-inch outside diameter (OD) California sampler or in a 2-inch OD split spoon sampler driven by a 140-pound hammer free-falling 30 inches. The number of blows applied to advance the sampler was recorded for each 6 inches of penetration and then converted to Standard Penetration Test values and recorded on the Exploratory Boring Logs.

Logs describing the material encountered in the test probes and borings were recorded in the field by an engineer from this office and are shown on Figures 6 through 23.

Laboratory Testing

Laboratory testing was conducted on selected borehole samples to obtain data on density, moisture content, unconfined compressive strength, Atterberg limits, and classification of the soil. Test results are shown on the Exploratory Boring Logs.

FOCUSED STUDY AREAS

- **Seminary Knoll**

This area is located at the extreme western corner of the campus. It is our understanding that an access would be constructed across a swale from the presently existing maintenance building to a knoll of very hard greenstone rock. The center knoll area would be utilized for parking and structures developed around the periphery of the knoll. An additional area under consideration is the property within the loop of Shuck Drive continuing from the maintenance building and looping in a clockwise direction uphill (see Figure 24, Seminary Knoll Site Map).

The central western knoll area around elevation 104.2 is underlain by shallow, dense bedrock materials consisting of sandstone, claystone, shale, and chert, surrounded by swales filled with colluvium, and shallow earthflow and mudflow materials to a maximum depth of 10 feet in thickness. The central knoll area was investigated by Herzog in Test Pits 16 and 17, and by PRA borings 6 and 7. The test pits and borings indicated shallow

lying bedrock materials, with bedrock depths in these data points ranging 1 to 4 feet below existing grade.

Of the swales immediately surrounding the knoll, two are shown on the Herzog mitigation map (Appendix A2) as having a subdrain installed to mitigate potential slope movement. The approximate locations have been transferred to the Site Map on Figure 24. One of these swales is located at the southeastern portion of the knoll and would be traversed by an access road from Shuck Drive to gain access to the knoll. This swale has approximately 4 feet of overburden. No clean outs, pipe, or discharge points were observed of these Herzog subdrains.

The Shuck Drive loop area has a large shallow earthflow that begins from the south facing slope at the northern limits of the Golden Gate Baptist Theological Seminary property that flowed down past the upper loop of Shuck Drive, through the proposed development area, over the lower loop of Shuck Drive and continuing south past the southern limit and onto the adjoining property. This area is covered with trees and brush. The Herzog Mitigation Map (Appendix A2 shows a subdrain located within the Shuck Drive loop area that terminates at the lower end of Shuck Drive. No clean outs or discharge pipes were observed in the area shown in the Herzog Mitigation Map. Three test pits were excavated by Herzog (TP13, 14, and 15) and one boring was drilled by PRA (B-17). These explorations determined that within the Shuck Drive loop area, the test pits show a shallow earthflow overlying residual soil and colluvium, which is in turn underlain by a shale and graywacke sandstone. The depth to dense bedrock was determined in the test pits as varying from 4 to 6 feet below the existing grade. The PRA boring was advanced within the downhill loop of Shuck Drive and encountered a deep residual soil of clayey sand, sandy silt, and blue-gray silty clay overlying a siltstone bedrock at a depth of 11 feet below existing grade.

The Conceptual Rendering of proposed development for the Seminary Knoll area as presented in Appendix C shows several units along the southeast face of the slope below the knoll. This slope has several small erosion gullies and shallow mudflows that will require shallow grading and drainage mitigation for development. Pier and grade beam foundations would likely be required for development on this slope. The western most unit that wraps around the knoll lies at the headward edge of a previously mapped mudflow area that had some shallow mitigative grading. This area would likely require additional grading for site development. The northern area of the knoll is indicated on this map as having a recreation area with a swimming pool. This area lies within a saddle area at the headward edge of a previously mapped mudflow area that had only a subdrain installed. This area would require additional mitigation grading for site development

- **Student Village**

This focused study area consists of four separate sub-areas for consideration. The northern-most portion of this area lies north of the intersection of Reed Blvd. and Storer Drive. There is a narrow access path, "Lovett Lane" leading from Reed Blvd. to existing dwelling units. This parcel has a small mudflow area which is evident by a disturbed area of 12 to 18 inches in thickness and approximately 60 feet in width. The other sub areas

consist of two flat parcels adjacent to either parking facilities or Truett Hall, and a flat area below a slope used for a playground area and basketball courts. The intervening tree-covered slope rising from the court yard up to the pad adjacent to Truett Hall will not be developed.

The sub-area located north of Storer Blvd was investigated with borings B-17, 18, and 19 by Herzog Geotechnical (1979), and supplemented by PRA boring B-8 (see Figure 25, Student Village Site Map). An existing, small mudflow was identified during the 1979 Herzog study. The exploratory borings within this sub-area determined that the site is covered by topsoil and residual soil overlying a sheared sandstone and shale bedrock. The depth to the bedrock material varied from approximately 2 to 8 feet below existing grade. The Reed Blvd. road cut exposed a weathered sandstone and shale bedrock contact that was measured as having a strike of North 40^0 West, with a dip of 60^0 to the northeast. No free groundwater was encountered in these borings.

The two sub-areas located within the central portion of this focused study area adjacent to parking facilities and Truett Hall were investigated by Herzog in 1979 with exploratory borings B-8 through B-14 (see Figure 25, Student Village Site Map). The flat pad area on the north side of this subarea is covered with a thin layer (1 foot) of sandy silt topsoil over either a mixture of sandstone and serpentine bedrock. Boring 10 midway between the northern and southern subarea encountered a brown sandy silt fill over a black-brown sandy silt topsoil over a orange brown sandstone at a depth of approximately 6 feet below existing grade. The southern subarea encountered a shallow bedrock profile at a depth of 1 foot below grade in borings 11 and 12, with borings 13 and 14 encountering from 3 to 6 feet of fill overlying either a red brown of black brown sandstone.

The third subarea is located within the existing playground and basketball court area at the toe of a slope. No prior borings had been excavated within this area and was explored during this study by borings 5, 15 and 16 (see Figure 25). These borings encountered a deepening soil profile from the south to north end of this subarea. The northern end as explored by boring 15 encountered a moderately deep soil profile consisting of sandy clay fill with siltstone particles to a depth of 6 feet below grade, underlain by a large siltstone "floater" within a matrix of silty clay, then transitioning to a sandy clay with sandstone rock fragments. The depth to weathered bedrock was determined as approximately 17 feet, with groundwater also encountered at this depth. Approximately midway between the northern and southern portions of this subarea, boring 5 encountered a mixture of silty clay with siltstone and sandstone fragments to a depth of 2-1/2-feet, with water seepage noted at this depth. Boring 16, located at the southern end of this subarea encountered a very dense orange brown sandstone at the surface. It should be noted that the Herzog Geologic Map (Appendix A-1) had mapped the slope above the northern portion of this subarea as an area of poor drainage, and several seepage areas were mapped on the slope. This would be consistent with the wet areas noted in borings 5 and 15. The Herzog Mitigation Map (Appendix A-2), indicated that a subdrain was installed just below and along the break in slope between the uppermost pad area and the intervening slope down to the western most subarea (see also Figure 25). No clean outs or other indications of this subdrain was observed during our site review.

Subsequent to the field investigation performed by PRA, the Conceptual Rendering submitted to this office for the Student Village (see Appendix C) shows that it is presently planned to develop only the center sub-area adjacent to Truett Hall and the existing parking facilities. The rendering shows four separate buildings proposed. The locations of these buildings would be expected to encounter bedrock at shallow to moderate depth. Due to the proximity to the break in slope from pad level, piers may be required to provide a uniform bearing into non-yielding material throughout the foundation area.

- **Chapel Hill**

This area is an elevated knob of land that had been previously graded that is referred to as Chapel Hill (see Figure 26, Chapel Hill Site Map). Some fill was observed along the northern periphery of the flat pad, and this site is a possible location for an amphitheater that will require an excavation on the order of 12 feet below presently existing grade. This site was explored with a B-24 drill in Boring B-9, and later with Boring B-19. B-9 was drilled in approximately the center of the knob and encountered very dense sandstone and siltstone bedrock at the surface that resulted in refusal to drilling at a depth of 1 foot below grade. Boring 18 was later drilled on the flank of this knob and encountered sandy silt with some gravel to a depth of 4 feet where a hard weathered sandstone was encountered. Boring was terminated at a depth of 5 feet below grade within very dense sandstone. Excavation for the amphitheater will require a dozer with hydraulic rippers to excavate this very dense sandstone and siltstone bedrock material.

- **Seminary Vista West**

This focused study area fronts Chapel Drive and consists of a steep south-facing engineered fill slope down the lower portion of Chapel Drive and Richardson Bay. The Seminary Vista West Site Map (Figure 27) shows mapped landslides below upper Chapel Drive, with the Herzog Mitigation Map (Appendix A-2) indicating that this area was subjected to significant site grading to replace the landslide with compacted engineered fill. While no report has been provided this office regarding the mitigation work performed, the site review performed for this study observed smooth, compacted slopes and concrete v-ditches to control surface drainage. Since it is proposed to develop this site off upper Chapel Drive, two exploratory borings B-3 and B-10 was excavated in the flat area off Chapel Drive (see Figure 27) to determine subsurface conditions within this area. The hand-excavated B-3 exploratory probe encountered sandy clay with siltstone bedrock material, with refusal achieved at a depth of 1 foot below existing grade. Boring B-10 was excavated with a B-24 drill rig and verified that a very dense siltstone bedrock was present at the surface, with refusal to further drilling achieved at 2 feet below grade.

The Conceptual Rendering for the Seminary Vista (see Appendix C) shows Vista West to be developed with four units constructed off Chapel Drive. The development will be adjacent to and upon the descending southerly facing engineered fill slope. Due to the slope proximity, site foundations will consist of pier and grade beams, with embedment into uniform, non-yielding bedrock material.

- **Seminary Point**

This focused study area is located at the southwestern most portion of the campus. The site area consists of a large knob at the western end of a spur ridge, with descending slopes to Richardson Bay. The site is currently developed with three structures (Tichenor Village) that may be demolished and replaced. There is a private access road leading to Tichnenor Village from the terminus of Chapel Drive. This private paved road continues past Tichenor Village and a locked cable/chain gate as an unpaved fire road. This fire road is located approximately mid-slope on this site and continues until another locked gate, where beyond there is an existing private, key-gate controlled development at the lower portion of Chapel Drive (see Figure 28, Seminary Point Site Map). Development is being considered within this focused study area at Tichenor Village, on the slope above the Tichenor Village access road, and on the slope below the presently unpaved fire road.

North of Tichenor Village, there are several swales that contain slopewash, colluvium and earthflow deposits. The Herzog Mitigation Map (Appendix A-2) indicates that only surface drainage and a few subdrains were installed within these deposits, with no other mitigation performed Similarly, along the oversteepened slope between the fire road path extension of Chapel Drive south of Tichenor Village and the shoreline fronting Seminary Drive, there are several swales with mudflow deposits, as well as numerous road cut exposures of sandstone and shale bedrock material. As can be seen on Figure 28), there is a shallow, 4 foot thick earthflow that was previously mapped by Herzog south of the President's House that was subsequently mitigated by grading to construct an engineered compacted slope (see Appendix A, Figure A-2).

This focused study area was investigated by exploratory borings B-2, 4, 13, and 14 (see Figure 28). Boring B-1 was hand-excavated at the western end of Tichenor Village, and determined that this point is underlain by shallow lying, dense siltstone bedrock. Borings B-2, 13 and 14 were drilled along the fire road pathway south of Tichenor Village. These borings encountered residual soil overlying dense siltstone and sandstone bedrock at depths varying from 3 to 6 feet below the ground surface. Boring B-12 was excavated using a portable Minute-Man drill rig on the southeast facing slope above the repaired hillslope area. This boring encountered a thin veneer of approximately 2 feet of residual soil overlying a very dense bedrock of sandstone, siltstone, and claystone.

The Conceptual Rendering for Seminary Point (see Appendix C) shows approximately 30 different structures proposed for development. No units are proposed on the hilltop area rising from the President's House due to the presence of an archaeology site. Units are proposed upslope of the access road, at Tichenor Village, upslope and downslope of the fire access road east of Tichenor Village, and a swimming and recreation facility southwest of Tichnenor Village. The majority of the units are anticipated to encounter a shallow lying bedrock unit. The units on the descending slope below the President's House is located in a transition area from an reconstructed slope to an area that had just shallow regrading and debris removal. This area may require additional site grading for development. The remaining units may have surface grading and drainage mitigation required for site development. Depending upon the specific site grading proposed, conventional

foundations or pier and grade beam can be considered.

- **Seminary Vista East**

This focused study area lies upon the eastern-most portion of the campus on an east-facing downward slope below the adjoining Mission Drive (see Figure 29, Seminary Vista East Site Map). The geologic mapping for this study area indicates the presence of a large earthflow crossing portions of the study area, and was explored by Herzog in their test pits 10 and 11, boring 22, and supplemented with borings B-4 and B-11 by PRA. Boring 22 was excavated just off Mission Drive at the top of the lot at the southern end of this study area within one lobe of the mapped earthflow. This boring encountered approximately 9 feet of dense, gravelly silt and sand road embankment fill, overlying a brown silty clay colluvial soil, with a highly decomposed sandstone encountered at a depth of approximately 18 feet below grade with no free groundwater reported. PRA hand-excavated an exploratory probe B-4 downslope of Herzog's Boring 22. PRA's probe encountered a earthflow materials composed of sandy clay with gravel and siltstone fragments, with visible water on soil fragments.

PRA excavated Boring B-11 at the northern end of this lot within the other lobe of this earthflow, also just below Mission Drive. This boring encountered silty sand and sandy clay to a depth of approximately 6 feet below grade, underlain by saturated, dark gray sandy silt and silty clay with rock fragments to a depth of 13 feet, overlying a 3 foot thick, orange brown silty clay layer over a weathered sandstone bedrock. Free groundwater was encountered at a depth of 13 feet, with the groundwater level dropping to 17-1/2-feet below grade approximately 5 minutes after drilling completed.

The test pits excavated by Herzog approximately mid-slope of this study area encountered loose topsoil, and wet colluvial material to a depth of 12-1/2-feet in Test Pit 10, with material resembling highly weathered rock at the bottom of the pit. Test Pit 11 encountered loose topsoil and west colluvial material to a depth of 10-feet, where a weathered mottled orange-gray-brown siltstone and brown sandstone was reported. For comparison, Herzog's test pits 8 and 9 were excavated south of and outside of the earthflow on this slope, and these encountered loose topsoil, and wet colluvium to a depth of approximately 2-1/2-feet below grade, underlain by gray shale and brown sandstone.

The Herzog Mitigation Map (Appendix A-2) indicates that a single subdrain was excavated within the center portion of the swale on this lot, with a small chevron drain extended to test pit 11, where seepage was encountered.

Development is proposed between the lobs of the earthflow deposit. While this area may not be mapped as underlain by earthflow deposits, the adjacent unstable materials would require mitigation with regrading as part of the development considerations for this focus area.

Subsequent to the field investigation by PRA, a Conceptual Rendering was issued for Vista East (see Appendix C) that shows that is proposed to develop this site area with three units, with two units north of the swale and one unit to the south of the swale. As

described above, extensive grading and drainage mitigation will be required for site development at this location to mitigate the soft mudflow materials present in this area.

DISCUSSION

Based upon review of referenced documents, site review, laboratory testing and exploratory boring program, it was determined that the Golden Gate Baptist Theological Seminary Campus has a variety of subsurface conditions present that could impact the various selected focused study areas. Site conditions range from surface bedrock outcrops in cut slopes to fills, alluvium, colluvium, bay mud and earthflow deposits.

The bedrock materials underlying the site are predominantly sandstone and shale (i.e., siltstone and claystone), which is the "matrix" within the melange unit of the Franciscan Complex. The sandstone and shale units are in contact with more exotic rocks of the Franciscan Complex, which include graywacke sandstone, shale, chert, and serpentinite. The bedrock units generally display a localized uniform structural orientation commonly trending in a northwesterly direction (North 40 degrees West to East-West) with a dip moderately to steeply to the northeast (17 to 85 degrees to the North). While localized shearing of the bedrock units was observed, the generally uniform structural orientation indicates that the area may not be as deformed as other typical Franciscan melange terranes within the Coast Ranges.

Quaternary soil deposits at this site include topsoil, residual soils, colluvium, earthflow landslide debris, and fill material. The depth of topsoil and residual soil deposits range from a few inches to several feet in thickness. Soil deposits with a more clay like character tend to be expansive and on slopes incur slope creep. Earthflow landslide deposits range in thickness from a few feet up to on the order of 10+ feet. Based on the mitigation measures map in Figure A-2 of Appendix A, several of the earthflow deposits were mitigated by the installation of a subdrain penetrating through the soil materials and into the underlying bedrock. A few of these earthflow landslide deposits are indicated as being removed and replaced with compacted engineered fill. This office has not received any report documenting the installation of the mitigation measures depicted on Figure A-2 (Appendix A), but the slope condition observed between upper and lower Chapel Drive suggests that major slope reconstruction had occurred at this location.

Seepage is common on several slopes, particularly after seasonal rains, and there are some areas of poor surface drainage throughout the site. Several surface drain inlets and v-ditches were observed at the site that represents past efforts to mitigate surface drainage issues. Development of the proposed focused study areas will also require site specific drainage mitigation measures for both surface and subdrainage conditions. These mitigation measures would direct intercepted surface and subsurface water to controlled municipal facilities.

While indications of bedrock faults were indicated by sheared rock, there is no indication for the presence of an active earthquake fault to be present within the Campus. The site, as is expected for other areas within Mill Valley, would be expected to be impacted by

seismic ground shaking during earthquakes on active faults within the San Francisco Bay region. A potential for tsunami run-up in low elevation shoreline areas is present, but these would not impact proposed development within the focused study areas. A potential for liquefaction is indicated on published regional maps, but site specific subsurface investigations indicate a low potential for liquefaction in the suggested likely area within the play field at the site. The proposed focused study areas are not underlain by subsurface materials that would be subject to liquefaction.

CONCLUSIONS AND RECOMMENDATIONS

Based upon the results of this Stage 1 Feasibility Study, it is our opinion that the designated focused study areas are feasible for development, with implementation of appropriate mitigation measures. Specific design mitigation measures would be based upon site specific development plans submitted to this office for review and included in a Stage 2 Geotechnical Design Study. The following are site conditions for consideration in the design of development scenarios for the various focused study areas:

Seminary Knoll

This area consists of two subareas. The central knoll area west of Shuck Drive is underlain by shallow bedrock materials, but access would be required to cross a mapped earthflow deposit within a swale. Access would likely require removal of earthflow materials to competent, non-yielding bedrock and replacement with a compacted engineered fill buttress with surface and subsurface drainage controls. Due to the presence of several earthflow deposits surrounding the central knoll area, surface and subsurface drainage controls should be implemented to prevent surface overland flow of drainage into these swales in an uncontrolled manner. Grading of the central knoll area may encounter localized hard bedrock materials requiring dozers with hydraulic rippers. There is a possibility that there may be isolated, very hard bedrock units that would resist break-up with conventional grading equipment and require specialized machines for break-up or removal. Based upon the materials observed within the proposed focused study areas, this condition is expected to be limited. Depending upon the specific location of proposed structures, additional site grading may be required of the surficial units mapped at this site. Earthflow areas that were mitigated solely with subdrains may require additional grading and slope reconstruction to accommodate proposed development scenarios.

The subarea located within the Shuck Drive "loop", is underlain by an earthflow that extends from above upper Shuck Drive at the extreme northern limits of the Campus down through the site and into a lower swale into the adjoining property. This earthflow is indicated as having a subdrain installed to control subsurface seepage. Subsurface investigation of this earthflow deposit within the Shuck Drive loop indicates the thickness of this material to vary from 4 to up to 11 feet in thickness. Development of this portion of the focused study area would require regrading to remove the earthflow deposit. Depending upon the final grade elevations, grading may be required to install a buttress engineered fill to final grade elevations. Due to the presence of earthflow material upslope of the upper loop of Shuck Drive, where a level catchment and buffer area is not provided between the structure and an uphill slope, a catchment wall may be necessary to protect

against the potential for impact from uphill mudflows.

Due to the slope and variable rock and groundwater conditions existing at this focused study area, it is anticipated that the preferred foundation system would likely be drilled, cast in place reinforced concrete piers that extend into the underlying non-yielding bedrock.

Student Village

As previously described, this study originally consisted of four separate subareas for focused study. The northern most subarea, located above Storer Drive is overlain by a shallow mudflow area, underlain by residual soils resulting from the weathering of the underlying parent bedrock. The depth to non-yielding bedrock in this area ranges from 2 to 8 feet below existing grade. Based upon the slope and site conditions, this subarea could be developed with surface grading and drainage controls, and with either stepped, conventional footing foundation system, or a pier and grade foundation system. It is our understanding that this subarea is not being considered for development at this time.

Two subareas on the central portion of this focused study area lie upon a constructed pad adjacent to either parking facilities or Truett Hall. The exploratory borings at this location encountered either shallow bedrock or up to 6 feet of fill, depending upon the location on this relatively level pad. As shown in the Conceptual Rendering for this focus area, it is proposed to develop this subarea with four separate buildings. The location of the buildings indicate that pier and grade beams will likely be required in order to provide a uniform bearing into non-yielding bedrock materials due the variable depth of fill and colluvial soil overlying the bedrock unit, and the proximity of a descending slope.

The remaining subarea of this study area is located within an existing level area adjacent to an ascending slope presently used as a playground and basket ball court. Exploratory borings within this subarea determined a variable depth to bedrock, with deeper soils up to 17 feet in thickness at the northern end of this subarea, and with bedrock material at the surface at the south end of this subarea. The north end encountered free ground water, and is consistent with the mapping of seepage areas on the slope above this site.

Development of this subarea would require surface grading, and likely require a pier and grade beam foundation system due to the variable depth to bedrock. It is our understanding that this subarea is not presently being considered for development at this time.

Chapel Hill

This focused study area is proposed to be the location for an amphitheater, that would require an excavation of on the order of 12 feet below presently existing grade. Subsurface exploration of this study area determined shallow, dense bedrock was present, with refusal to drilling encountered with the truck-mounted B-24 drill rig. The bedrock material encountered was a very dense sandstone and siltstone. Due to the fractured nature of this bedrock, it is believed that it is rippable using a dozer with hydraulic rippers.

Depending on the specific site development plan, this site may require the construction of retaining walls with subsurface drainage controls. Due to the density of the bedrock, it is likely that a conventional footing foundation system could be constructed for this site.

Seminary Vista West

This focused study area lies upon a level area adjacent to Chapel Drive and above a descending, south-facing slope. This descending slope is indicated on the Mitigation Measures Map (Appendix A, Figure A-2) as being a reconstructed, engineered fill slope. During our site review, it was noted that the slope had been graded and concrete v-ditches installed on benches for surface drainage control. Two exploratory borings were drilled on the flat pad area adjoining Chapel Drive. These borings encountered a very dense sandstone bedrock at shallow depth. Site development issues would be implementation of surface drainage controls, and a pier and grade beam foundation system, due the proximity of the descending slope.

Seminary Point

This focused study area includes Tichenor Village, and areas south of the Village adjoining a fire road, and a south-facing slope, just south of the President's House. Exploratory borings excavated for this study area encountered relatively shallow bedrock conditions, varying from near surface to up to 6 feet below existing grade. The south-east facing slope below the President's House is mapped as reconstructed, engineered fill slope. There are several areas mapped on the downslope below Chapel Drive and north of the Tichenor Village mapped as earthflows, some of which had subdrains installed. These areas should be considered as potentially unstable until mitigated by excavation of unstable soils and founding a reconstructed, buttress fill slope founded upon non-yielding bedrock materials. Several small earthflow deposits were mapped between the unpaved fire access road and Seminary Drive along the shoreline. The Conceptual Rendering (see Appendix C) indicates that several units are proposed for development on the slope descending from the unpaved fire access road. Some slope regrading will be required, including the installation of surface and subsurface drainage controls. Due to the variable site conditions and slope in this study area, it is recommended that a pier and grade beam foundation system be used.

Seminary Vista East

This focused study area lies upon an east-facing descending slope below Mission Drive. Two lobes of earthflow deposits was mapped on this site. Exploratory borings in this study area encountered road embankment fill, a wet, colluvial soil to depths up to 18 feet below grade. PRA's boring B-11 at the north end of this lot encountered silty sand and sandy clay to a depth of 6 feet, underlain by saturated, dark gray sandy silt and silty clay with rock fragments to a depth of 13 feet below grade, in turn underlain by a 3-foot thick, orange brown silty clay layer over a weathered sandstone bedrock. Free groundwater was encountered at a depth of 13 feet below existing grade.

Due to the presence of unstable soil deposits on this slope, site development would require extensive grading to remove this earthflow material and replace with a reconstructed engineered buttress fill with subsurface drainage controls. After reconstruction of the slope had been completed, any development would be required to be supported upon a deep pier foundation system.

ANTICIPATED LEVEL OF MITIGATION

The anticipated relative level of mitigation effort required for site development within the focused study areas is presented in Table 1. This table is subjective in that within each focused study area are different subareas and potential areas for development that may have varying degrees of mitigation required within the same focus area The table presents the list of focused study areas, the categories of Grading, Foundations, Drainage Controls, and Expansive Soils, and a subjective number within the matrix under each mitigation heading with 1 being relatively minor grading required to prepare the area to receive development, and 5 is considered when major areas of regrading is anticipated to be required for site development. Similarly, the anticipated relative complexity of foundation design and construction required for site development is also numerized. The extent of surface and subdrainage controls required for site development are indicated, and the relative level of mitigation to correct for the presence of expansive soils is also listed.

REFERENCES

Boore, D.M., Joyner, W.B., and Fumal, T.E., 1997, Equations for Estimating Horizontal Response Spectra and Peak Accelerations From Western North American Earthquakes: An Summary of Recent Work: Seismological Research Letters, vol. 68, num 1. Pa. 128-153.

Borcherdt, R. D., Gibbs, J F., and Lajoie, K. R., 1975, Maps Showing Maximum Earthquake Intensity Predicted in the Southern San Francisco Bay Region, California for Large Earthquakes on the San Andreas and Hayward Faults: U.S. Geological Survey Misc. Field Studies Map MF

California Geological Survey, July 1, 2009, Tsunami Inundation Map for Emergency Planning, San Rafael and San Quentin Quadrangles, Marin County, California.

Cao, T et al, 2003, The Revised 2002 California Probabilistic Seismic Hazard Maps.

Donald Herzog & Associates (DHA), Inc., August 31, 1979, Report - Soil Investigation, Golden Gate Baptist Theological Seminary, Mill Valley, California: Job No. 994.1.

DHA, March 22, 1982, Report - Geotechnical Reconnaissance for Master Plan, Golden Gate Baptist Theological Seminary, Mill Valley, California: Job No. 994.1.

DHA, May 19, 1982, Report - Geotechnical Reconnaissance for Master Plan, Golden Gate Baptist Theological Seminary, Mill Valley, California: Job No. 994.1.

DHA, August 10, 1982, Preliminary Report - Anticipated Remedial Measures, Golden Gate Baptist Theological Seminary, Strawberry Point, California: Job No. 994.1.

Ritter, J. R. And Dupre, W. R., 1972, Map Showing Areas of Potential Inundation by Tsunamis in the San Francisco Bay Region, California· U. S. G S Basic Data Contribution Map 52, Misc. Fld. Studies Map MF-480.

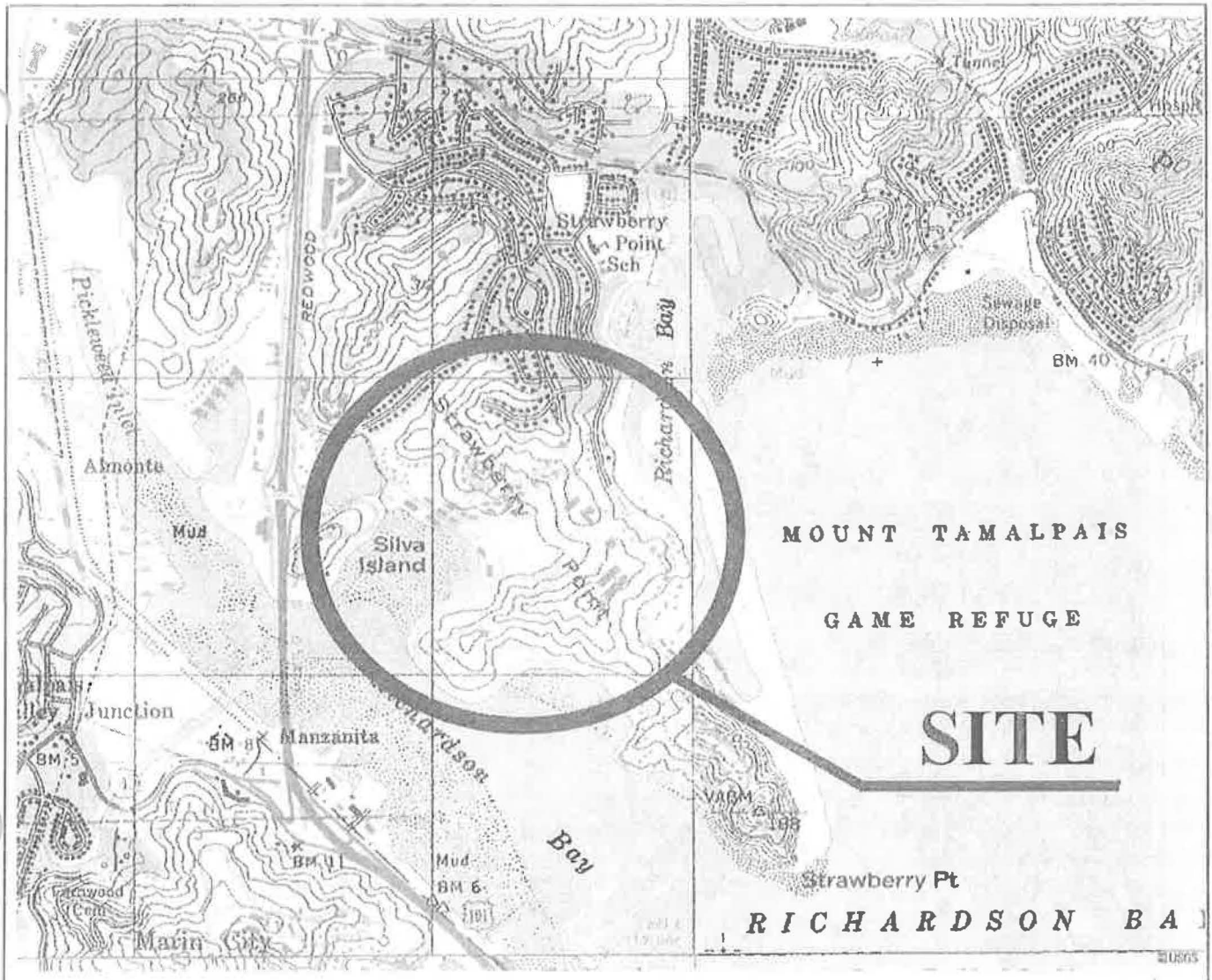
Witter, C. M., Knudsen, K. L., Sowers, J. M., Wentworth, C. M., Koehler, R. D., and Randolph, C. E., 2006, Maps of Quaternary Deposits and Liquefaction Susceptibility in the Central San Francisco Bay Region, California: U. S. G. S Open File Report 2006-1037.

TABLE 1
ANTICIPATED LEVEL OF MITIGATION REQUIRED FOR DEVELOPMENT
GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY

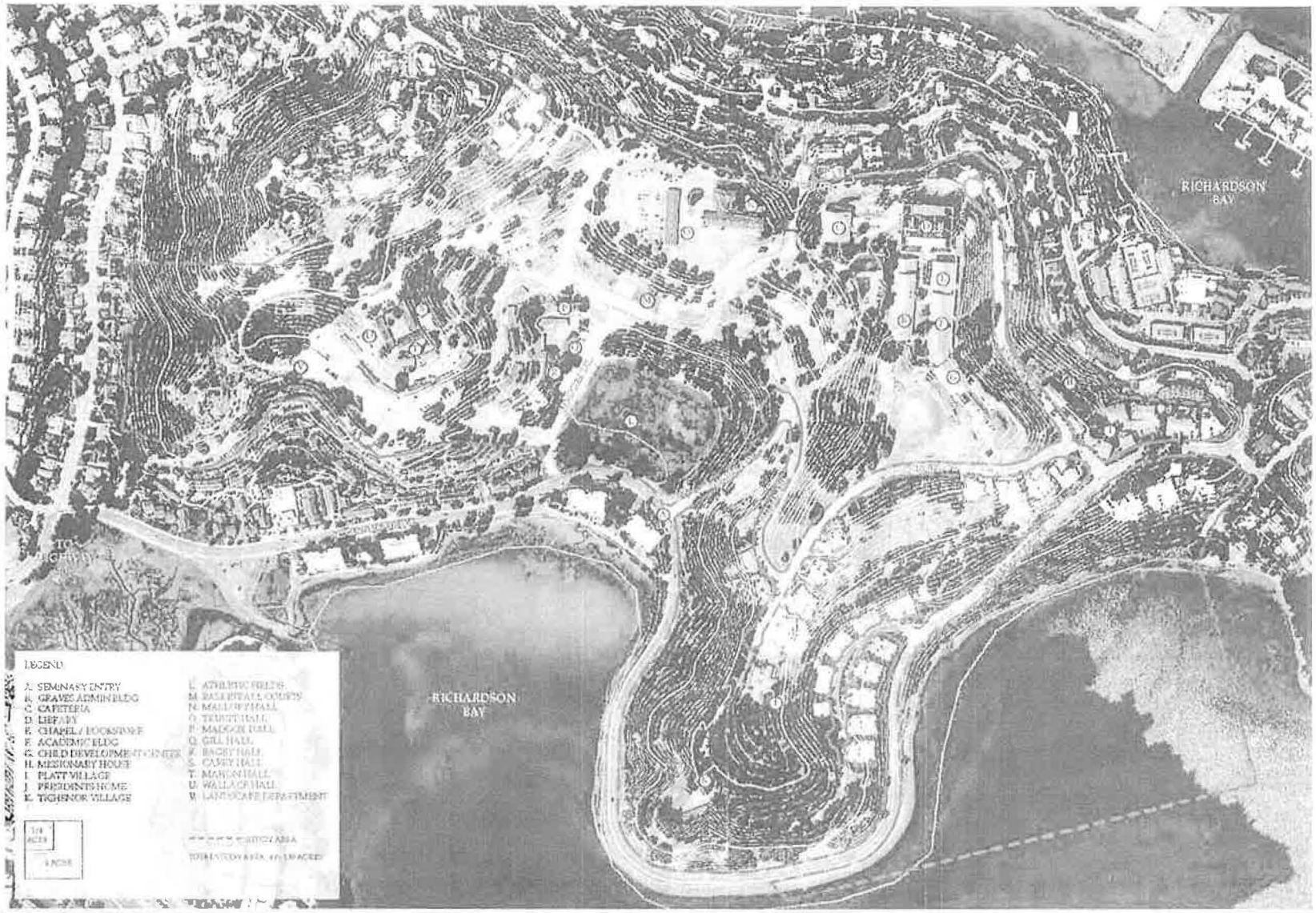
FOCUS AREA	GRADING	FOUNDATIONS	DRAINAGE CONTROLS	EXPANSIVE SOILS
SEMINARY KNOLL	4	4	4	1
STUDENT VILLAGE	2	2	2	2
CHAPEL HILL	3	2	2	1
SEMINARY VISTA WEST	1	4	1	1
SEMINARY POINT	4	4	4	2
SEMINARY VISTA EAST	5	5	5	3

ANTICIPATED LEVEL OF MITIGATION REQUIRED FOR DEVELOPMENT

1 MINOR_____▸5 SIGNIFICANT



NOTES	DATE MAY 2010	Purcell, Rhoades & Associates Consultants in the Applied Earth Sciences	
	JOB NO. 7463-01		
	DWG NO. II746301FIG1	**SITE LOCATION MAP**	FIGURE NO
	DRAWN IDA	GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY MILL VALEY, CALIFORNIA	1
	CHK'D DJR		
	APP'D DJR	CLIENT HARTMARIN	REV. NO.



HARTMARIN HART HOWERTON

GOLDEN GATE
BAPTIST THEOLOGICAL SEMINARY

CAMPUS PLAN

N 0 100 200

Purcell, Rhoades & Associates
Consultants in the Applied Earth Sciences

CAMPUS PLAN
GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
MILL VALLEY, CALIFORNIA

CLIENT HARTMARIN

FIGURE NO 2

REV NO

HART MARTIN
HART|HOWERTON

GOLDEN GATE SEMINARY — DEVELOPMENT STUDY AREAS

Design Resource & Associates
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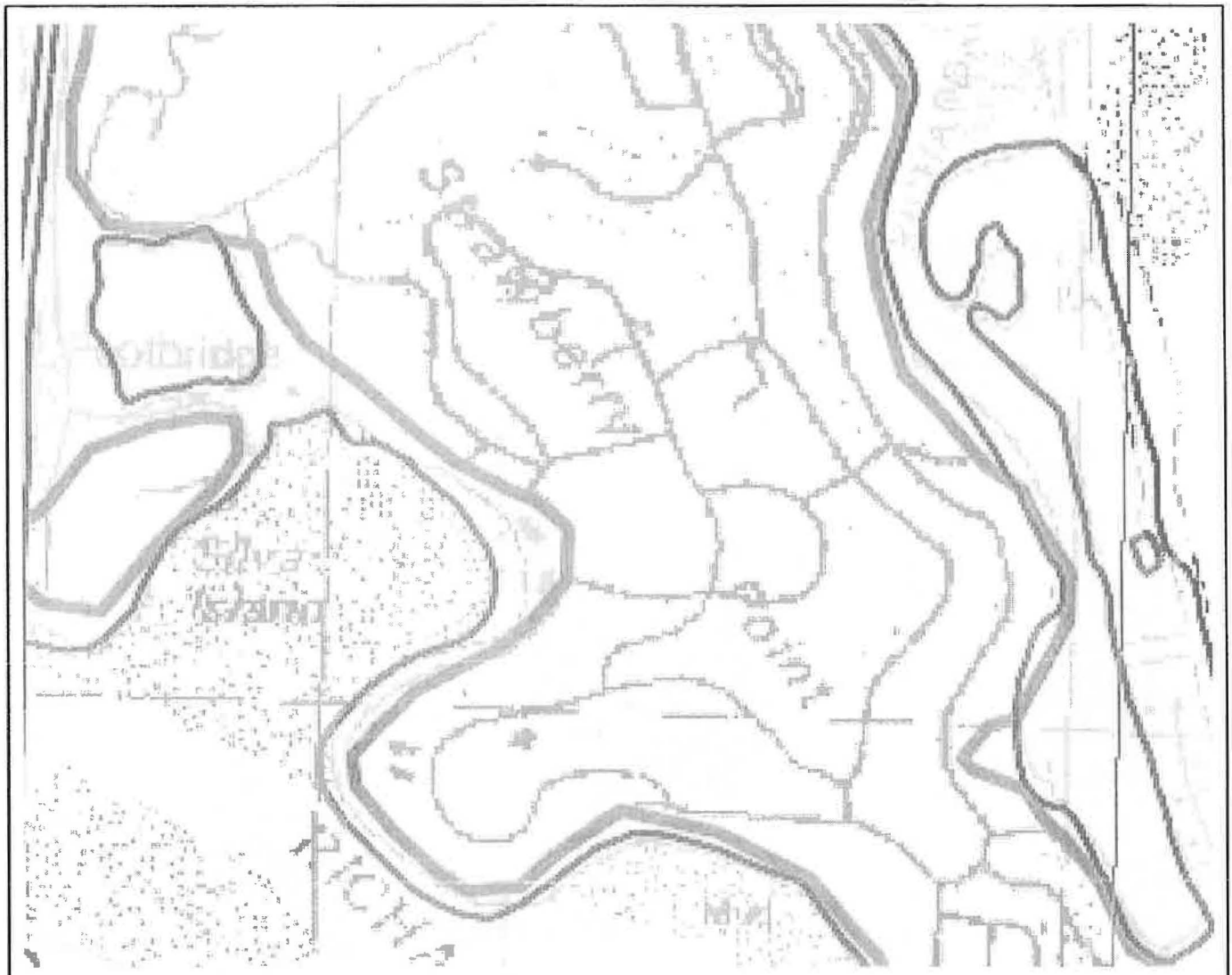
DEVELOPMENT SITE PLAN
GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
MILL VALLEY, CALIFORNIA

3

Page 23



Tsunami Inundation Line

Tsunami Inundation Area

Mean High Tide Line

N

NO SCALE

NOTES SOURCE: CGS (2009)	DATE MAY 2010 JOB NO. 7463-01 DWG NO. H746301FIG4 DRAWN IDA CHK'D DJR APP'D DJR	Purcell, Rhoades & Associates Consultants in the Applied Earth Sciences **TSUNAMI INUNDATION LINE** GOLDEN GATE BAPTIST SEMINARY MILL VALEY, CALIFORNIA CLIENT HARTMARIN	FIGURE NO. 4 REV. NO.

LOG OF BORING 17

Equipment 6" Solid Auger

Elevation 133± Date 8/8/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		BROWN SANDY SILT (Topsoil)
			30	12	100	3		MOTTLED BROWN FINE SANDY SILT (ML) some fine gravel (colluvial)
		20/3"		11	116	6		GRAY-BROWN SHALE AND SANDSTONE interbedded. Highly weathered, closely jointed, soft
						9		
						12		Free water not encountered

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LOG OF BORING 17
Baptist Seminary
Mill Valley, California

PLATE 21

LOG OF BORING 18

Equipment 6" Solid Auger

Elevation 142± Date 8/8/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		BROWN SANDY SILT (ML) trace of fine gravel (colluvium and fill)
			10	8	85	3		MOTTLED BROWN SANDY SILT (ML) medium dense, very moist (colluvial)
			10	14	98	6		ORANGE-BROWN SANDY SILT (ML) some clay, some angular gravel, dense (residual)
		24/3"		11	126	9		ORANGE-BROWN SANDSTONE AND SHALE interbedded, soft, highly weathered. Drilled to 10' with clay bit
						12		
						15		Free water not encountered

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LOG OF BORING 18

Baptist Seminary
Mill Valley, California

PLATE 22

LOG OF BORING 19

Equipment 6" Solid Auger

Elevation 130± Date 8/8/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		BROWN SANDY SILT (ML) topsoil and fill
			14	16	86			BROWN SANDY CLAY (CL) some fine gravel, very moist, stiff (colluvial)
				16	93	3		
			25	15	111			BROWN CLAYEY SILT (ML) totally decomposed sandstone (residual)
						6		
			30/3"	9	128			MOTTLED BROWN SANDSTONE highly weathered, partially decomposed, soft, friable
						9		
						12		Free water not encountered
						15		

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LOG OF BORING 19

Baptist Seminary
Mill Valley, California

PLATE 23

VILLAGE VII

LOG OF BORING 20

Equipment Truck-mounted 6" auger

Elevation 62± Date 10/12/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
Pocket Penetrometer psf						0		BROWN-GRAY MOTTLED FINE SANDY SILT (ML) some fine gravel, some clay, dry, loose to stiff (FILL)
4500+			13	11	98	5		
4500+ psf			26	16	106	10		BLACK-GRAY CLAYEY SILT (ML) original ground surface
4500+ psf			11	19	110	15		LIGHT BROWN SILTY CLAY (CL) some medium to fine gravel, trace of sand, plastic (COLLUVIAL)
		40/6"				20		SHALE highly weathered, fractured, closely jointed (Franciscan Formation)
	2	1200				25		End of Boring 23.5'
						30		Ground water not encountered

9'

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LOG OF BORING 20
Baptist Seminary
Mill Valley, California

PLATE 1

FACULTY EXTENSION STORER

LOG OF BORING 21

Equipment Truck-mounted 6" auger

Elevation 87± Date 10/12/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		BROWN CLAYEY SILT (ML) Topsoil
Pocket Penetrometer psf 4500+			17	19	108			BROWN PLASTIC SILTY CLAY (CL) damp (COLLUVIAL)
						5		BROWN SILTY CLAY (CL) (RESIDUAL)
			30/3"					SANDSTONE highly weathered, fractured, fine grained
						10		End of Boring 9.5'
								Ground water not encountered
						15		

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LOG OF BORING 21

Baptist Seminary
Mill Valley, California

PLATE 2

FACULTY AREA N

LOG OF BORING 22 STOKER

Equipment Truck-mounted 6" auger

Elevation 94± Date 10/12/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
Pocket penetrometer psf						0		GRAVELLY SILT & SAND (SM-ML) dense, dry, road embankment (FILL)
		400				5		
		800						
						10		BROWN SILTY CLAY (CL) some fine gravel embedded in the matrix (COLLUVIAL)
3500			22	20	111			
						15		
			45	18	117			SANDSTONE highly decomposed
						20		
	3	1000						
								End of Boring 22.5'
						25		
								Ground water not encountered
						30		

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LOG OF BORING 22
Baptist Seminary
Mill Valley, California

PLATE 3

VILLAGE VI

LOG OF BORING 23

Equipment Truck-mounted 6" auger

Elevation 36 Date 10/12/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		TOPSOIL & VEGETATION
Pocket Penetrometer psf			22	9	129	5		MIXTURE OF SILTY CLAY & GRAVEL (CL-GM) some sand, dense, dry (RANDOM FILL)
			11	15		10		GRAY-BLACK ORGANIC LAYERS OF SILTY CLAY intermixed with random fill, saturated (Fill of soft to medium stiff Bay Mud)
2400			14	21	105			
3500				16	109	15		BROWN SILTY CLAY (CL) with angular gravel embedded in the clay matrix (COLLUVIAL)
								soft augering at 19'
						20		
		800						SANDSTONE highly weathered and highly fractured, some residual soil zones
		1000						
		700				25		
		800						SANDSTONE weathered and fractured
		800						
	3	1200						
						30		End of Boring 28.5'
								Ground water not encountered
						35		

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LOG OF BORING 23
Baptist Seminary
Mill Valley, California

PLATE 4

LOG OF BORING 24

Equipment: Hollow Stem Auger

Elevation: 35± Date: 4/13/82

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
			12			0		GRAY-BROWN SANDY CLAYEY GRAVEL (GC) loose, moist (FILL)
UC = 1500 psf			19	15	116	5		becomes wet to saturated
UC = 2200 psf			43	14	122	10		DARK GRAY SANDY SILT (ML) medium stiff, moist to wet, with occasional sandstone fragments (?FILL)
UC = 1700 psf			45	19	123	15		MOTTLED GRAY-BROWN SANDY CLAY (CL) medium stiff to stiff, wet (COLLUVIUM)
UC = 2300 psf		90/11"	11	130		20		ORANGE-BROWN SANDSTONE intensely fractured, moderately hard, weak to moderately strong, deeply weathered
						25		BOTTOM OF HOLE
						30		No free water encountered

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LOG OF BORING 24

Golden Gate Baptist Seminary
Mill Valley, California

PLATE 2

LOG OF BORING 25

Equipment: Hollow Stem Auger

Elevation: 40+ Date: 4/13/82

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
			4			0		DARK BROWN CLAYEY SILT (ML) soft, saturated (FILL)
								BROWN CLAYEY GRAVEL (GC) medium dense, wet (FILL)
UC = 1200 psf			22	13	119	5		
								MOTTLED GRAY-BROWN CLAYEY SILT (ML) stiff, wet (? bay deposit)
UC = 1200 psf			22	11	122	10		
UC = 800 psf			14	22.2	111	15		
								ORANGE-GRAY-BROWN SANDY CLAY (CL) stiff, wet, with angular rock fragments (COLLUVIUM)
= 2000 psf			55	18	110	20		
								GRAY SHALE interbedded with orange-brown sandstone, moderately hard, weak, near vertical bedding planes
UC = 2200 psf			50/5"	14	109	25		
			BOTTOM OF HOLE					
						30		No free water encountered

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LOG OF BORING 25
Golden Gate Baptist Seminary
Mill Valley, California

PLATE 3

LOG OF BORING 26

Equipment: Hollow Stem Auger

Elevation: 43± Date: 4/13/82

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		MOTTLED BROWN CLAYEY GRAVEL (GC) (FILL)
								MOTTLED ORANGE-BROWN SANDY CLAY (CL) stiff, wet, with rock fragments (COLLUVIUM)
						5		BROWN SANDSTONE moderately hard, weak, deep to moderately weathered
			50/3"					
						10		BOTTOM OF HOLE
								No free water encountered
						15		

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LOG OF BORING 26

Golden Gate Baptist Seminary
Mill Valley, California

PLATE 4

LOG OF BORING 27

Equipment: Hollow Stem Auger

Elevation: 17± Date: 4/14/82

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample
UC = 2200 psf			13	13	116	0	
UC = 1200 psf			25	21	108	5	
UC = 2300 psf			50/4"	10	91	10	
						15	

DARK BROWN SANDY SILT (ML) (FILL)

DARK BROWN SILTY SANDY GRAVEL (GM) medium dense, wet to saturated (FILL)

MOTTLED GRAY-BROWN SILTY SAND (SM) with occasional gravel, medium dense, wet

MOTTLED BROWN-ORANGE-GRAY SANDY SILT (ML) medium stiff, wet

GRAY-BROWN SHALE intensely fractured, moderaately hard to hard, deeply weathered, steeply dipping

BOTTOM OF HOLE

No free water encountered

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LOG OF BORING 27

Golden Gate Baptist Seminary
Mill Valley, California

PLATE 5

LOG OF BORING 28

Equipment: Hollow Stem Auger

Elevation: 17+ Date: 4/14/82

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
UC = 2200 psf			11 16	8	118	0		DARK BROWN CLAYEY SILT (ML) med. stiff, wet to saturated (FILL)
								DARK GRAY CLAYEY GRAVEL(GC) medium dense, wet (FILL)
UC = 300 psf			9	28	89	5		MOTTLED DARK GRAY SILT CLAY(CL) medium stiff, saturated
UC = 700 psf			11	22	108			MOTTLED ORANGE-BROWN CLAYEY SAND (SC) medium dense, saturated, with angular rock fragments
UC = 800 psf			16	24	100			
UC = 1200 psf			35	18	111	10		MOTTLED ORANGE-BROWN SANDY CLAY med. stiff, saturated--less sand at 8.5', wet CL
								MOTTLED ORANGE-GRAY CLAYEY SILT (ML) stiff to very stiff, moist
UC = 2200 psf			65	14	123	15		ORANGE-BROWN CLAYEY SANDSTONE with gray silt inclusions, low hardness, friable
								GRAY-BROWN SILTSTONE moderately hard, weak, deeply weathered
			100/3"					BOTTOM OF HOLE
						20		No free water encountered

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LOG OF BORING 28

Golden Gate Baptist Seminary
Mill Valley, California

PLATE 6

LOG OF BORING 29

Equipment Hollow Stem Auger

Elevation 17± Date 4/14/82

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample
						0	
UC = 1200 psf			14 12	18	117		
UC = 800 psf			14	28	91	5	
UC = 2200 psf			60	11	123		
						10	
						15	

DARK BROWN SANDY SILT (ML)
medium dense, wet (FILL)
DARK GRAY SILTY GRAVEL (GM)
medium dense, wet (FILL)
DARK BROWN SANDY SILT (ML)
medium stiff, wet, high organic content (?bay deposit)

GRAY-BROWN SHEARED SHALE
intensely fractured, moderately hard, friable, deeply weathered

BOTTOM OF HOLE

No free water encountered

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LOG OF BORING 29
Golden Gate Baptist Seminary
Mill Valley, California

PLATE 7

TEST PITS

	Depth (Inches)	Description
1.	0- 20	Topsoil; dark brown silty sand, loose, wet
	20- 56	Colluvium/Residual soil; light brown sand (SP) and clayey sand (SC), loose to moderately dense, wet to saturated)
	56- 84	Weathered rock; yellow-brown sandstone and interbedded gray shale, closely fractured, low hardness, friable to weak, moderately weathered, extensive seepage at 78 inches
2.	0- 12	Topsoil; dark brown sandy silt (ML), loose, moist
	12- 19	Colluvium/Residual soil; mottled, yellow, orange-brown sandy clay (CL) with sandstone and shale fragments, moderately stiff, moist
	19- 21	Weathered rock; gray clayey gravel (GC) weathered shale fragments
	21- 42	Rock; gray shale, well consolidated, very thin-bedded, vertically dipping, closely fractured, moderately hard, moderately strong, moderately weathered

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TEST PIT LOG
Golden Gate Baptist Seminary
Mill Valley, California

PLATE 10

3.	0- 20	Topsoil; dark brown clayey sand (SC), loose, wet
	20- 35	Colluvium; dark brown sandy clay (CL) with rock fragments, seepage at 25 inches, moderately stiff, saturated
	35- 55	Colluvium; mottled orange-brown-gray, gravelly clay (CL), stiff, saturated
	55- 80	Colluvium (?); mottled orange-brown gravelly clay (CL), stiff to very stiff, saturated.
	80- 90	Weathered rock; orange-brown-gray weathered siltstone, poorly consolidated, low hardness, friable, deeply weathered
4.	0- 20	Topsoil; dark brown sandy clay (CL), moderately stiff, wet
	20- 26	Colluvium; mottled gray-orange-brown sandy clay (CL), moderately stiff, saturated, seepage at 24 inches, grades into lower material
	26-114	Colluvium; mottled orange-brown-gray clay, very stiff, sataurated, becomes grayer and siltier at 72 inches
5.	0- 9	Topsoil; dark brown clayey sand (SC), loose, wet
	9- 11	Residual soil; orange-brown and gray sand (SP) to sandy clay (CL), moderately dense to dense, wet
	11- 66	Weathered rock; orange-brown sandstone with gray clay seams, moderately consolidated, closely to intensely fractured, low to moderately hard, weak to friable, seepage at 12 inches

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Job No: 994.1 Appr: DH Date 5/19/82		

6.	0- 7	Topsoil; dark brown clayey sand (SC), loose, wet to saturated, seepage at 7 inches
	7- 36	Weathered rock; orange-brown sandstone with gray clay seams, moderately consolidated, closely fractured, low hardness, weak to friable, moderately to deeply weathered
7.	0- 18	Topsoil; dark brown sandy silt (ML), loose, moist
	18- 28	Colluvium; mottled rusty brown gravelly clay (CL), moderately stiff, wet to saturated, seepage at 28 inches
	28- 60	Colluvium; mottled gray-rust brown sandy clay (CL), stiff, saturated to wet
	60- 82	Residual soil; yellow-brown sandy clay (CL), very stiff, wet
	82- 90	Weathered rock; mottled gray-orange-brown siltstone grades into orange brown sandstone, poor to moderately consolidated, intensely fractured, low hardness, friable, deeply weathered

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TEST PIT LOG
Golden Gate Baptist Seminary
Mill Valley, California

PLATE 12

8.	0- 7	Topsoil; dark brown silt (ML), loose, moist
	7- 23	(?)Fill; brown sand (SP) and sandstone fragments, moderately dense, wet
	23- 29	Colluvium; brown clay (CL), stiff wet
	29- 31	Residual soil; gray clay (CL), moderately stiff, wet
	31- 48	Rock; gray shale, moderately to well consolidated, very thin-bedded, bedding N70W, 46NE, intensely to closely fractured, moderaetly hard, weak to moderately strong, moderately weathered
9.	0- 18	Topsoil; dark brown silt (ML), loose, moist to wet
	18- 34	Residual soil; red-brown sandy silt (ML), moderately stiff, wet
	34- 52	Weathered rock; brown sandstone, moderately consolidated, thin-bedded, bedding N64W, 56NE, closely to intensely fractured, moderately hard, weak to moderately strong, moderately weathered, seepage at 48 inches

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TEST PIT LOG
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PLATE
13

10.	0- 24	Topsoil; dark brown silt (ML), with brown sandstone fragments, grades into lower material, loose, moist
	24- 55	Colluvium; brown clayey sand (SC), moderately dense, wet
	55- 68	Colluvium; brown clay (CL) with minor amount of sand, very stiff, saturated, seepage at 56 inches
	68-150	Colluvium/Residual soil; mottled orange-brown silty clay (CL), with rock fragments, stiff, saturated to wet--appears to resemble highly weathered rock at bottom of pit
11.	0- 20	Topsoil; dark brown silt (ML), loose, moist
	20- 52	Colluvium; dark brown silt (ML) with sandstone rock fragments, moderately stiff, wet
	52- 96	Colluvium; mottled orange-brown sandy clay (CL), stiff, wet to saturated, seepage at 60 inches, grades into lower material
	96-108	Residual soil/Weathered rock; mottled orange-gray-brown siltstone, poorly consolidated, intensely fractured, low hardness, friable, deeply weathered
	108-122	Weathered rock; mottled orange-gray-brown siltstone and brown sandstone, properties as above
12.		Not dug

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PLATE
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13.	0- 22	Topsoil; dark brown clayey silt (ML), loose, wet
	22- 28	Residual soil; mottled gray-brown sandy clay (CL) with shale fragments, moderately stiff, wet
	28- 40	Residual soil; mottled yellow-gray clayey sandy silt (ML), with shale fragments, stiff, moist
	40- 76	Weathered rock/rock; gray sheared shale with some inclusions of graywacke, crushed to intensely fractured, low hardness, friable, deeply weathered
	76-104	Rock; dark gray graywacke sandstone, well consolidated, closely fractured, hard, strong, moderately weathered
14.	0- 20	Topsoil; dark brown silt (ML), loose to moderately stiff, moist
	21- 30	Earthflow; red-brown clayey sand (SC) to gravelly sand (SP), loose wet, grades into lower material
	30- 46	Earthflow; light red-brown clayey gravel (GC) with brown sandstone fragments, loose, saturated, seepage at 40 inches
	46- 47	Residual soil; yellow-gray clay (CL) with shale fragments, moderately stiff, saturated, grades into lower material
	47-120	Weathered rock/rock; gray sheared shale and graywacke with light gray clay seams, intensely fractured, low to moderately hard, friable to weak, deeply weathered

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PLATE 15

15.	0- 16	Topsoil; dark brown clayey sand (SC), loose, wet
	16- 27	Earthflow; red-brown clayey sand (SC) to sand (SP) with small sandstone fragments, loose, saturated, seepage at 17 inches
	27- 28	Colluvium; mottled red-brown-yellow sandy clay (CL), moderately stiff, wet to saturated
	28- 37	Residual soil; mottled yellow-gray clay (CL) with fragments of chert and graywacke, very stiff, wet to moist
	37- 46	Residual soil; gray clay with shale and graywacke fragments, very stiff, moist
	46- 68	Rock; gray sheared shale and graywacke, low hardness, friable, deeply weathered, moist to dry, intensely sheared areas are predominantly clay
	68- 72	Rock; gray graywacke, well consolidated, closely to moderately fractured, hard, strong, moderately weathered, dry

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PLATE
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16.	0- 13	Topsoil; dark brown sandy clay (CL), loose to moderately stiff, wet to saturated, seepage at 13 inches
	13- 47	Residual soil; gray clay (CL) with occasional rock fragments of graywacke and chert, very stiff, expansive
	47- 96	Weathered rock; momttled green-yellow-gray clay (CL) intermixed with sheared shale and graywacke, poorly consolidated, intensely fractured to crushed, low hardness, friable to plastic, deeply weathered; clay is stiff, wet to moist
17.	0- 7	Topsoil; dark brown sandy silt, loose, moist
	7- 19	Weathered rock; yellow-brown sandstone, moderately consolidated, intensely fractured, low hardness, friable to weak, grades into lower material
	19- 22	Weathered rock; yellow-brown clay (CL), moderately stiff, saturated, seepage at 19 inches
	22- 24	Weathered rock; gray clay (CL), moderaetly stiff, wet
	24- 72	Rock; gray shale and yellow-brown sandstone with gray clay seams, moderately consolidated, intensely fractured, moderately hard, friable to weak, deep to moderately weathered

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PLATE 17

18.	0- 20	Topsoil; dark brown silt (ML), loose, wet
	20- 39	Colluvium; red-brown sandy clay (CL), stiff, wet to saturated, seepage at 26 inches
	39- 55	Colluvium; mottled yellow-brown sandy clay (CL), stiff, saturated to wet
	55- 78	Weathered rock/rock; yellow-brown sandstone, moderately fractured, low to moderately hard, friable to weak, moderately weathered
19.	0- 6	Topsoil; dark brown silty sand (SM), loose, wet to saturated, seepage at 4 inches
	6- 52	Rock; yellow-brown sandstone, moderately consolidated, closely fractured, weak to friable, moderately hard, moderately weathered

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PLATE
18

20.	0- 16	Topsoil; dark brown sandy silt (ML), loose, wet to saturated, seepage at 7 inches
	16- 30	Earthflow; gray-brown clayey sand (SC), moderately dense, saturated
	30- 60	Earthflow; yellow-brown slightly sandy clay (CL), stiff, saturated
	60- 76	Colluvium; mottled yellow-brown-gray clay (CL), very stiff, saturated
	76- 89	Weathered Rock; mottled yellow-brown-gray silstone anad sandstone with clay fracture filling, poorly consolidated, intensely fractured, low hardness, friable, deeply weathered
	89- 91	Rock; yellow-brown sandstone, moderate consolidation, intensely fractured, low to moderately hard, friable to weak, moderately weathered

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PLATE
19

21.	0- 30	Topsoil; dark brown silt (ML), loose, moist
	30- 44	Colluvium/residual soil; orange-brown sandy silt (ML) with rock fragments, moderately stiff, wet
	42- 62	Residualsoil/weathered rock; orange-brown-gray siltstone, poorly consolidated, intensely fractured, low hardness, friable, deeply weathered, moist
	62- 72	Rock; gray-brown shale and orange-brown sandstone, moderately consolidated, intensely fractured, moderately hard, weak, moist
22.	0- 12	Topsoil; dark brown silt (ML), loose, moist to wet
	12-108	Colluvium; mottled yellow-brown-red gravelly silt (ML), moderately stiff, saturated and prone to caving, seepage at 48 inches
	108-120	Rock; yellow-brown sandstone, moderately consolidated, moderately hard, weak, moderately weathered

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TEST PIT LOG
Golden Gate Baptist Seminary
Mill Valley, California

PLATE
20

LOG OF BORING 16

Equipment 6" Solid Auger

Elevation 125± Date 8/8/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		YELLOW-BROWN SANDY SILT (ML) stiff, moist (topsoil)
			26	9	103			
				9	107			MOTTLED FINE BROWN SANDY SILT (ML) (Colluvial)
						3		YELLOW-BROWN SILTY CLAY (CL) dense, totally decomposed sandstone (residual)
			25	21	105			
						6		GRAY-BROWN SANDSTONE AND SHALE partially decomposed into residual soil with clayey zones
			28					
			15/3"	9	125			
						9		GRAY-BROWN SANDSTONE AND SHALE interbedded. Soft bedrock to 10'
	1.0	1200						
						12		
						15		
						18		Free water not encountered

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LOG OF BORING 16

Baptist Seminary
Mill Valley, California

PLATE 20

Village I

LOG OF BORING 15 (PKG)

Equipment 6" Solid Auger

Elevation 148± Date 8/8/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		BROWN SANDY SILT (ML) Topsoil
			25	7	108			YELLOW-BROWN FINE SANDY SILT (ML) some medium to fine gravel, some clay (Colluvial)
						3		
			21	12	106			increase of moisture between 5' and 6' (contact point)
						6		YELLOW-BROWN CLAYEY SILT AND SILTY CLAY (CM-CL) dense, parent material (residual) (Decomposed sandstone)
			27	22	102			
						9		
			37	16	112			RED-BROWN SANDSTONE weathered
						12		
						15		

Free water not encountered

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LOG OF BORING 15

Baptist Seminary, Mill Valley, California

PLATE 19

LOG OF BORING 14

Equipment 6" Solid Auger

Elevation 120± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		BROWN SANDY SILT (ML) Topsoil
			40	11	111			MOTTLED BROWN FINE SANDY SILT (ML) some fine gravel
						3		
			22	8	126			BLACK-GRAY SANDSTONE highly weathered, partially decomposed, closely jointed. Interbedded with some shale beds.
			–			6		
			30/3"	3				changed from a clay bit to a rock bit at 6'. Less weathered below 6'
	0.7	800				9		
	1.0	1000						
	1.0	1000				12		
	1.5	1400						
						15		
						18		Free water not encountered

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Job No: 994.1 Appr: BT Date 9/4/79

LOG OF BORING 14

Baptist Seminary
Mill Valley, California

PLATE 18

LOG OF BORING 13

Equipment 6" Solid Auger

Elevation 121± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
			25	7	91	0		DARK BROWN SANDY SILT (ML) topsoil and fill
				8	102			
				7	116			BROWN SILTY GRAVEL AND SAND (GM-ML) dense (Fill)
			30	6	120	3		
			27	18	111	6		MOTTLED RED-BROWN CLAYEY SILT AND SOME FINE SAND (ML) very dense (residual) (decomposed sandstone)
			34	19	100			RED-BROWN SANDSTONE (Bedrock) highly weathered, closely jointed, soft to medium hard
			15/3"	18	111	9		
	0.5	800				12		
	0.5	1000						
						15		
						18		Free water not encountered

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LOG OF BORING 13

Baptist Seminary
Mill Valley, California

PLATE 17

LOG OF BORING 12

Equipment 6" Solid Auger

Elevation 121± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
			30/4"	6	99	0		BROWN SANDY SILT (ML) ~~topsoil and fill~~
	2.5	1200				3		BROWN-GRAY SANDSTONE moderately weathered and jointed to 2'. Less weathered below 2'
						4.5		
						6		Free water not encountered
						9		

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LOG OF BORING 12

Baptist Seminary
Mill Valley, California

PLATE 16

LOG OF BORING 11

Equipment 6" Sllid Auger

Elevation 122± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
			20/3"	5	94	0	1	BROWN SANDY SILT (ML) Topsoil
						3		BROWN-GRAY SANDSTONE (Bedrock) medium hard, weathered, and fractured to 2.5'
						6		Free water not encountered

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LOG OF BORING 11

Baptist Seminary
Mill Valley, California

PLATE 15

DORM HILL

LOG OF BORING 10

Equipment 6" Solid Auger

Elevation 120± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		
			30	6	121			BROWN SANDY SILT (ML) topsoil and fill
			20	8	116	3		BROWN SANDY SILT (ML) some clay, some fine gravel, dense (Fill)
				10	111			BLACK-BROWN SANDY SILT (topsoil of original hill)
			34	7	113	6		ORANGE-BROWN SANDSTONE highly weathered, soft, friable at the surface, closely jointed, medium hard below 9'. Rock bit used from 10' to 12'.
	0.5	800				9		
	0.5	800				12		
						15		
						18		Free water not encountered

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LOG OF BORING 10
Baptist Seminary
Mill Valley, California

PLATE 14

Tennis Cts 5

LOG OF BORING 9

Equipment 6" Solid Auger

Elevation 120± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample
				7	81	0	
			38	6	103	1	

GRAY-BROWN SANDY SILT (ML)
topsoil and fill

BROWN SANDSTONE
interbedded with veins of serpentine, medium hard to hard, fine-grained, angular grains of quartz and feldspar.

3

6

9

12

Free water not encountered

15

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LOG OF BORING 9

Baptist Seminary
Mill Valley, California

PLATE 13

Tennisets.

LOG OF BORING 8 N

Equipment 6" Solid Auger

Elevation 120± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		BROWN SANDY SILT (ML) topsoil
		25/4"		5	99			MOTTLED SERPENTINE (Brown-green-gray) interbedded with sandstone beds. Soft to 3'. Medium hard after 3'. some very hard zones.
		40/5"		7	104	3		
						6		
						9		
						12		Free water not encountered

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LOG OF BORING 8

Baptist Seminary
Mill Valley, California

PLATE 12

LOG OF BORING 7

Equipment 6" Solid Auger

Elevation 130± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		BROWN SANDY SILT (ML) Topsoil
			31	11	106			MOTTLED BROWN-ORANGE SANDY SILT (ML) very dense, residual (totally decomposed sandstone)
			50	12	111			
				13	109	3		
	0.3	500						BROWN SANDSTONE (Bedrock) highly weathered, closely jointed, closely fractured, low hardness to 10', moderately hard after 10'
	0.3	500				6		
	0.3	600						
	0.3	600				9		
	0.5	1200						
	0.5	1200				12		
						15		Free water not encountered

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LOG OF BORING 7

Baptist Seminary
Mill Valley, California

PLATE 11

LOG OF BORING 6

Equipment 6" Solid Auger

Elevation 131± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
			16	5	87	0		DARK BROWN SANDY SILT (ML) topsoil, moist, stiff
			20/3"	6	137			BROWN SANDSTONE (Bedrock) highly weathered, closely jointed, soft to medium hard
	0.5	1200				3		
	0.5	1200				6		
	1.0	1200						moderately hard from 8' to 9'
	1.0	1200				9		
						12		Free water not encountered

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LOG OF BORING 6

Baptist Seminary
Mill Valley, California

PLATE 10

LOG OF BORING 5

Equipment 6" Solid Auger

Elevation 147± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample
			38	16	99	0	
				9	131		
	0.4	700				3	
	0.5	800				6	
						9	
						12	
						15	

DARK BROWN SANDY SILT (ML)
topsoil, wet, stiff

BROWN SANDSTONE (Bedrock)
deeply weathered, partially decomposed, highly jointed, very low hardness, friable to 3', soft to medium hard below 3'

Free water not encountered

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LOG OF BORING 5

Baptist Seminary
Mill Valley, California

PLATE 9

LOG OF BORING 4

Equipment 6" Solid Auger

Elevation 148± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
			36	7	130	0		BROWN SANDY SILT (ML) Topsoil
						3		BROWN SANDSTONE (Bedrock) highly weathered, closely jointed, fine-grained, top 2' partially decomposed, soft to medium hard
	0.5	1000				6		
						9		
						12		
	0.5	1200				15		
								Free water not encountered

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LOG OF BORING 4

Baptist Seminary
Mill Valley, California

PLATE 8

LOG OF BORING 3

Equipment 6" Solid Auger

Elevation 147± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
			12/2"	8		0		BLACK-BROWN SANDY SILT (ML) topsoil
						3		GRAY-BROWN SANDSTONE (Bedrock) highly weathered, partially decomposed, fine-grained, low hardness
						6		
						9		
						12		Free water not encountered

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LOG OF BORING 3

Baptist Seminary
Mill Valley, California

PLATE 7

LIBRARY

LOG OF BORING 2

Equipment 6" Solid Auger

Elevation 147± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
			24	21	78	0		BLACK-BROWN SANDY SILT (ML) topsoil
			12/2"	10	127			BROWN SANDSTONE highly weathered, completely decomposed, soft
				10	121	3		BROWN SANDSTONE (Bedrock) highly weathered, partially decomposed, fine-grained, soft to medium hard
								used tungsten-carbide bit in the sandstone
	0.5	1000				6		
						9		
						12		
						15		Free water not encountered

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Job No: 994.1 Appr: RT Date 9/4/79

LOG OF BORING 2

Baptist Seminary
Mill Valley, California

PLATE 6

LIBRARY

LOG OF BORING 1 7 6 1 5 3 2

Equipment 6" Solid Auger 4 1

Elevation 148± Date 8/7/79

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	* Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample
						0	
			25/3"	4			
						3	
			40/2"	7			
			30/1"	5			
						6	
						9	
						12	
						15	

BROWN SANDY SILT (ML)
~~topsoil and fill~~

BROWN SANDSTONE (Bedrock)
highly weathered, partially decomposed, closely jointed, fine-grained, soft, friable.

used tungsten-carbide bit after 3'
(FRANCISCAN FORMATION)

Free water not encountered

NOTE:

All rocks encountered in this project belong to the Franciscan Formation, mainly sandstone and shale (Cretaceous). The sandstone is gray and brown, thickly bedded, medium-grained, containing grains of quartz and feldspar. The shale is generally well-bedded siltstone, dark gray, stained brown by iron oxides along joints.

*280 lbs. falling 30 inches.
Adjusted to SPT blows.
O.D. of California Sampler = 0.3 inch.

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Job No: 994.1 Appr: BT Date 9/4/79

LOG OF BORING 1

Baptist Seminary
Mill Valley, California

PLATE 5

MAJOR DIVISIONS					TYPICAL NAMES
COARSE GRAINED SOILS (MORE THAN HALF IS LARGER THAN #200 SIEVE)	GRAVELS (MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE)	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS, GRAVEL - SAND MIXTURES
			GP		POORLY GRADED GRAVELS, GRAVEL - SAND MIXTURES
		GRAVELS WITH OVER 12% FINES	GM		SILTY GRAVELS, POORLY GRADED GRAVEL - SAND - SILT MIXTURES
			GC		CLAYEY GRAVELS, POORLY GRADED GRAVEL - SAND - CLAY MIXTURES
	SANDS (MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE)	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS, GRAVELLY SANDS
			SP		POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 12% FINES	SM		SILTY SANDS, POORLY GRADED SAND - SILT MIXTURES
			SC		CLAYEY SANDS, POORLY GRADED SAND - CLAY MIXTURES
FINE GRAINED SOILS (MORE THAN HALF IS SMALLER THAN #200 SIEVE)	SILTS AND CLAYS (LIQUID LIMIT LESS THAN 50)		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL		ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (LIQUID LIMIT GREATER THAN 50)		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt		PEAT AND OTHER HIGHLY ORGANIC SOILS

UNIFIED SOIL CLASSIFICATION SYSTEM

Shear Strength, psf

Confining Pressure, psf

Consol	— Consolidation	*Tx	320	(2600)	Unconsolidated Undrained Triaxial
LL	— Liquid Limit (In %)	TxCU	330	(2600)	Consolidated Undrained Triaxial
PL	— Plastic Limit (In %)	DS	2750	(2000)	Consolidated Drained Direct Shear
G_s	— Specific Gravity	FVS	470		Field Vane Shear
SA	— Sieve Analysis	*UC	2000		Unconfined Compression
■	"Undisturbed" Sample	LVS	700		Laboratory Vane Shear
⊠	Bulk Sample				

Notes: (1) All strength tests on 2.8" or 2.4" diameter samples unless otherwise indicated.

(2) * Indicates 1.4" diameter sample.

KEY TO TEST DATA

DONALD HERZOG & ASSOCIATES
Consulting Soil & Foundation Engineers

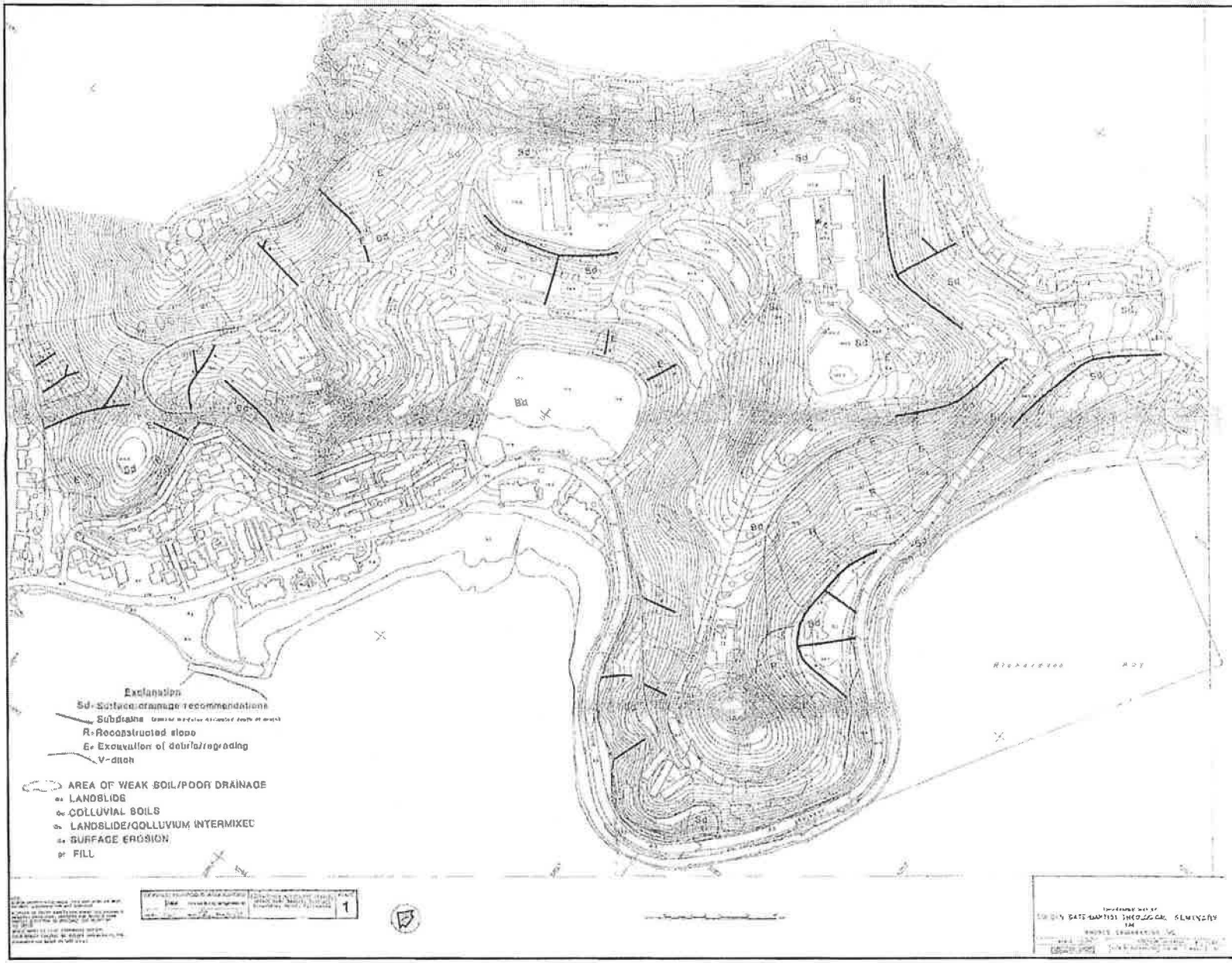
Job No. 994.1 Appr: BZ Date 9/4/79

SOIL CLASSIFICATION CHART AND KEY TO TEST DATA
Baptist Seminary

PLATE 24

APPENDIX B

HERZOG EXPLORATORY BORING AND TEST PIT LOGS



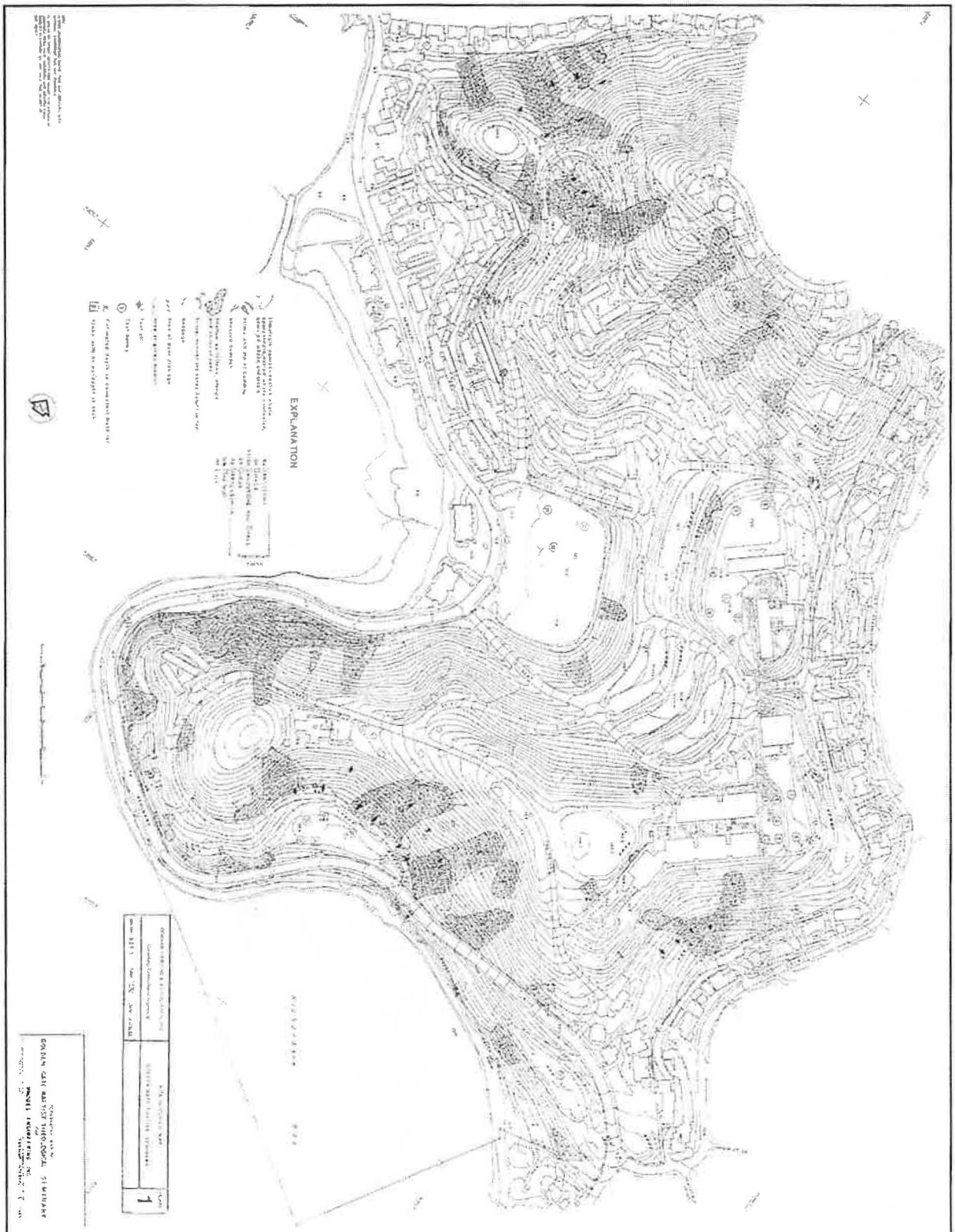
Purcell Rhoades & Associates
Consultants in the Applied Earth Sciences

HERZOG MITIGATION MEASURES MAP
GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
MILL VALLEY, CALIFORNIA

CLIENT

HARTMARIN

A-2



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Consultants in the Applied Earth Sciences

HERZOG SITE GEOLOGY MAP
GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
MILL VALLEY, CALIFORNIA

FIGURE NO
A-1

REV NO

DATE
JOB NO 7585.01
DWG NO H7585301APP A-1
DRAWN
CHKD DJR
APP'D

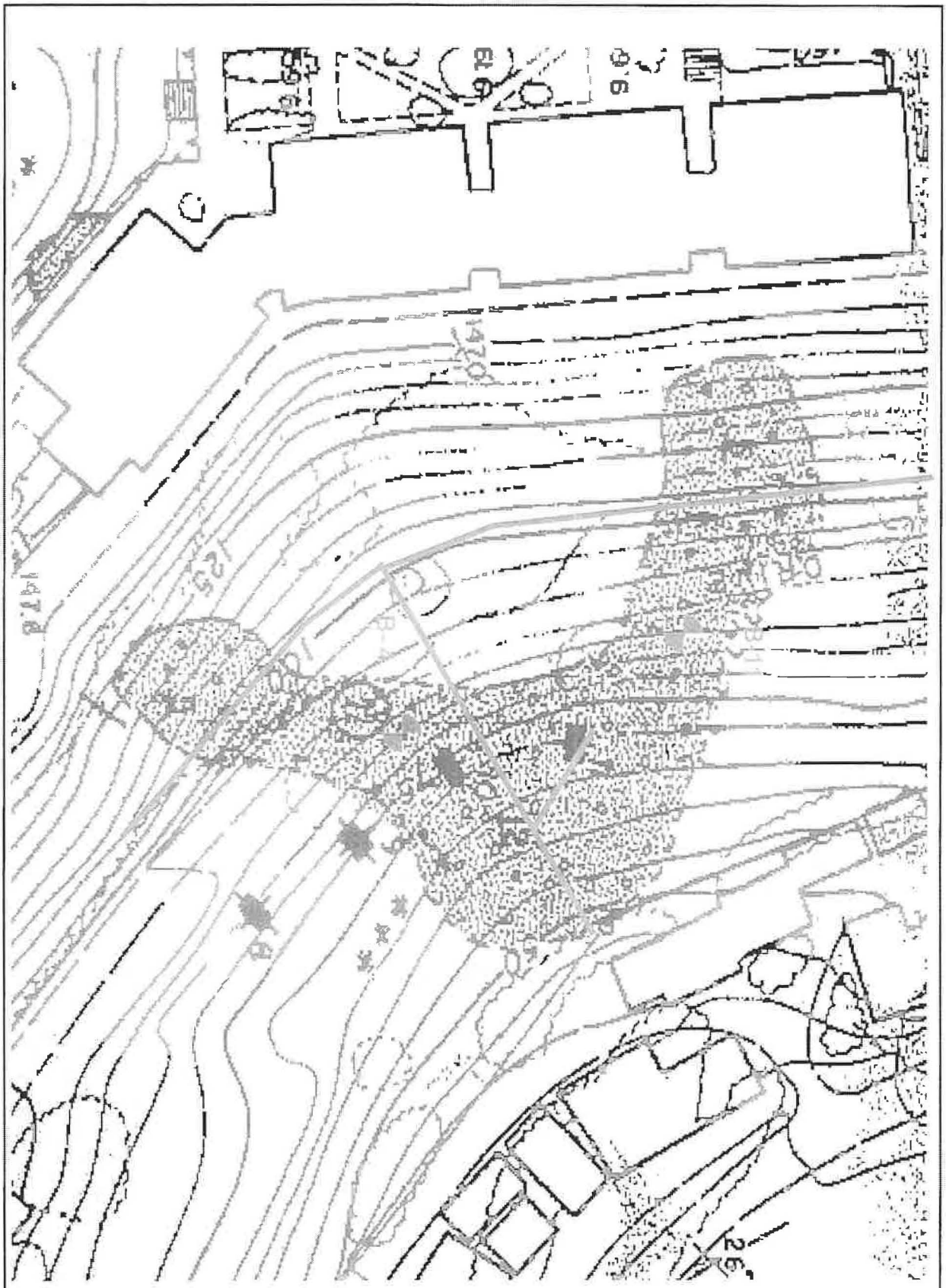
CLIENT HARTMARIN

page 33

APPENDIX A

FIGURE A-1 HERZOG SITE GEOLOGY MAP

FIGURE A-2 HERZOG RECOMMENDED MITIGATION MEASURES MAP



Purcell Rhoades & Associates
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FIGURE NO.

SEMINARY VISTA EAST SITE MAP
GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
MILL VALLEY CALIFORNIA

29

CLIENT HARTMARIN

REV. NO.

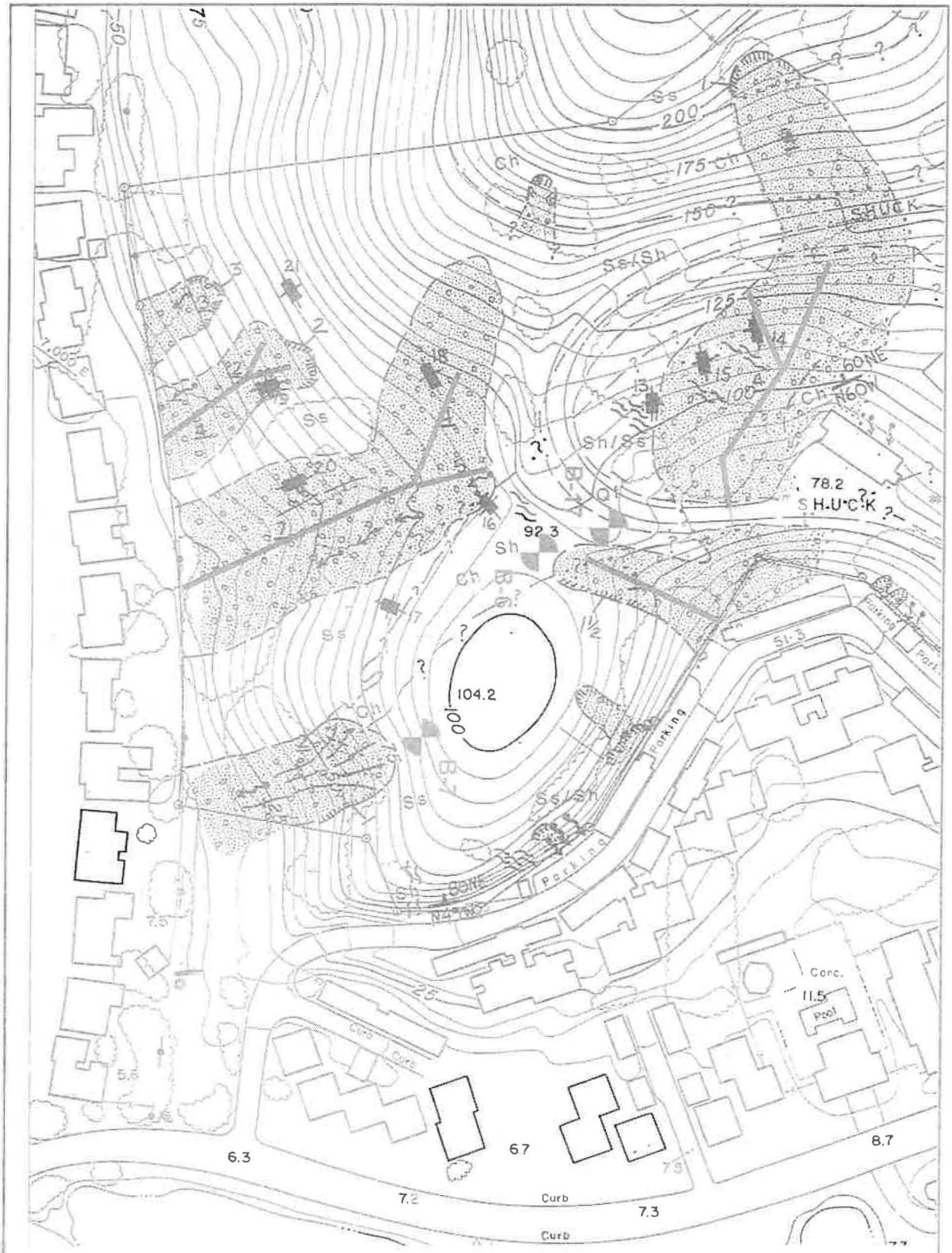

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FIGURE NO

SEMINARY KNOLLS SITE MAP
GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
MILL VALLEY, CALIFORNIA

24

CLIENT HARTMARIN

REV NO

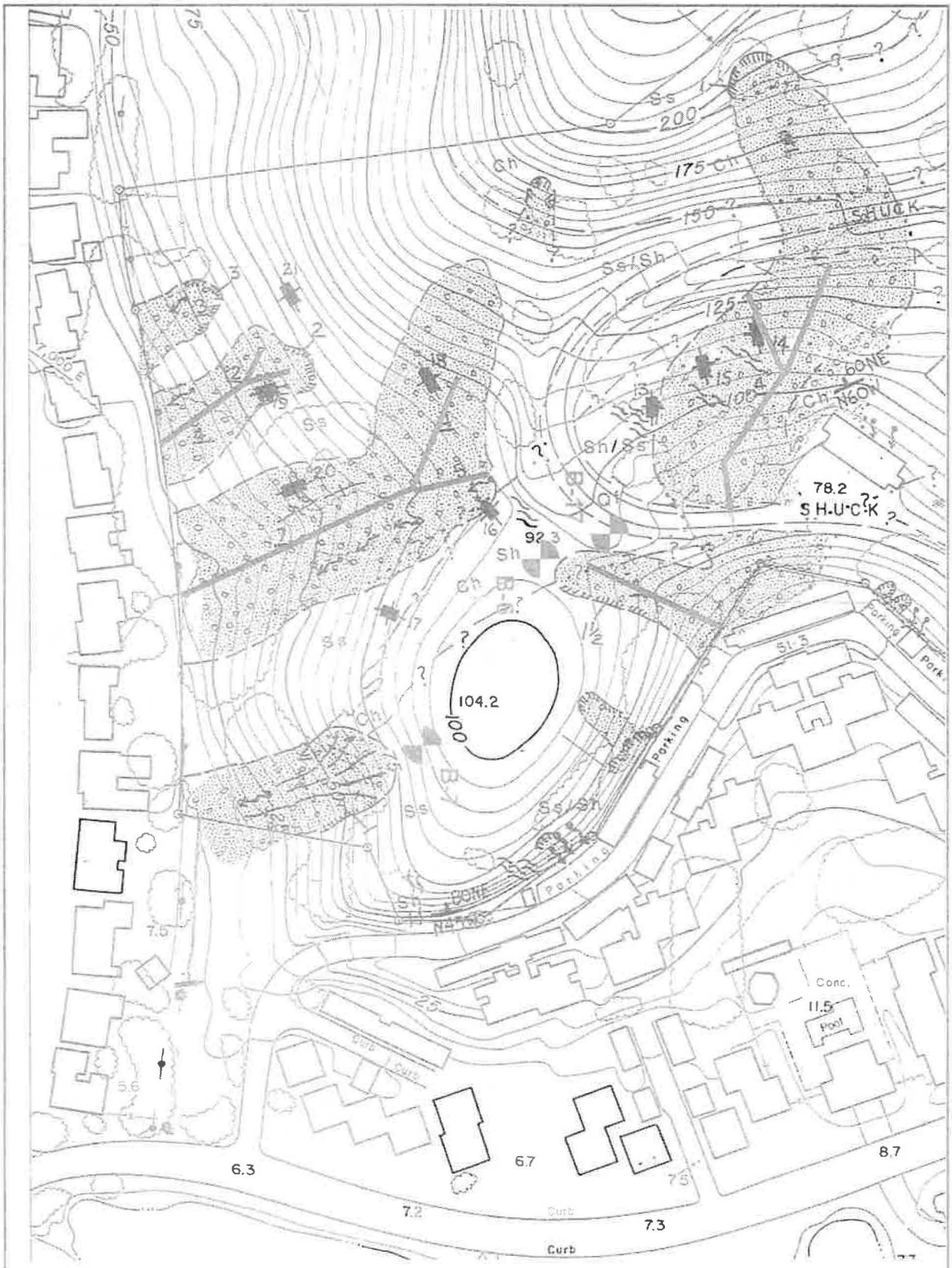

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FIGURE NO

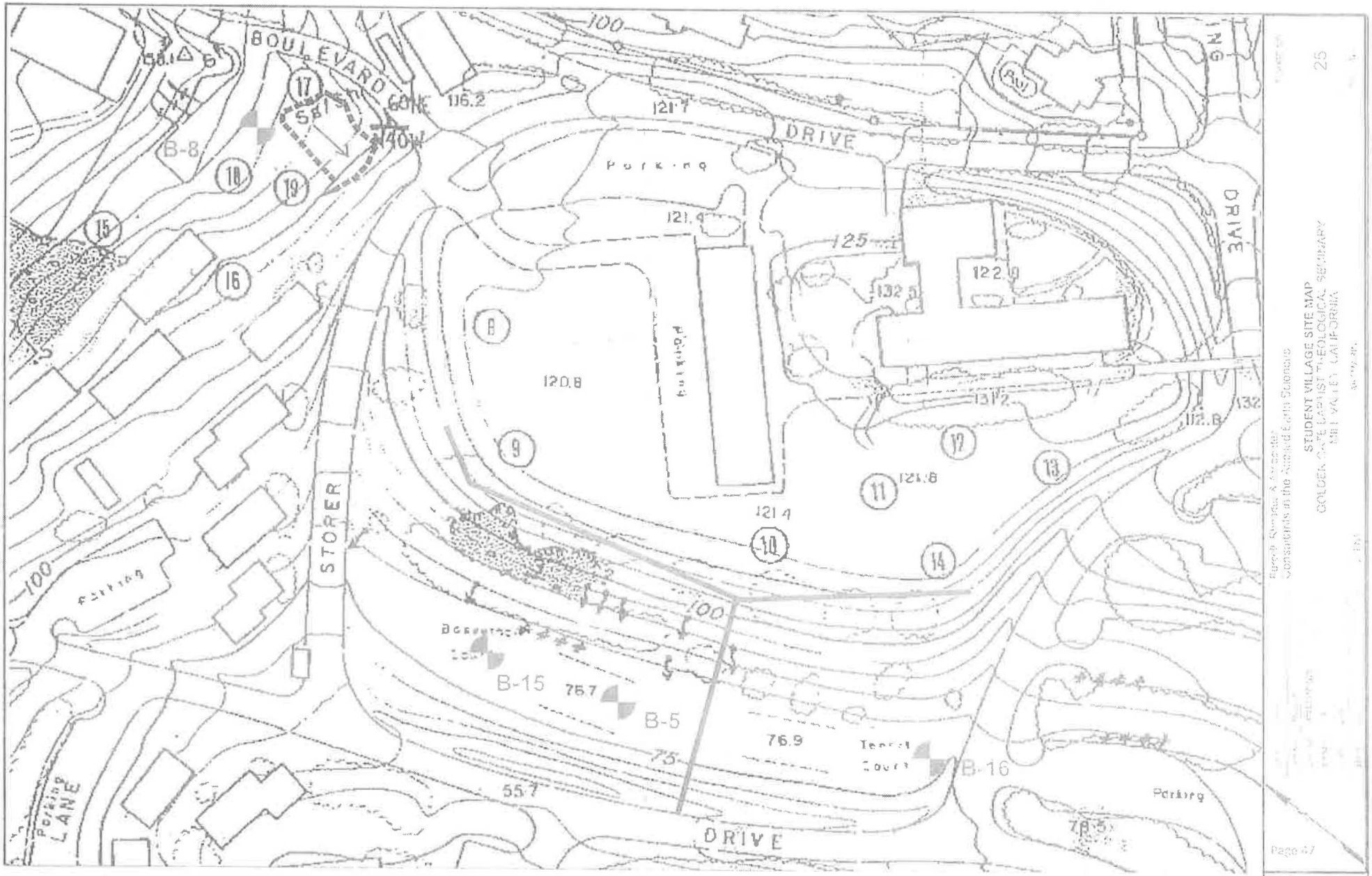
SEMINARY KNOLLS SITE MAP
GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
MILL VALLEY, CALIFORNIA

24

CLIENT HARTMARIN

REV NO

Page 46


BOULEVARD
DRIVE
STORER
LANE
Parking
B-8
B-15
B-5
B-16
Tennis Courts
Basketball Courts
Building
100
125
120.8
121.4
121.8
122.9
132.5
132.2
112.8
116.2
121.7
121.9
76.7
76.9
55.7
78.5
58.1
58.1
40
8
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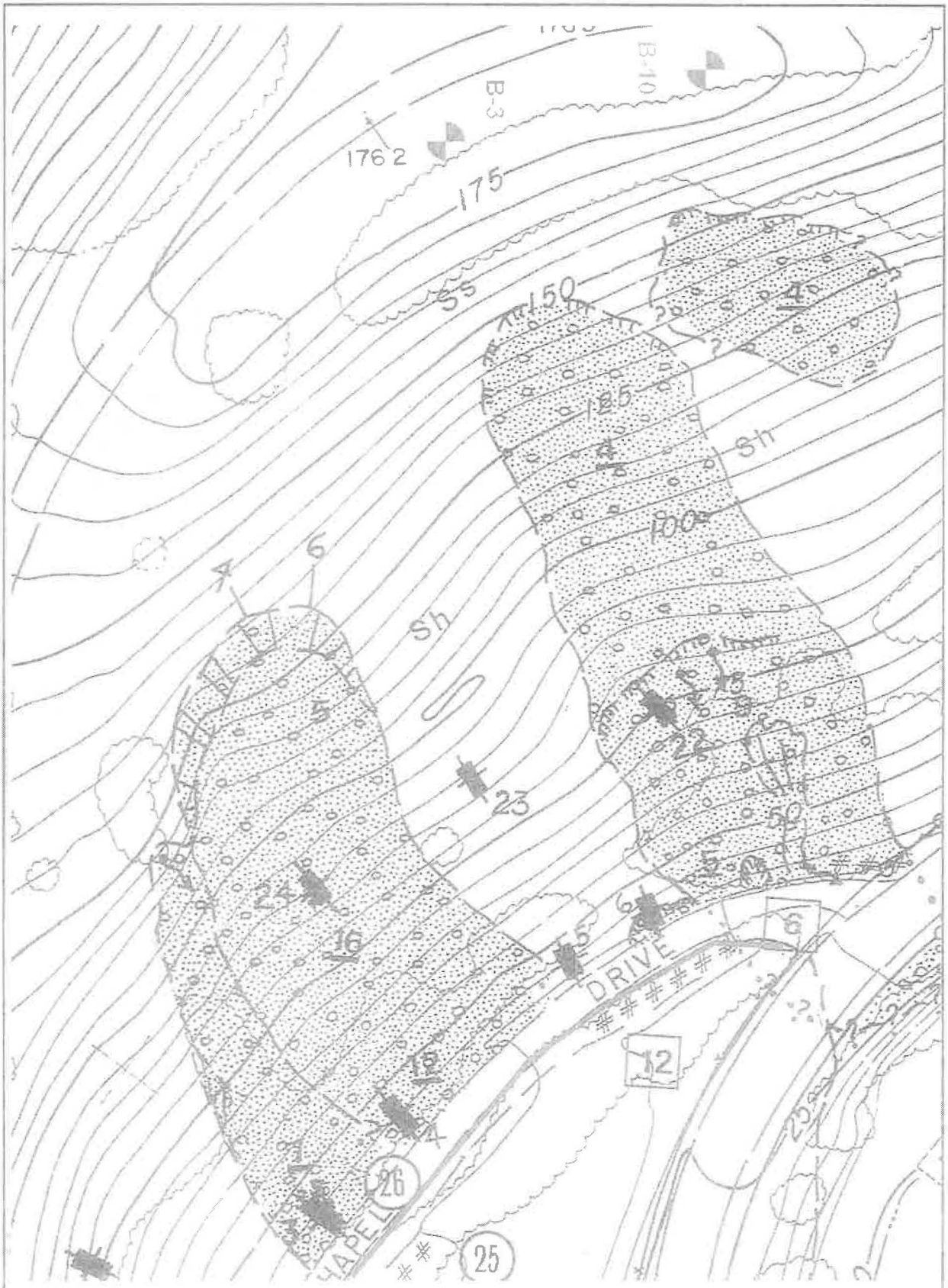
19
25
Page 47



Page 48

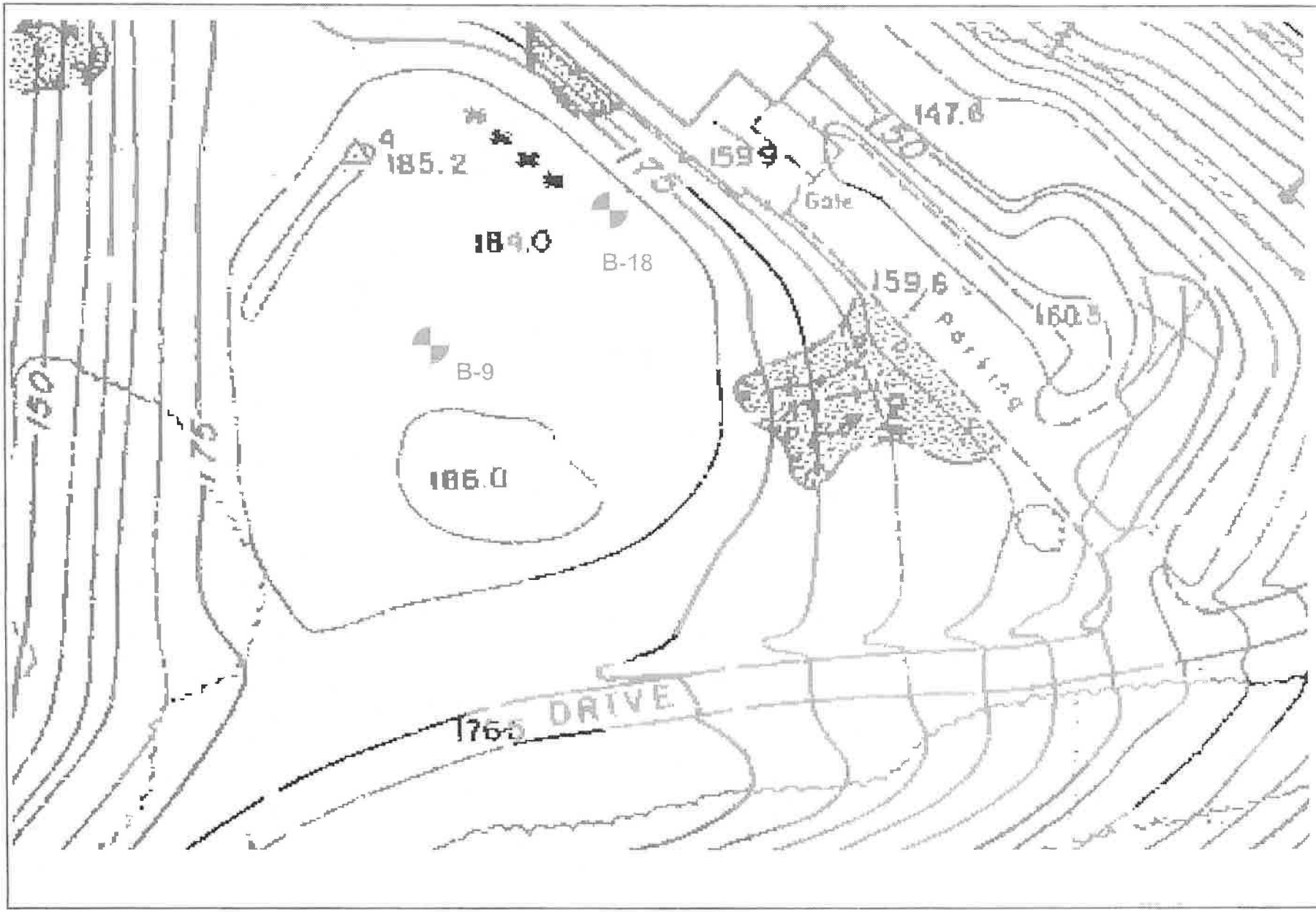
Pangaea Engineering & Associates
Consultants in the Applied Earth Sciences

SEMINARY VISTA WEST SITE MAP
GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
MILL VALLEY, CALIFORNIA

27

CLIENT

JOB NO.



Rudolph Pressman Associates
Consultants in the Applied Earth Sciences

CHAPEL HILL SITE MAP
GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
MILL VALLEY, CALIFORNIA

26

Parcel, Rhoades & Associates
Consultants in the Applied Earth Sciences

FIGURE NO.

SEMINARY POINT SITE MAP
GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
MILL VALLEY, CALIFORNIA

28

CLIENT HARTMARIN

REV. NO.

EXPLANATION

Lithologic contact; dashed where approximate, dotted where concealed queried where uncertain

Strike and dip of bedding

Sheared bedrock

Shallow earthflows, slumps and colluvial soils

Scarp, number indicates height in feet

Seepage

Area of poor drainage

Area of gulley erosion

Test pit (SEE APPENDIX B FOR HERZOG LOGS)

Test boring (SEE APPENDIX B FOR HERZOG LOGS)

Estimated depth to competent material

Probe drill holes–depth to rock

Franciscan Rocks

- Ss SANDSTONE
- Sh SHALE
- Ss/Sh SANDSTONE AND SHALE
- Ch CHERT
- Sp SERPENTINITE
- Qm BAY MUD
- Qf FILL

Subdrains from Herzog Mitigation Map (Appendix A-2)

PRA BORING & PROBE LOCATIONS (SEE FIGURES 6 THROUGH 23 FOR LOGS)

NOTES

DATE	MAY 2010
JOB NO.	7463-01
DWG NO.	H746301FIG24-A
DRAWN	IDA
CHK'D	DJR
APP'D	DJR

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KEY TO SITE MAPS
GOLDEN GATE BAPTIST SEMINARY
MILL VALEY, CALIFORNIA

FIGURE NO. 24-A

CLIENT HARTMARIN

REV. NO.

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: B-24 Truck Mounted Auger DRILLER: RAM Geotechnical LOCATION: See Site Geologic Map.	Hammer Weight: 140 lb Drop: 30 in	BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. **B-18**

FIELD				DESCRIPTION			LABORATORY							
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SILTY SAND WITH GRAVEL, orange, damp		SM								
2														
3		18-1	25	SILTY CLAY WITH SAND, mottled orange/brown, moist	Very Stiff	CL-ML	112	16	6260	24	6			
4				Hard drilling at 4'										
5														
6				SANDY CLAY, orange, moist		CL-ML								
7														
8		18-2	67	SANDSTONE, weathered, orange, moist										
9				**BORING TERMINATED AT 8 FEET.** **NO GROUNDWATER ENCOUNTERED.**										
10														
11														
12														
13														
14														
15														
16														
17														
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EXPLORATORY BORING LOG B-18
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
23

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: B-24 Truck Mounted Auger DRILLER: RAM Geotechnical Hammer Weight: 140 lb LOCATION: Unpaved Road, See Site Geologic Map. Drop: 30 in		BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. **B-17**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SILTY SAND WITH GRAVEL, orange, damp		SM								
2				SANDY SILT, siltstone particles, orange/brown, damp		ML								
3		17-1	42	SANDY SILT, siltstone and claystone particles, mottled orange brown, moist	Hard	ML	119	12	3290					
7				Top of sample: SILTY CLAY WITH SAND, small claystone particles, dark brown, moist to very moisy										
8		17-2	26	Bottom of sample: SILTY CLAY, siltstone particles, blue/gray, very moist	Very Stiff	CL		11		31	11			
11				Hard drilling at 11'										
12		17-3	42/2"	SILTSTONE, blue to dark red, moist										
13				**BORING TERMINATED AT 12'2".** **NO GROUNDWATER ENCOUNTERED.**										

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EXPLORATORY BORING LOG B-17
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
22

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: B-24 Truck Mounted Auger DRILLER: RAM Geotechnical LOCATION: See Site Geologic Map.	Hammer Weight: 140 lb Drop: 30 in	BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. **B-16**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1														
2		15-1	67	SANDSTONE, orange, damp										
3				**BORING TERMINATED AT 2.5 FEET.** **NO GROUNDWATER ENCOUNTERED.**										
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
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29														
30														

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EXPLORATORY BORING LOG B-16
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
21

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: B-24 Truck Mounted Rig DRILLER: RAM Geotechnical LOCATION: See Site Geologic Map	Hammer Weight: 140 lb Drop: 30 in	BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. **B-15**

FIELD				DESCRIPTION			LABORATORY								
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SANDY CLAY, medium to dark brown, moist		CL								
2														
3		15-1	37	SANDY CLAY WITH SANDSTONE, mottled orange/brown, moist	Hard	CL	111	16	5055					
4														
5														
6				Refusal drilling at 6.5 feet, SPT sample barrel no penetration, moved 15 feet north to continue drilling. Cobble Float.										
7														
8		15-2	48	SILTSTONE, float, gray, damp										
9														
10														
11														
12				Moisture content increasing										
13		15-2	48	SILTY CLAY, siltstone particles, medium brown, moist	Stiff	CL								
14														
15														
16				SANDY CLAY, orange/brown, very moist to saturated										
17				▼ Groundwater measured at 17 feet during drilling.										
18		15-2	48	SANDY CLAY, with sandstone, weathered bedrock.										
19				**BORING TERMINATED AT 18.5 FEET.** **GROUNDWATER ENCOUNTERED AT 17 FEET.**										
20														
21														
22														
23														
24														
25														
26														
27														
28														
29														
30														

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EXPLORATORY BORING LOG B-15
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
20

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: B-24 Truck Mounted Auger DRILLER: RAM Geotechnical Hammer Weight: 140 lb LOCATION: Unpaved Road, See Site Geologic Map. Drop: 30 in		BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. B-14

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SILTY SAND WITH GRAVEL, orange, damp		SM								
2														
3		15-1	67	SANDSTONE/SILTSTONE, clayey, mottled orange, damp										
4				**BORING TERMINATED AT 3 FEET.** **NO GROUNDWATER ENCOUNTERED.**										
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
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EXPLORATORY BORING LOG B-14
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
19

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: B-24 Truck Mounted Rig DRILLER: RAM Geotechnical LOCATION: In gravel roadway, see Plan	Hammer Weight: 140 lb Drop: 30 in	BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. **B-13**

FIELD				DESCRIPTION			LABORATORY								
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SANDY GRAVEL, medium brown, moist		GM								
				SILTY SAND WITH GRAVEL, orange/brown, moist		SM								
2														
3		13-1	16	SILTY CLAY, some sandstone, medium brown with rust, very moist	Stiff to Very Stiff	CL	107	19	2930					
4				SANDY CLAY WITH SILTSTONE, orange, moist to very moist		CL								
5														
6				Harder drilling at 6 feet.										
7														
8		13-2	30/ 11"	SILTSTONE/CLAYSTONE, mottled orange, moist										
9				**BORING TERMINATED AT 8.5 FEET.** **NO GROUNDWATER ENCOUNTERED.**										
10														
11														
12														
13														
14														
15														
16														
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EXPLORATORY BORING LOG B-13
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
18

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: Continuous Sample DRILLER: RAM Geotechnical LOCATION: See Site Geologic Map.	Hammer Weight: 70 lb Drop: 30 in	BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. B-12

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1		12-1	16	SILTY CLAY, with sandstone and siltstone particles to 1-1/2", medium brown, moist	Stiff to Very Stiff	CL	106	18						
2		12-2	13/8"	SANDY SILT, with sandstone and siltstone, orange/gray, moist Bottom of sample: SANDSTONE, orange, moist		SM								
3				**BORING TERMINATED AT 2'2".** **NO GROUNDWATER ENCOUNTERED.**										
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
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24														
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26														
27														
28														
29														
30														

Purcell, Rhoades & Associates
Consultants in the Applied Earth Sciences

EXPLORATORY BORING LOG B-12
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
17

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: B-24 Truck Mounted Auger DRILLER: RAM Geotechnical LOCATION: See Site Geologic Map.	Hammer Weight: 140 lb Drop: 30 in	BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. **B-11**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SILTY SAND, with sandstone particles, orange brown, moist		SM								
2														
3				SANDY CLAY WITH GRAVEL (crushed aggregate base), orange										
4		11-1	18	brown, moist	Very Stiff	CL								
5														
6				SANDY CLAY, dark gray, very moist	Very Stiff	CL								
7														
8		11-2	11	SANDY CLAY, with siltstone particles, dark gray with some olive and rust, very moist to saturated	Stiff	CL	100	24	420					
9														
10														
11														
12				SANDY SILT WITH CLAY, rust, saturated										
13		11-3	24	▼ Groundwater encountered at 13.5 feet during drilling SILTY CLAY, some sand and small sandstone particles,orange, moist	Very Stiff	CL	92	29	2790					
14														
15														
16														
17				▼ Groundwater measured at 17.5 feet 5minunutes after drilling. Borehole not left open to remeasure.										
18		11-4	49	SANDSTONE, weathered, clayey, mottled orange, moist										
19				**BORING TERMINATED AT 18.5 FEET.** **GROUNDWATER ENCOUNTERED AT 13 FEET DURING DRILLING.**										
20														
21														
22														
23														
24														
25														
26														
27														
28														
29														
30														

Purcell, Rhoades & Associates
Consultants in the Applied Earth Sciences

EXPLORATORY BORING LOG B-11
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
16

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: B-24 Truck Mounted Auger DRILLER: RAM Geotechnical LOCATION: See Site Geologic Map.	Hammer Weight: 140 lb Drop: 30 in	BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. **B-10**

FIELD				DESCRIPTION	LABORATORY										
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SILTSTONE, weathered, orange brown, mosit										
2			10-65/6"	SILTSTONE, hard, gray, dry to damp										
3				**BORING TERMINATED AT 2.5 FEET.** **NO GROUNDWATER ENCOUNTERED.**										
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
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30														

Purcell, Rhoades & Associates
Consultants in the Applied Earth Sciences

EXPLORATORY BORING LOG B-10
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
15

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 5/20/2010	PAGE 1 OF 1
DRILL: B-24 Truck Mounted Auger DRILLER: RAM Geotechnical LOCATION: See Site Geologic Map.	Hammer Weight: 140 lb Drop: 30 in	BORING ELEV.: see plan BORING DIAM.: 4 INCHES	BORING NO. **B-9**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft. Converted to SPT	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1		9-1	50/3"	SANDSTONE/SILTSTONE, light brown, damp										
				BORING TERMINATED AT 1'-3" **NO GROUNDWATER ENCOUNTERED.**										

2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Purcell, Rhoades & Associates
Consultants in the Applied Earth Sciences

EXPLORATORY BORING LOG B-9
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO. 14

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 4/22/2010	PAGE 1 OF 1
DRILL: Hand Auger DRILLER: Purcell, Rhoades & Associates LOCATION: See Site Geologic Map.		BORING ELEV.: 140' msl BORING DIAM.: 3-1/2 INCHES	BORING NO. **B-8**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft.	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SANDY SILT WITH SILTSTONE, medium brown, moist										
				SANDY CLAY, orange brown mottled, very moist										
2				SANDSTONE/SILTSTONE, weathered, orange mottled, moist										
3				**BORING TERMINATED AT 2 FEET** **NO GROUNDWATER ENCOUNTERED.**										
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Purcell, Rhoades & Associates
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EXPLORATORY BORING LOG B-8
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
13

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 4/22/2010	PAGE 1 OF 1
DRILL: Hand Auger DRILLER: Purcell, Rhoades & Associates LOCATION: See Site Geologic Map.		BORING ELEV.: 95' msl BORING DIAM.: 3-1/2 INCHES	BORING NO. B-7

FIELD				DESCRIPTION	LABORATORY										
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft.	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
0				SANDY SILT, medium brown, moist										
1				SILTY CLAY WITH WEATHERED CLAYSTONE, mottled gray, moist SANDSTONE, very dense, yellow brown, moist **BORING TERMINATED AT 0.75 FEET** **NO GROUNDWATER ENCOUNTERED.**										
2														
3														
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EXPLORATORY BORING LOG B-7
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
12

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 4/22/2010	PAGE 1 OF 1
DRILL: Hand Auger DRILLER: Purcell, Rhoades & Associates LOCATION: See Site Geologic Map.		BORING ELEV.: 92' msl BORING DIAM.: 3-1/2 INCHES	BORING NO. **B-6**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft.	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SILTY CLAY AND SANDY CLAY WITH BEDROCK, mottled, moist										
2		6-1												
3		6-2		SILTY CLAY WITH WEATEHRED CLAYSTONE, mottled gray, moist										
4				SILTSTONE, weathered, medium gray, moist										
5				**BORING TERMINATED AT 4 FEET** **NO GROUNDWATER ENCOUNTERED.**										
6														
7				☐ Bulk sample										
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EXPLORATORY BORING LOG B-6
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
11

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 4/22/2010	PAGE 1 OF 1
DRILL: Hand Auger DRILLER: Purcell, Rhoades & Associates LOCATION: See Site Geologic Map.		BORING ELEV.: 77' msl BORING DIAM.: 3-1/2 INCHES	BORING NO. **B-5**

FIELD				DESCRIPTION	LABORATORY										
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft.	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SILTY CLAY, mottled light to medium brown, very moist to saturated											
2				SILTY CLAY WITH SILTSTONE AND SANDSTONE PARTICLES TO 1/2-inch diameter, mottled orange/brown, very moist to saturated loose, caving, water seeping from 1 to 2-1/2 feet											
3				SANDY SILT, medium brown, moist											
4		5-1		SILTY CLAY WITH SILTSTONE AND SANDSTONE PARTICLES TO 1/2-inch diameter, mottled orange/brown, very moist to saturated loose, caving, water seeping from 1 to 2-1/2 feet											
5				**BORING TERMINATED AT 5 FEET** **NO GROUNDWATER ENCOUNTERED.**											
6															
7				▭ Bulk sample											
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EXPLORATORY BORING LOG B-5
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
10

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 4/20/2010	PAGE 1 OF 1
DRILL: Hand Auger DRILLER: Purcell, Rhoades & Associates LOCATION: See Site Geologic Map.		BORING ELEV.: 100' msl BORING DIAM.: 3-1/2 INCHES	BORING NO. **B-4**

FIELD				DESCRIPTION	LABORATORY										
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft.	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1				SANDY CLAY WITH GRAVEL AND SILTSTONE, mottled brown to orange, moist, very hard, sandstone/siltstone/claystone to 3-inch diameter										
2		4-1												
3				SANDY SILT WITH CLAY, medium brown, orange lenses, very moist										
4				Standing water visible on soil, some rust color										
5		4-2		Some bedrock particles to 1/4-inch diameter, mottled brown, rust, blue										
6				**BORING TERMINATED AT 5 FEET** **NO GROUNDWATER ENCOUNTERED.**										
7				☐ Bulk sample										
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Purcell, Rhoades & Associates
Consultants in the Applied Earth Sciences

EXPLORATORY BORING LOG B-4
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
9

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 4/20/2010	PAGE 1 OF 1
DRILL: Hand Auger DRILLER: Purcell, Rhoades & Associates LOCATION: See Site Geologic Map.		BORING ELEV.: 175' msl BORING DIAM.: 3-1/2 INCHES	BORING NO. **B-3**

FIELD				DESCRIPTION	LABORATORY										
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft.	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1		3-1		SANDY CLAY WITH LARGE SILTSTONE, mottled dark brown, moist, refusal to drilling.										
2				**BORING TERMINATED AT 1 FEET** **NO GROUNDWATER ENCOUNTERED.**										
3				☐ Bulk sample										
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Consultants in the Applied Earth Sciences

EXPLORATORY BORING LOG B-3
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
8

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 4/20/2010	PAGE 1 OF 1
DRILL: Hand Auger DRILLER: Purcell, Rhoades & Associates LOCATION: See Site Geologic Map		BORING ELEV.: 70' msl BORING DIAM.: 3-1/2 INCHES	BORING NO. **B-2**

FIELD				DESCRIPTION	LABORATORY									
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft.	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1		2-1		SANDY CLAY WITH SILTSTONE, light brown orange, very moist										
2				some large SILTSTONE to 1", roots, mottled										
3		2-2		SANDY SILT lense, medium brown, moist										
4				SANDY CLAY, orange/gray, mottled, moist, native, transition to very weathered SANDSTONE, orange gray, moist										
5		2-3		**BORING TERMINATED AT 5 FEET** **NO GROUNDWATER ENCOUNTERED.**										
6				☐ Bulk sample										
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Purcell, Rhoades & Associates
Consultants in the Applied Earth Sciences

EXPLORATORY BORING LOG B-2
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
7

EXPLORATORY BORING LOG

CLIENT: Hart Marin PROJECT NO.: 7463-01	LOGGED BY: jlm	DATE DRILLED: 4/20/2010	PAGE 1 OF 1
DRILL: Hand Auger DRILLER: Purcell, Rhoades & Associates LOCATION: See Site Geologic Map		BORING ELEV.: 75' msl BORING DIAM.: 3-1/2 INCHES	BORING NO. **B-1**

FIELD				DESCRIPTION	LABORATORY										
DEPTH (ft.)	SAMPLE	SAMPLE NO.	BLOWS / ft.	MATERIAL DESCRIPTION AND REMARKS	CONSISTENCY	USCS LETTER SYMBOL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	UNCONFINED COMPRESSIVE STRENGHT (PSF)	LIQUID LIMIT	PLASTICITY INDEX	85% OF LIQUID LIMIT	EXPANSION INDEX	200 WASH % SILT/CLAY
1		1-1		SILTY CLAY WITH SILTSTONE PARTICLES to ½", medium to dark brown, moist, transitioning to SILTSTONE, very hard at 1 foot.										
		1-2												
2				**BORING TERMINATED AT 1.5 FEET** **NO GROUNDWATER ENCOUNTERED.**										
3														
4				Bulk sample										
5				2-inch core sample										
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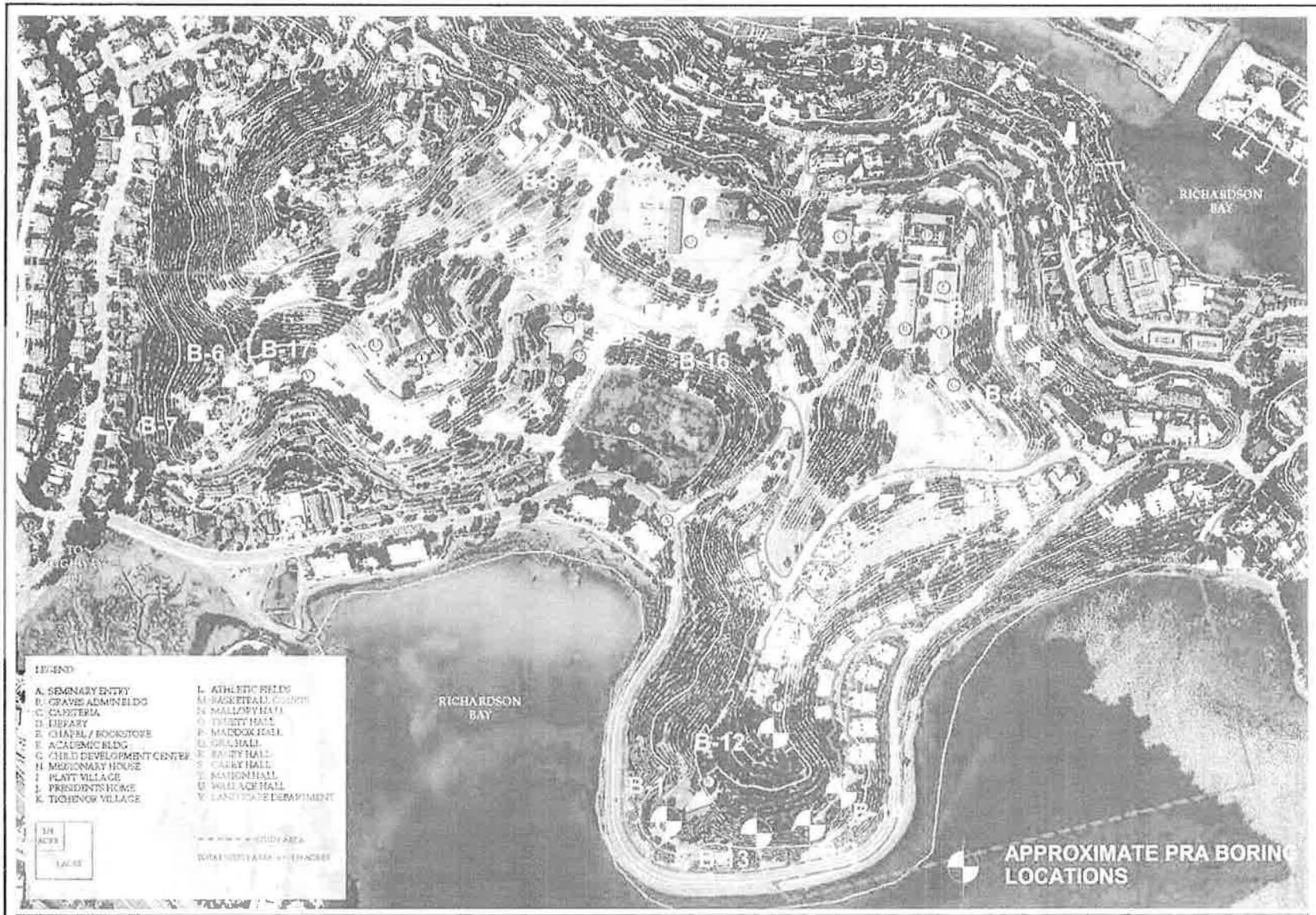
Consultants in the Applied Earth Sciences

EXPLORATORY BORING LOG B-1
Golden Gate Baptist Seminary
Mill Valley, California

Client: Hart Marin

FIGURE NO.
6



HARTMARIN

GOLDEN GATE
BAPTIST THEOLOGICAL SEMINARY

CAMPUS PLAN

Parikh Rhoades & Associates
Consultants in the Applied Earth Sciences

SITE AERIAL PHOTO AND PRA BORING LOCATIONS
GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
MILL VALLEY, CALIFORNIA
HARTMARIN

FIGURE NO. 5

23.	0- 27	Topsoil; dark brown silt (ML), loose moist
	27- 36	Colluvium; mottled orange-brown clayey silt (ML) with sandstone fragments, stiff, wet to saturated, seepage at 34 inches
	36- 52	Rock; orange-brown sandstone, moderately consolidated, closely to intensely fractured, moderately hard, weak, moderately weathered
24.	0- 48	Topsoil/earthflow; dark brown silt (ML) with sandstone fragments, loose to moderately stiff, wet to saturated, seepage at 41 inches
	48- 72	Colluvium; mottled orange-brown clay (CL) with rock fragments, moderaetly stiff to very stiff, saturated
	72-160	Colluvium/residual soil; mottled yellow-brown-gray clay (CL) with rock fragments, stiff to very stiff, saturated to wet--starting to appear as residual soil in bottom.

DONALD HERZOG & ASSOCIATES
Consulting Soil & Foundation Engineers

Job No: 994.1 Appr: DH Date 5/19/82

TEST PIT LOG
Golden Gate Baptist Seminary
Mill Valley, California

PLATE 21

APPENDIX C

CONCEPTUAL RENDERING FOR PROPOSED SITE DEVELOPMENT

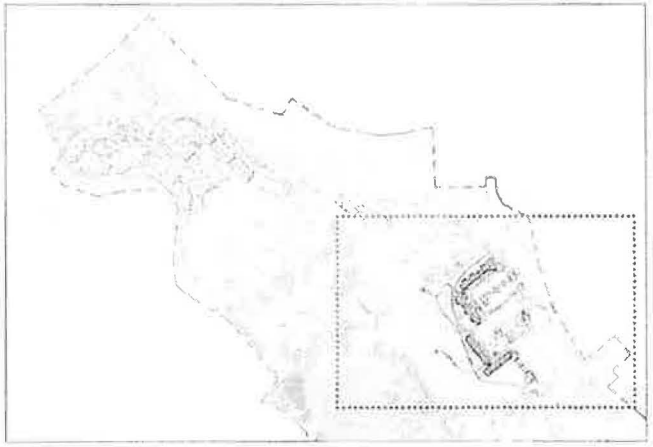
SEMINARY VISTA EAST		
UNIT TYPE	GSF	QT
Bayside Estate CV	3,900	3
TOTAL		3

SEMINARY VISTA WEST		
UNIT TYPE	GSF	QT
Bayside Estate CV	3,900	2
Penthouse Flat CV	1,930	2
Town CV	1,750	4
TOTAL		8

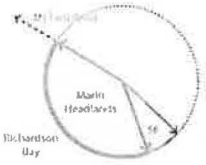
Golden Gate SEMINARY

Seminary Vista

June 8 2010



STUDENT VILLAGE		
UNIT TYPE	GSF	QT
3 Bed Student Apt	960	14
1 Bed Student Apt	555	19
TOTAL		33



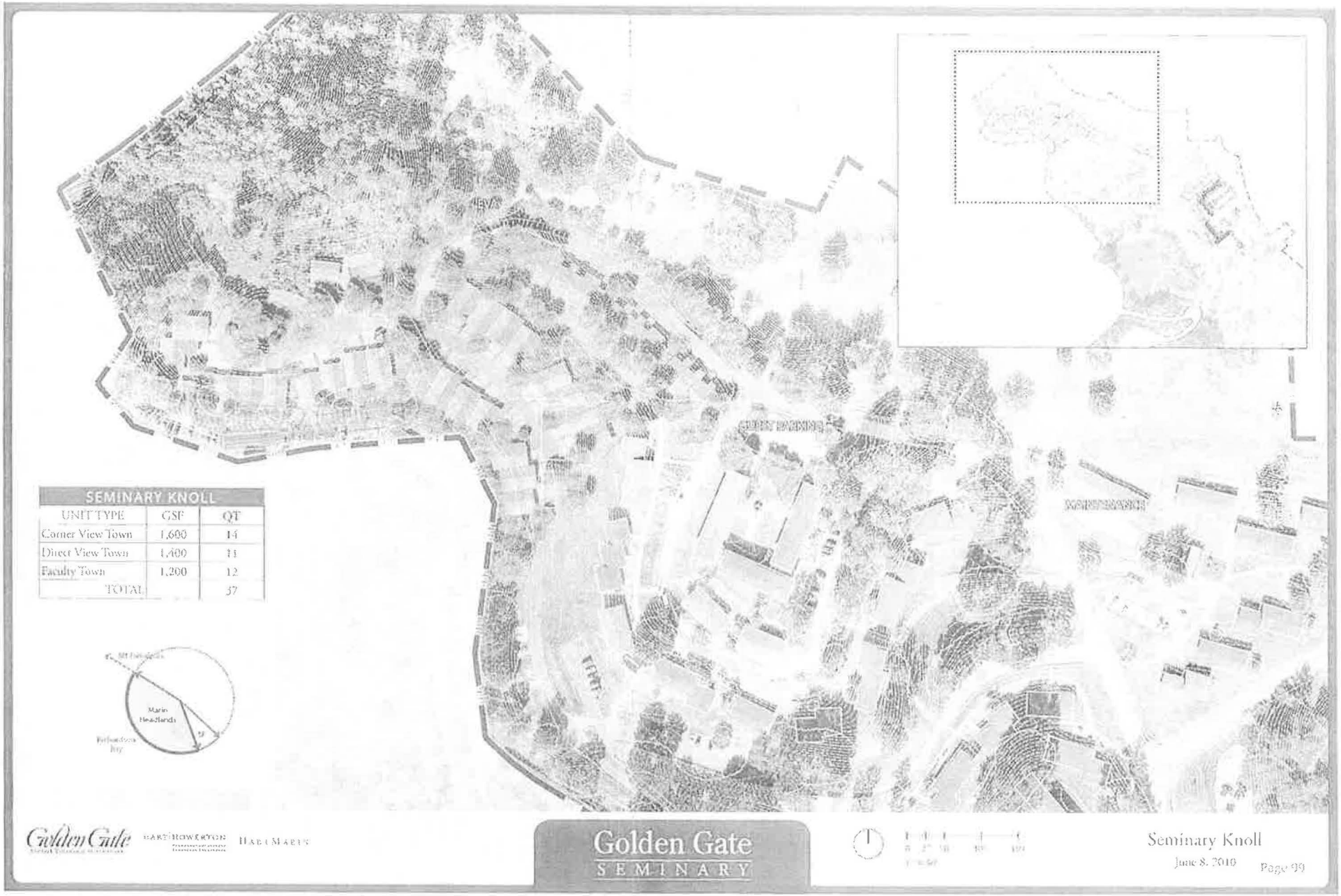
Golden Gate | HART HOWERTON | HARTMAKIS

Golden Gate SEMINARY

0 25 50 100 150

Student Village

June 8, 2010


SEMINARY KNOLL
UNIT TYPE | GSF | QT
Corner View Town | 1,600 | 14
Direct View Town | 1,400 | 11
Faculty Town | 1,200 | 12
TOTAL | | 37
Marin Headlands
Golden Gate
SEMINARY
Seminary Knoll
June 8, 2010
Page 99

SEMINARY POINT		
UNIT TYPE	GSF	QT
Bayside Estate CV	3,900	4
Seaside Cottage CV	2,400	3
Seaside Cottage	2,400	16
Penthouse Flat CV	1,930	2
Penthouse Flat	1,930	3
Town CV	1,750	3
Town	1,750	
TOTAL		38

Golden Gate SEMINARY

0 25 50 100 150'
1" = 100'

Seminary Point
June 8 2010

Appendix L

Geotechnical Reconnaissance Report

DONALD HERZOG & ASSOCIATES, INC.
Consulting Geotechnical Engineers

KEEP IN 1984 MP/RZ FILE

REPORT
GEOTECHNICAL RECONNAISSANCE
for MASTER PLAN
GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY
STRAWBERRY POINT
MILL VALLEY, CALIFORNIA

MAY 19, 1982

DH&A JOB NO. 994.1

Prepared for

Golden Gate Baptist Theological Seminary
Strawberry Point
Mill Valley, California 94941
Attention: Eugene England, Vice President
For Business Affairs

by

DONALD HERZOG & ASSOCIATES, INC.
MILL VALLEY OFFICE

Donn Ristau

Donn A. Ristau,
Senior Staff Geologist
Registered Geologist - 3634

Donald Herzog,
Principal Engineer
Civil Engineer - 18093

May 19, 1982

INTRODUCTION AND SCOPE OF WORK

This report presents the results of our recent geotechnical reconnaissance and subsurface investigation of the Golden Gate Baptist Theological Seminary at Strawberry Point.

The purpose of this investigation was to evaluate the geotechnical feasibility of proposed additional developments at the Golden Gate Baptist Theological Seminary; to identify potential geotechnical hazards; and to discuss possible mitigation measures.

PREVIOUS WORK AND WORK PERFORMED

The geology and relative stability of the study area is included on a regional map prepared by the California Division of Mines and Geology (Rice and Smith, 1976). Local mapping of the site, at a scale of 1" = 100', was performed in 1979 by Consulting Engineering Geologist, Burton H. Marliave, as part of a field reconnaissance for Donald Herzog & Associates. The results of a geotechnical reconnaiassance were presented in our report dated October 22, 1979, and a supplemental revision of that report was submitted on November 9, 1979. A detailed soil investigation was performed for three areas of the planned expansion program, and the results were presented in our report to you dated August 31, 1979.

An additional geotechnical reconnaissance of the area was made in March 1982, and the results presented in our report dated March 22, 1982. Surface and subsurface geologic features were mapped at a scale of 1" = 100' on a topographic base with a 5 foot contour interval. On the basis of that reconnaissance, and in view of proposed Master Plan expansion, four areas were identified for subsurface exploration. These areas are:

(1) the southern portion of the property, between Chapel Drive and Seminary Drive, proposed for condominium construction;

(2) the central portion of the property, between Hodges Drive and Gilbert Drive, proposed for gymnasium and day care facility;

(3) the northwest portion of the property, northwest and southeast of Shuck Drive, proposed for student and faculty housing;

(4) the southeast portion of the property, southeast of Storer Drive, proposed for single-family residential construction.

Subsurface investigations of these areas were performed on April 13 and 14, and May 2, 1982 to the extent of 6 test borings and 4 exploratory probes using a truck-mounted hollow-stem auger rig, and 23 backhoe test pits. Our Registered Geologist located the test holes, logged the conditions encountered, and obtained bulk and undisturbed soil and rock samples for visual examination and laboratory

testing. The test holes were located as indicated on Plate 1. The logs of the test borings are presented on Plates 2 through 7. The soils are described in accordance with the Unified Soil Classification System presented on Plate 8. A definition of rock terms is presented on Plate 9. Summary logs of the test pits are presented on Plates 10-21.

SITE CONDITIONS

Topography

The site is on the Strawberry Peninsula in Southern Marin County (San Rafael 7-1/2 minute quadrangle). Ground elevations range from sea level in the southeast portion of the site to 235 feet above mean sea level datum along the northern property boundary. A large portion of the area has been modified with cuts and fills to develop building sites, roadways, and parking lots.

Natural slopes generally vary from 1-1/2 horizontal to 1 vertical (1/2:1) to 4:1, although slopes on several knolls and in former marshland areas are relatively flat. Natural areas are moderately vegetated with annual grasses and some large trees. The drainage is predominantly to the southwest, into Richardson Bay.

Geology

Rock outcrops within the area are sparse, except where exposed in cut slopes. Bedrock is composed of a heterogeneous mixture of Mesozoic-aged Franciscan rocks (Rice and Smith, 1976).

The property is underlain predominantly by sandstone and shale. The sandstone typically is brown to orange-brown, and varies from medium to coarse-grained; massive to thin bedded; moderately consolidated; intensely to moderately fractured; low to moderately hard; friable to moderately strong; and moderately to deeply weathered. Shales are gray to dark gray, and vary from thinly laminated to very thinly bedded; closely fractured to crushed; low to moderately hard; friable to weak; and moderately to deeply weathered.

The sandstone and shale is in contact with other "typical" Franciscan rocks that include graywacke sandstones, shale, chert, and serpentinite. The nature of the contract is structurally complex; in places appearing faulted and sheared, while other areas suggest depositional relationships.

Graywackes are commonly dark gray to brown; well consolidated; intensely to moderately fractured; moderately hard to strong; and moderately weathered.

Chert crops out in limited areas as well bedded, resistant blocks in a sheared shale and graywacke matrix, or as irregular inclusions within sandstone and shale. At one locale, the chert is in depositional contact with shale; and does not display the typical melange characteristics.

Serpentinite is rare and crops out in the southwest corner as a small block surrounded by shale and sandstone.

The bedrock within the area generally displays a localized uniform structural orientation. The sandstones, shales and cherts commonly trend in a northwest direction, and dip moderately to steeply to the northeast. Strikes vary from North 40 degrees West to East-West, and dip northerly from 17 to 85 degrees. Zones of shearing, where the rocks are highly fractured, altered and structurally disrupted, are evident in some areas. Surface and subsurface exposures of bedding planes displaying near vertical dips suggest faulted bedrock conditions along the western margin of the property. These conditions correlate with other structural attitudes, outside the property, that are evident to the northwest and southeast.

The northwest portion of the area was previously characterized as a "Melange" zone (Rice and Smith, 1976), and the presence of sheared shale and graywacke with chert inclusions (see Test Pits 13-16) tends to confirm this interpretation. The melange shear orientation coincides with other localized shears to the northwest. However, the uniform orientation of the chert, shale and sandstone, as well as the fact that the chert displays a graded depositional contact with the shale and sandstone, suggests that this area may not be as deformed as other typical Franciscan melange zones in the Coast Range.

Soils

Quaternary deposits in the area include residual soils, colluvium, landslide debris, bay mud and fill material. Soil depths may vary from less than 6 inches to over 15 feet. The soils on natural slopes are undergoing typical slow downslope transport in the form of creep, and the distinction between residual in-place soil and colluvium is often difficult to define.

Landslides, in the form of shallow earthflows (generally less than 10 feet deep), have occurred on natural slopes at the site. Flows are characaterized by well defined headwall scarps, hummocky topography, lobate or delta-shaped masses near the toe of the slide, and seepage zones. The earthflows appear to be shallow seated and restricted to unstable soils overlying bedrock. No new large scale earthflows resulting from the severe winter storms of 1982 were observed, and the extent of the slides that had been mapped in 1979 did not significantly increase as a result of the January 1982 record storm.

A few debris slides and slumps were noted during the field investigation. These slides were of small extent (several tens of square feet) and restricted to steep cut slopes and non-engineered fills. Most of these small failures appeared recent, and probably occurred during the January storm.

Bay mud is of limited extent and is restricted to areas in the southeast and west-central portion of the site. This material typically is an organic rich silt or clay of low strength and high compressibility. The bay mud deposit in the west-central portion of the area has been covered with fill and is not exposed at this time.

Fills are common throughout the area, and generally consist of a heterogeneous mixture of local sandstone and shale derived from previous site excavations.

Drainage

Seepage is common on slopes in the area; especially where cut slopes intersect the soil/rock interface. Areas of loose fill commonly display ponded water. Some drainage ditches were noted to be clogged and non-functional, and culverted drain pipes were occassionally noted to be draining onto unprotected slopes and fills, causing gulley erosion and rilling.

Areas of Subsurface Investigation

(1) **Lower Chapel Drive Area:** The area south of Lower Chapel Drive is presently proposed for condominium construction. Test boring data (Plates 2 and 3) indicate that approximately 20 feet of weak fill and soil material overlies bedrock in this area. Based on Boring 23 (previously

drilled), 24, and 25, the depth to bedrock south of Lower Chapel Drive appears relatively uniform. Bedrock encountered north of Chapel Drive (Boring 26, and Test Pits 2, 5, and 6) was relatively shallow. The bedrock surface, from the north of Chapel Drive to test holes south of Chapel Drive, dips at an approximate 4-1/2:1 slope.

Slopes north of Lower Chapel Drive have previously been mapped as landslide debris. Test pit exploration in the area (Pits 1-7 and 22-24) indicates that soil/rock horizons are variable in depth, and we conclude that the extent of sliding is not as great as previously indicated. Pits 2-7, near the base of the slope bordering Chapel Drive, showed bedrock depths that varied from 2 feet to over 12 feet. Pits midway upslope (1, 22-24) showed depths from 3 feet to over 15 feet.

(2) Hodges Drive-Gilbert Drive Area: This flat, open space is being considered for construction of a gymnasium and possibly a day care center. Test boring data (Plates 5, 6, and 7) indicate that the northern margin of the site contains approximately 7 feet of weak fill and sediment overlying bedrock. The depth to bedrock increases to the south (Plate 6), where 14 feet of fill and sediment overlie rock.

(3) Shuck Drive Area: The slopes throughout this

area are being considered for student and faculty housing construction. Test pit data (Pits, 23, 14, and 15) for the area east of Shuck Drive indicates that 3-1/2 to 4 feet of topsoil, colluvium and minor earthflow debris overlie bedrock consisting of sheared shale and graywacke.

Slopes west and south of Shuck Drive are variable in terms of soil depth and bedrock conditions. Test Pits 17, 18, 19 and 21 indicate that from 1/2 to 7 feet of residual and colluviual soil overly sandstone bedrock. Pit 16 indicates that 4 feet of soil overly sheared shale and graywacke. The overlying soils are stiff clays and are apparently expansive, that is, they experience volumetric changes with changes in moisture content. The sheared bedrock contains extensive clay areas, and the bedrock material is also considered to have moderate expansion potential.

(4) Storer Drive Area: The slopes along the southern extent of Storer Drive are presently being considered for single-family, multiple-story units. Test Pits (8-11) and previous test borings indicate that soil depths vary from 3 feet to over 12 feet. Bedrock lithologies vary from sandstone to shale.

SEISMICITY

There are no indications of active faulting within the site. Mapped shear zones are in bedrock and represent structural deformation during pre-Quaternary time. There are no landforms within the area which indicate geologically recent offsets within bedrock or soil.

Several northwest trending active fault zones are known to exist within several miles of the site (Jennings, 1975). The shortest distance from the site to these faults, the maximum credible magnitude predicted for each fault, and the peak bedrock acceleration expected within the site are given in Table 1.

TABLE 1. SEISMIC CHARACTERISTICS OF LOCAL FAULTS

Fault System	Distance From Site (Miles)	Maximum Credible Earthquake Magnitude(1)	Peak Bedrock Acceleration(2)
San Andreas (Northern Section)	6.5	8.3	.63 g
Hayward	11.5	7.5	.40 g
Healdsburg-Rodgers Creek	18.0	7.0	.25 g

(1) The maximum credible earthquake is the severest earthquake

that appears to be reasonably capable of occurring on a given fault under presently known geologic and seismologic conditions. The maximum credible earthquake magnitudes were assigned to the various faults by using curves fitted to a plot or Richter magnitude versus length of fault rupture for historic North American earthquakes (Slemmons, 1977; and Borchert, 1975).

(2) Peak bedrock accelerations have been extrapolated from data presented by Schnabel and Seed (1973). Peak acceleration curves are based on limited data, especially for source to site distances of less than 14 miles. Peak accelerations based on these curves may be too low when sites are close to the fault (Hays, 1980).

As with the entire San Francisco Bay Area, historical earthquake records indicate a potential for strong earthquake shaking within the area, and future earthquake shaking should be anticipated. When active faults around the area are compared in terms of distance from the site, maximum predicted magnitude and estimated peak bedrock acceleration, it appears that the San Andreas fault system potentially may produce the greatest ground shaking of the area.

Liquefaction

Liquefaction is the sudden decrease of the shearing resistance of a cohesionless soil, associated with a temporary increase in the pore fluid pressure. It involves a transformation of the material into a fluid mass, and is commonly caused by shock or strain associated with earthquake shaking. An area identified as having potential

liquefaction hazard was examined with test borings (Plates 5, 6, and 7) within the west-central portion of the site. However, the cohesive nature of the soils overlying bedrock indicate that the risk of liquefaction within this area is very low.

Tsunami Hazard

The west-central portion of the area is currently within a zone that may be inundated by tsunami waves that have a runup of 20 feet at the Golden Gate (Ritter and Dupre, 1972). A tsunami having a wave height or runup of 20 feet has an estimated frequency of occurrence of 200 years (Ritter and Dupre, 1972). Areas most likely to be inundated are marshlaands, tidal flats and former bay margin lands that are now artificially filled. However, data presented by Wiegel (1975), indicates that Ritter and Dupre's interpretation of run-up height are in error by a factor of 1/2. Thus, we conclude that the west-central area probably would not be affected by a Tsunami with a run-up height of 10 feet. Furthermpore, no devastating tsunami has been recorded within the San Francisco Bay Area, and we judge the likelihood of occurrence within the site to be small. In addition, Tsunami warning networks are well developed, and should allow ample time for evacuation, if necessary.

CONCLUSIONS AND RECOMMENDATIONS

Based upon the results of our Geotechnical Investigation, we judge that the site is suitable for the planned development from a geotechnical standpoint. The major geotechnical considerations are landslides, springs, downhill creep, compressible marsh deposits, and loose fill.

The landslides at the site appear to be dormant, and are only experiencing minor creep movement. However, the slide areas are more susceptible to creep movement than is the remainder of the site. In addition, slide reactivation could be caused by severe rainfall, irrigation, water from broken underground utilities, and/or ground shaking during earthquakes. The risk of future instability can be reduced by a variety of methods.

Where reactivation does not pose a significant risk to improvements or to neighboring property, no stabilization work may be necessary. However, in these areas, the risk of future instability could be significantly reduced by installing surface and subsurface drainage improvements.

Where existing or planned new improvements are located directly below landslide areas, the landslides can be retained by reconstucting the downhill portions as compacted earth buttresses. The buttresses would be constructed by excavating the slide debris; excavating wide level keyways into firm underlying rock; installing subsurface drainage facilities consisting of drain rock and perforated pipe sloped to drain to outlets by gravity; replacing the excavated material as compacted fill to create retaining dams for the slide debris upslope; and installing appropriate surface drainage improvements. A schematic section through a toe buttress is shown on Plate 20.

Where improvements are planned, next to or upslope of unrepaired landslide areas, it will be necessary to locate the improvements away from the landslides to allow for future landslide enlargement, or else to protect the improvements with crib walls or other retaining type structures.

Where improvements are planned in slide areas, it will be necessary to reconstruct the slide areas as compacted earth buttresses with subsurface drainage facilities. This will entail excavating the slide debris; excavating wide

level keyways into the firm underlying rock; installing subsurface drainage facilities consisting of drain rock and perforated pipe sloped to drain to an outlet by gravity; replacing the fill as a compacted earth buttress; and installing surface drainage improvements. Structures and improvements can then be located on the compacted buttress. It will be necessary to use drilled, cast-in-place, reinforced concrete pier foundations to accommodate minor differential settlement and creep of the reconstructed buttress.

Where a level catchment and buffer area is not provided between the structure and an uphill slope, a catchment wall will be necessary to protect against the slight, but real, chance from mudflows from above. Such catchment walls should typically extend about 4 feet above the ground level, and should either be designed to resist large forces (on the order of 120 pcf), or else angled 45 degrees to the slope so as to divert debris. Catchment walls will probably never be used, but are prudent safety measures.

The only relatively large slides observed at the site are located on the slopes immediately above Lower Chapel Drive. If structures are built adjacent to this slope, it will be necessary to reconstruct these slides as compacted earth buttresses with subsurface drainage facilities. However, if at least a twenty-five foot wide level buffer

area, such as a road, can be provided between the structures and the toe of the slope, we judge that adequate protection can be achieved by enhancing the slope stability with surface and subsurface drainage improvements, and by protecting improvements with a large catchment structure. The catchment structure should extend at least eight feet above the ground level at the toe of the slope.

Seepage on the slopes is being caused to a large extent by ponding water in poorly graded areas, and by the lack of properly maintained ditches to carry surface water away before it can soak into the ground. Seepage can contribute to pavement failure and to instability. It will be necessary to reduce seepage by shaping areas to drain; by installing and maintaining concrete lined interceptor ditches above cut and fill banks; and by installing drainage systems from areas where water accumulates. It will also be necessary to intercept observed seepage areas by means of subsurface drains consisting of drain rock and perforated pipe sloped to drain to outlets by gravity. Water from storm drains, roof downspouts, paved areas, and subdrains should be conducted into a storm drain system.

Natural surface soils and non-engineered fills become weak and compressible when wet; experience slow downhill creep on hillsides (on the order of a small fraction of an

inch per year) as is typical of Marin County hillsides; and are unsuitable for support of foundations or fill. On hillsides, it will be necessary to key fills into firm residual soil or rock beneath the colluvium and non-engineered fills. It will also be necessary to extend foundations on hillsides into firm rock and to design foundations to resist lateral forces caused by downhill creep of the soils above the rock. Where building pad excavations extend into firm rock, we anticipate that spread footing type foundations will be suitable. In other hillside areas, we judge that drilled, cast-in-place, reinforced piers extending well into underlying rock will be necessary. It will be necessary to design the piers to resist lateral forces caused by downhill creep of the soils above the rock.

Where the depth to rock on hillsides exceeds about eight feet, the lateral forces caused by downhill creep become so large that required foundations are relatively expensive and perhaps even uneconomical. These areas should be avoided for construction; or the depth to rock reduced by site grading; or the creep forces eliminated by rebuilding these slopes as compacted earth buttresses with subsurface drainage facilities. The only potential development area where this may be necessary is in the center of the swale in the area below Storer Drive.

Where expansive soils are encountered, it will be necessary to deepen foundations to below the zone of significant seasonal moisture variation. In expansive areas, it will also be necessary to either underlie slabs with a moisture protecting and confining blanket of at least two to three feet of nonexpansive fill. Alternately, supported floors above grade could be used.

The colluvium which blankets the site is relatively weak and is subject to sloughing in steep cut banks. Cut banks in colluvium should be no steeper than 2:1, while cut banks in firm rock may be as steep as 1-1/2:1. Fill banks should be no steeper than 2:1. Existing cut banks have established deep rooted ground cover and have been time tested. Where periodic removal of debris is acceptable, these banks can remain.

Areas to receive fill should be prepared by scarifying to a depth of at least six inches, moisture conditioning as necessary, and compacting to at least 90 percent of the maximum dry density of the material per ASTM D-1557-79(C) laboratory compaction test procedure. Where fills are to be placed on hillsides, level keyways should be excavated into firm rock. Subsurface drainage systems, consisting of perforated pipe and drain rock, should be placed at the rear of the keyways as recommended by the Soil Engineer.

Fill material should then be spread in thin lifts, moisture conditioned as necessary, and compacted to at least 90 percent relative compaction. On hillsides, the fill should be continually keyed into firm rock.

The fill in the level area adjacent to Seminary Drive, between Hodges Drive and Gilbert, is underlain by soft and compressible marsh deposits known as bay mud. However, these marsh deposits are relatively thin and the majority of settlement due to existing fill loads has occurred. Foundation loads and/or additional fill loads would cause additional settlement to occur. We anticipate that approximately 2 inches of settlement will occur for each foot of additional fill placed. Foundation loads typical of single-story, wood-frame buildings would cause another inch or two of settlement to occur. We anticipate that differential settlements will be on the order of 25 percent of total settlements. Based on experience with similar projects, we anticipate that one and/or two-story, wood-frame structures in this area can be satisfactorily supported on stiff foundations supported on compacted or re-compacted fill. However, if the anticipated differential settlements are unacceptable, and/or if larger structures are planned, pile or pier foundations extending into the underlying rock will be necessary. The rock is relatively shallow, and the piles or piers should be relatively inexpensive.

The area between Lower Chapel Drive and Seminary Drive is blanketed with several feet of heterogeneous fill. Light settlement tolerant structures could be supported on stiffened spread footing foundations supported in a few feet of recompacted fill. However, the larger structures planned would impose unacceptably high bearing pressures, and are typically not settlement tolerant. It will be necessary to support these buildings on drilled, cast-in-place, reinforced concrete piers extending through the soil and into the firm underlying rock. The surface of the rock slopes flatter than 4:1, and the fill should not experience significant downhill creep. It will be necessary to recompact at least the upper three feet of fill in order to provide satisfactory support for roads and driveways. It will also be necessary to design utilities in the area with frequent flexible connectors to accommodate minor differential settlement. We judge that properly engineered utilities will perform satisfactorily with only normal maintenance.

The fill on the downhill side of Seminary Drive, opposite its intersection with Storer Drive, is also relatively deep and was placed on a hillside. It will be necessary to support units in this area on drilled piers extending into rock, and to set back at least 20 feet from the top of the bank in order to reduce the risk of potential instability.

We believe that there are no active faults at the site, and, therefore, little risk of fault related ground rupture during earthquakes. Like the entire Mill Valley area, the site is subject to severe ground shaking during earthquakes. It will be necessary to design and construct the project in strict accordance with current standards for earthquake resistant construction.

SUMMARY

In summary, we judge that the proposed project is feasible from a geotechnical standpoint. With proper engineering and construction, the risk of geotechnical problems should be well within the range generally associated with construction on similar sites in the Bay Area.

SUPPLEMENTAL WORK

Prior to developing precise building plans, detailed soil investigations, including additional subsurface exploration and laboratory testing should be performed. The results should be analyzed to provide the following geotechnical information:

1. A description of the soil conditions observed.
2. Seismic design recommendations.
3. Site grading recommendations.
4. Recommended foundation type(s) and design criteria.
5. Retaining wall design criteria.
6. Recommendations for slab-on-grade construction, if applicable.
7. Soil engineering drainge recommendations.

REFERENCES

1. Borcherdt, R. D., 1975. Studies for Seismic Zonation of the San Francisco Bay Region, USGS Professional Paper 941-A.

2. Hays, W. W., 1980. Procedures for Estimating Earthquake Ground Motions, USGS Professional Paper 1114.

3. Jennings, C. W., 1975. Fault Map of California. California Division of Mines and Geology, Geologic Data Map #1; Scale 1:750,000.

4. Ritter, J. r. and Dupre, W. R., 1972. Map Showing Aras of Potentiakl Inundation by Tsunamis in the San Francisco Bay Region, California. USGS Basic Contribution 52 (MFS Map MF-480).

5. Schnabel, P. B. and Seed, H. B., 1973. Accelerations in Rock for Earthquakes in the Western United States, Seismilogical Society of America Bulletin, Vol. 62, pp. 501-516.

6. Slemmons, D. B. and McKinney, R., 1977. Definition of Active Faults, U. S. Army Corps of Engineers, Miscellaneous Paper S-77-8.

7. Smith, T. C. and Rice, S. J., 1976. The Geology of the Tiburon Peninsula, Sausalito, and Adjacent Areas, Marin County, California. California Division of Mines and Geology, Open File Report (OFR 76-2SF), Plates 1E and 2E; Scale 1:12,000.

8. Weigel, R. L., 1975. Tsunami Risk at Spinnaker Point, San Rafael, California. Unpublished letter report.

LOG OF BORING 24

Equipment: Hollow Stem Auger

Elevation: 35± Date: 4/13/82

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
			12			0		GRAY-BROWN SANDY CLAYEY GRAVEL (GC) loose, moist (FILL)
UC = 1500 psf			19	15	116	5		becomes wet to saturated
								DARK GRAY SANDY SILT (ML) medium stiff, moist to wet, with occasional sandstone fragments (?FILL)
UC = 2200 psf			43	14	122	10		
								MOTTLED GRAY-BROWN SANDY CLAY (CL) medium stiff to stiff, wet (COLLUVIUM)
UC = 1700 psf			45	19	123	15		
								ORANGE-BROWN SANDSTONE intensely fractured, moderately hard, weak to moderately strong, deeply weathered
UC = 2300 psf			90/11"	11	130	20		
						25		BOTTOM OF HOLE
						30		No free water encountered

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LOG OF BORING 24

Golden Gate Baptist Seminary
Mill Valley, California

PLATE 2

LOG OF BORING 25

Equipment: Hollow Stem Auger

Elevation: 40+ Date: 4/13/82

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
			4			0		DARK BROWN CLAYEY SILT (ML) soft, saturated (FILL)
								BROWN CLAYEY GRAVEL (GC) medium dense, wet (FILL)
UC = 1200 psf			22	13	119	5		
								MOTTLED GRAY-BROWN CLAYEY SILT (ML) stiff, wet (? bay deposit)
UC = 1200 psf			22	11	122	10		
UC = 800 psf			14	22.2	111	15		
								ORANGE-GRAY-BROWN SANDY CLAY (CL) stiff, wet, with angular rock fragments (COLLUVIUM)
= 2000 psf			55	18	110	20		
								GRAY SHALE interbedded with orange-brown sandstone, moderately hard, weak, near vertical bedding planes
UC = 2200 psf			50/5"	14	109	25		
			BOTTOM OF HOLE					
						30		No free water encountered

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LOG OF BORING 25
Golden Gate Baptist Seminary
Mill Valley, California

PLATE 3

LOG OF BORING 26

Equipment: Hollow Stem Auger

Elevation: 43± Date: 4/13/82

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample
			50/3"			0	
						5	
						10	
						15	

MOTTLED BROWN CLAYEY GRAVEL (GC)
(FILL)

MOTTLED ORANGE-BROWN SANDY CLAY (CL)
stiff, wet, with rock fragments (COLLUVIUM)

BROWN SANDSTONE
moderately hard, weak, deep to moderately weathered

BOTTOM OF HOLE

No free water encountered

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LOG OF BORING 26

Golden Gate Baptist Seminary
Mill Valley, California

PLATE 4

LOG OF BORING 27

Equipment: Hollow Stem Auger

Elevation: 17± Date: 4/14/82

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample
UC = 2200 psf			13	13	116	0	
UC = 1200 psf			25	21	108	5	
UC = 2300 psf		50/4"		10	91	10	
						15	

DARK BROWN SANDY SILT (ML) (FILL)

DARK BROWN SILTY SANDY GRAVEL (GM) medium dense, wet to saturated (FILL)

MOTTLED GRAY-BROWN SILTY SAND (SM) with occasional gravel, medium dense, wet

MOTTLED BROWN-ORANGE-GRAY SANDY SILT (ML) medium stiff, wet

GRAY-BROWN SHALE intensely fractured, moderaately hard to hard, deeply weathered, steeply dipping

BOTTOM OF HOLE

No free water encountered

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LOG OF BORING 27

Golden Gate Baptist Seminary
Mill Valley, California

PLATE 5

LOG OF BORING 28

Equipment: Hollow Stem Auger

Elevation: 17+ Date: 4/14/82

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample
UC = 2200 psf			11 16	8	118	0	
UC = 300 psf			9	28	89		
UC = 700 psf			11	22	108	5	
UC = 800 psf			16	24	100		
UC = 1200 psf			35	18	111	10	
UC = 2200 psf			65	14	123		
						15	
			100/3"				
						20	

DARK BROWN CLAYEY SILT (ML) med. stiff, wet to saturated (FILL)

DARK GRAY CLAYEY GRAVEL (GC) medium dense, wet (FILL)

MOTTLED DARK GRAY SILT CLAY (CL) medium stiff, saturated

MOTTLED ORANGE-BROWN CLAYEY SAND (SC) medium dense, saturated, with angular rock fragments

MOTTLED ORANGE-BROWN SANDY CLAY med. stiff, saturated--less sand at 8.5', wet

MOTTLED ORANGE-GRAY CLAYEY SILT (ML) stiff to very stiff, moist

ORANGE-BROWN CLAYEY SANDSTONE with gray silt inclusions, low hardness, friable

GRAY-BROWN SILTSTONE moderately hard, weak, deeply weathered

BOTTOM OF HOLE

No free water encountered

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LOG OF BORING 28

Golden Gate Baptist Seminary
Mill Valley, California

PLATE 6

LOG OF BORING 29

Equipment: Hollow Stem Auger

Elevation: 17± Date: 4/14/82

Laboratory Tests	Drill Rate (min/ft)	Drill Pressure (psi)	Blows/foot	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
						0		DARK BROWN SANDY SILT (ML) medium dense, wet (FILL)
UC = 1200 psf			14 12	18	117			DARK GRAY SILTY GRAVEL (GM) medium dense, wet (FILL)
UC = 800 psf			14	28	91	5		DARK BROWN SANDY SILT (ML) medium stiff, wet, high organic content (?bay deposit)
UC = 2200 psf			60	11	123			GRAY-BROWN SHEARED SHALE intensely fractured, moderately hard, friable, deeply weathered
						10		BOTTOM OF HOLE
						15		No free water encountered

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LOG OF BORING 29
Golden Gate Baptist Seminary
Mill Valley, California

PLATE 7

MAJOR DIVISIONS					TYPICAL NAMES
COARSE GRAINED SOILS (MORE THAN HALF IS LARGER THAN #200 SIEVE)	GRAVELS (MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE)	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS, GRAVEL – SAND MIXTURES
			GP		POORLY GRADED GRAVELS, GRAVEL – SAND MIXTURES
		GRAVELS WITH OVER 12% FINES	GM		SILTY GRAVELS, POORLY GRADED GRAVEL – SAND – SILT MIXTURES
			GC		CLAYEY GRAVELS, POORLY GRADED GRAVEL – SAND – CLAY MIXTURES
	SANDS (MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE)	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS, GRAVELLY SANDS
			SP		POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 12% FINES	SM		SILTY SANDS, POORLY GRADED SAND – SILT MIXTURES
			SC		CLAYEY SANDS, POORLY GRADED SAND – CLAY MIXTURES
FINE GRAINED SOILS (MORE THAN HALF IS SMALLER THAN #200 SIEVE)	SILTS AND CLAYS (LIQUID LIMIT LESS THAN 50)		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL		ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (LIQUID LIMIT GREATER THAN 50)		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt		PEAT AND OTHER HIGHLY ORGANIC SOILS

UNIFIED SOIL CLASSIFICATION SYSTEM

Shear Strength, psf

Confining Pressure, psf

Consol	—	Consolidation	*Tx	320 (2600)	Unconsolidated Undrained Triaxial
LL	—	Liquid Limit (in %)	TxCU	320 (2600)	Consolidated Undrained Triaxial
PL	—	Plastic Limit (in %)	DS	2750 (2000)	Consolidated Drained Direct Shear
G_s	—	Specific Gravity	FVS	470	Field Vane Shear
SA	—	Sieve Analysis	*UC	2000	Unconfined Compression
■		"Undisturbed" Sample	LVS	700	Laboratory Vane Shear
☒		Bulk Sample			

Notes: (1) All strength tests on 2.8" or 2.4" diameter samples unless otherwise indicated.

(2) * Indicates 1.4" diameter sample.

KEY TO TEST DATA

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SOIL CLASSIFICATION CHART AND KEY TO TEST DATA

PLATE 8

ENGINEERING GEOLOGIC TERMS FOR ROCK

Relative Numerical Scale			
STRUCTURAL SPACING			
B-7	MASSIVE	more than 2 meters	more than 6 feet
B-6	THICKLY-BEDDED	60 cm - 2 meters	2 - 6 feet
B-5	MEDIUM-BEDDED	200 mm - 60 cm	8 - 24 inches
B-4	THINLY-BEDDED	20 - 60 mm	2-1/2 - 8 inches
B-3	VERY THINLY BEDDED	10 - 60 mm	3/4 - 2-1/2 inches
B-2	CLOSELY-LAMINATED	6 - 20 mm	1/4 - 3/4 inches
B-1	VERY CLOSELY-LAMINATED	less than 6 mm	less than 1/4 inch
JOINT, FRACTURE OR SHEAR SPACING			
J-6	VERY WIDELY-SPACED	more than 2 meters	more than 6 feet
J-5	WIDELY-SPACED	60 cm - 2 meters	2 - 6 feet
J-4	MODERATELY WIDELY-SPACED	200 mm - 60 cm	8 - 24 inches
J-3	CLOSELY-SPACED	60 - 200 mm	2-1/2 - 8 inches
J-2	VERY CLOSELY-SPACED	20 - 60 mm	3/4 - 2-1/2 inches
J-1	EXTREMELY CLOSELY-SPACED	less than 20 mm	less than 3/4 inch

HARDNESS		
H-1	SOFT	can be dug by hand and crushed with fingers, plastic (capable of being molded)
H-2	MODERATELY HARD	friable (grains poorly cemented), can be gouged deeply with knife and will crumble readily under light hammer blows
H-3	HARD	knife scratch leaves dust trace, will withstand a few hammer blows before breaking
H-4	VERY HARD	scratched with knife with difficulty, difficult to break with heavy ringing hammer blows
DEGREE OF WEATHERING		
W-1	HIGHLY WEATHERED	abundant fractures coated with oxides, carbonates, sulphates, mud, etc., through discoloration, rock disintigration, mineral decomposition
W-2	MODERATELY WEATHERED	some fracture coating, moderate or localized discoloration, little to no affect on cementation, slight mineral decomposition
W-3	SLIGHTLY WEATHERED	a few strained fractures, slight discoloration, little or no affect on cementation, no mineral decomposition
W-4	FRESH	unaffected by weathering agents, no appreciable change with depth

TEST PITS

	Depth (Inches)	Description
1.	0- 20	Topsoil; dark brown silty sand, loose, wet
	20- 56	Colluvium/Residual soil; light brown sand (SP) and clayey sand (SC), loose to moderately dense, wet to saturated)
	56- 84	Weathered rock; yellow-brown sandstone and interbedded gray shale, closely fractured, low hardness, friable to weak, moderately weathered, extensive seepage at 78 inches
2.	0- 12	Topsoil; dark brown sandy silt (ML), loose, moist
	12- 19	Colluvium/Residual soil; mottled, yellow, orange-brown sandy clay (CL) with sandstone and shale fragments, moderately stiff, moist
	19- 21	Weathered rock; gray clayey gravel (GC) weathered shale fragments
	21- 42	Rock; gray shale, well consolidated, very thin-bedded, vertically dipping, closely fractured, moderately hard, moderately strong, moderately weathered

3.	0- 20	Topsoil; dark brown clayey sand (SC), loose, wet
	20- 35	Colluvium; dark brown sandy clay (CL) with rock fragments, seepage at 25 inches, moderately stiff, saturated
	35- 55	Colluvium; mottled orange-brown-gray, gravelly clay (CL), stiff, saturated
	55- 80	Colluvium (?); mottled orange-brown gravelly clay (CL), stiff to very stiff, saturated.
	80- 90	Weathered rock; orange-brown-gray weathered siltstone, poorly consolidated, low hardness, friable, deeply weathered
4.	0- 20	Topsoil; dark brown sandy clay (CL), moderately stiff, wet
	20- 26	Colluvium; mottled gray-orange-brown sandy clay (CL), moderately stiff, saturated, seepage at 24 inches, grades into lower material
	26-114	Colluvium; mottled orange-brown-gray clay, very stiff, sataurated, becomes grayer and siltier at 72 inches
5.	0- 9	Topsoil; dark brown clayey sand (SC), loose, wet
	9- 11	Residual soil; orange-brown and gray sand (SP) to sandy clay (CL), moderately dense to dense, wet
	11- 66	Weathered rock; orange-brown sandstone with gray clay seams, moderately consolidated, closely to intensely fractured, low to moderately hard, weak to friable, seepage at 12 inches

6.	0- 7	Topsoil; dark brown clayey sand (SC), loose, wet to saturated, seepage at 7 inches
	7- 36	Weathered rock; orange-brown sandstone with gray clay seams, moderately consolidated, closely fractured, low hardness, weak to friable, moderately to deeply weathered
7.	0- 18	Topsoil; dark brown sandy silt (ML), loose, moist
	18- 28	Colluvium; mottled rusty brown gravelly clay (CL), moderately stiff, wet to saturated, seepage at 28 inches
	28- 60	Colluvium; mottled gray-rust brown sandy clay (CL), stiff, saturated to wet
	60- 82	Residual soil; yellow-brown sandy clay (CL), very stiff, wet
	82- 90	Weathered rock; mottled gray-orange-brown siltstone grades into orange brown sandstone, poor to moderately consolidated, intensely fractured, low hardness, friable, deeply weathered

8.	0- 7	Topsoil; dark brown silt (ML), loose, moist
	7- 23	(?)Fill; brown sand (SP) and sandstone fragments, moderately dense, wet
	23- 29	Colluvium; brown clay (CL), stiff wet
	29- 31	Residual soil; gray clay (CL), moderately stiff, wet
	31- 48	Rock; gray shale, moderately to well consolidated, very thin-bedded, bedding N70W, 46NE, intensely to closely fractured, moderaetly hard, weak to moderately strong, moderately weathered
9.	0- 18	Topsoil; dark brown silt (ML), loose, moist to wet
	18- 34	Residual soil; red-brown sandy silt (ML), moderately stiff, wet
	34- 52	Weathered rock; brown sandstone, moderately consolidated, thin-bedded, bedding N64W, 56NE, closely to intensely fractured, moderately hard, weak to moderately strong, moderately weathered, seepage at 48 inches

10.	0- 24	Topsoil; dark brown silt (ML), with brown sandstone fragments, grades into lower material, loose, moist
	24- 55	Colluvium; brown clayey sand (SC), moderately dense, wet
	55- 68	Colluvium; brown clay (CL) with minor amount of sand, very stiff, saturated, seepage at 56 inches
	68-150	Colluvium/Residual soil; mottled orange-brown silty clay (CL), with rock fragments, stiff, saturated to wet--appears to resemble highly weathered rock at bottom of pit
11.	0- 20	Topsoil; dark brown silt (ML), loose, moist
	20- 52	Colluvium; dark brown silt (ML) with sandstone rock fragments, moderately stiff, wet
	52- 96	Colluvium; mottled orange-brown sandy clay (CL), stiff, wet to saturated, seepage at 60 inches, grades into lower material
	96-108	Residual soil/Weathered rock; mottled orange-gray-brown siltstone, poorly consolidated, intensely fractured, low hardness, friable, deeply weathered
	108-122	Weathered rock; mottled orange-gray-brown siltstone and brown sandstone, properties as above
12.		Not dug

13.	0- 22	Topsoil; dark brown clayey silt (ML), loose, wet
	22- 28	Residual soil; mottled gray-brown sandy clay (CL) with shale fragments, moderately stiff, wet
	28- 40	Residual soil; mottled yellow-gray clayey sandy silt (ML), with shale fragments, stiff, moist
	40- 76	Weathered rock/rock; gray sheared shale with some inclusions of graywacke, crushed to intensely fractured, low hardness, friable, deeply weathered
	76-104	Rock; dark gray graywacke sandstone, well consolidated, closely fractured, hard, strong, moderately weathered
14.	0- 20	Topsoil; dark brown silt (ML), loose to moderately stiff, moist
	21- 30	Earthflow; red-brown clayey sand (SC) to gravelly sand (SP), loose wet, grades into lower material
	30- 46	Earthflow; light red-brown clayey gravel (GC) with brown sandstone fragments, loose, saturated, seepage at 40 inches
	46- 47	Residual soil; yellow-gray clay (CL) with shale fragments, moderately stiff, saturated, grades into lower material
	47-120	Weathered rock/rock; gray sheared shale and graywacke with light gray clay seams, intensely fractured, low to moderately hard, friable to weak, deeply weathered

15.	0- 16	Topsoil; dark brown clayey sand (SC), loose, wet
	16- 27	Earthflow; red-brown clayey sand (SC) to sand (SP) with small sandstone fragments, loose, saturated, seepage at 17 inches
	27- 28	Colluvium; mottled red-brown-yellow sandy clay (CL), moderately stiff, wet to saturated
	28- 37	Residual soil; mottled yellow-gray clay (CL) with fragments of chert and graywacke, very stiff, wet to moist
	37- 46	Residual soil; gray clay with shale and graywacke fragments, very stiff, moist
	46- 68	Rock; gray sheared shale and graywacke, low hardness, friable, deeply weathered, moist to dry, intensely sheared areas are predominantly clay
	68- 72	Rock; gray graywacke, well consolidated, closely to moderately fractured, hard, strong, moderately weathered, dry

16.	0- 13	Topsoil; dark brown sandy clay (CL), loose to moderately stiff, wet to saturated, seepage at 13 inches
	13- 47	Residual soil; gray clay (CL) with occasional rock fragments of graywacke and chert, very stiff, expansive
	47- 96	Weathered rock; momttled green-yellow-gray clay (CL) intermixed with sheared shale and graywacke, poorly consolidated, intensely fractured to crushed, low hardness, friable to plastic, deeply weathered; clay is stiff, wet to moist
17.	0- 7	Topsoil; dark brown sandy silt, loose, moist
	7- 19	Weathered rock; yellow-brown sandstone, moderately consolidated, intensely fractured, low hardness, friable to weak, grades into lower material
	19- 22	Weathered rock; yellow-brown clay (CL), moderately stiff, saturated, seepage at 19 inches
	22- 24	Weathered rock; gray clay (CL), moderaetly stiff, wet
	24- 72	Rock; gray shale and yellow-brown sandstone with gray clay seams, moderately consolidated, intensely fractured, moderately hard, friable to weak, deep to moderately weathered

18.	0- 20	Topsoil; dark brown silt (ML), loose, wet
	20- 39	Colluvium; red-brown sandy clay (CL), stiff, wet to saturated, seepage at 26 inches
	39- 55	Colluvium; mottled yellow-brown sandy clay (CL), stiff, saturated to wet
	55- 78	Weathered rock/rock; yellow-brown sandstone, moderately fractured, low to moderately hard, friable to weak, moderately weathered
19.	0- 6	Topsoil; dark brown silty sand (SM), loose, wet to saturated, seepage at 4 inches
	6- 52	Rock; yellow-brown sandstone, moderately consolidated, closely fractured, weak to friable, moderately hard, moderately weathered

20.	0- 16	Topsoil; dark brown sandy silt (ML), loose, wet to saturated, seepage at 7 inches
	16- 30	Earthflow; gray-brown clayey sand (SC), moderately dense, saturated
	30- 60	Earthflow; yellow-brown slightly sandy clay (CL), stiff, saturated
	60- 76	Colluvium; mottled yellow-brown-gray clay (CL), very stiff, saturated
	76- 89	Weathered Rock; mottled yellow-brown-gray silstone anad sandstone with clay fracture filling, poorly consolidated, intensely fractured, low hardness, friable, deeply weathered
	89- 91	Rock; yellow-brown sandstone, moderate consolidation, intensely fractured, low to moderately hard, friable to weak, moderately weathered

DONALD HERZOG & ASSOCIATES
Consulting Soil & Foundation Engineers

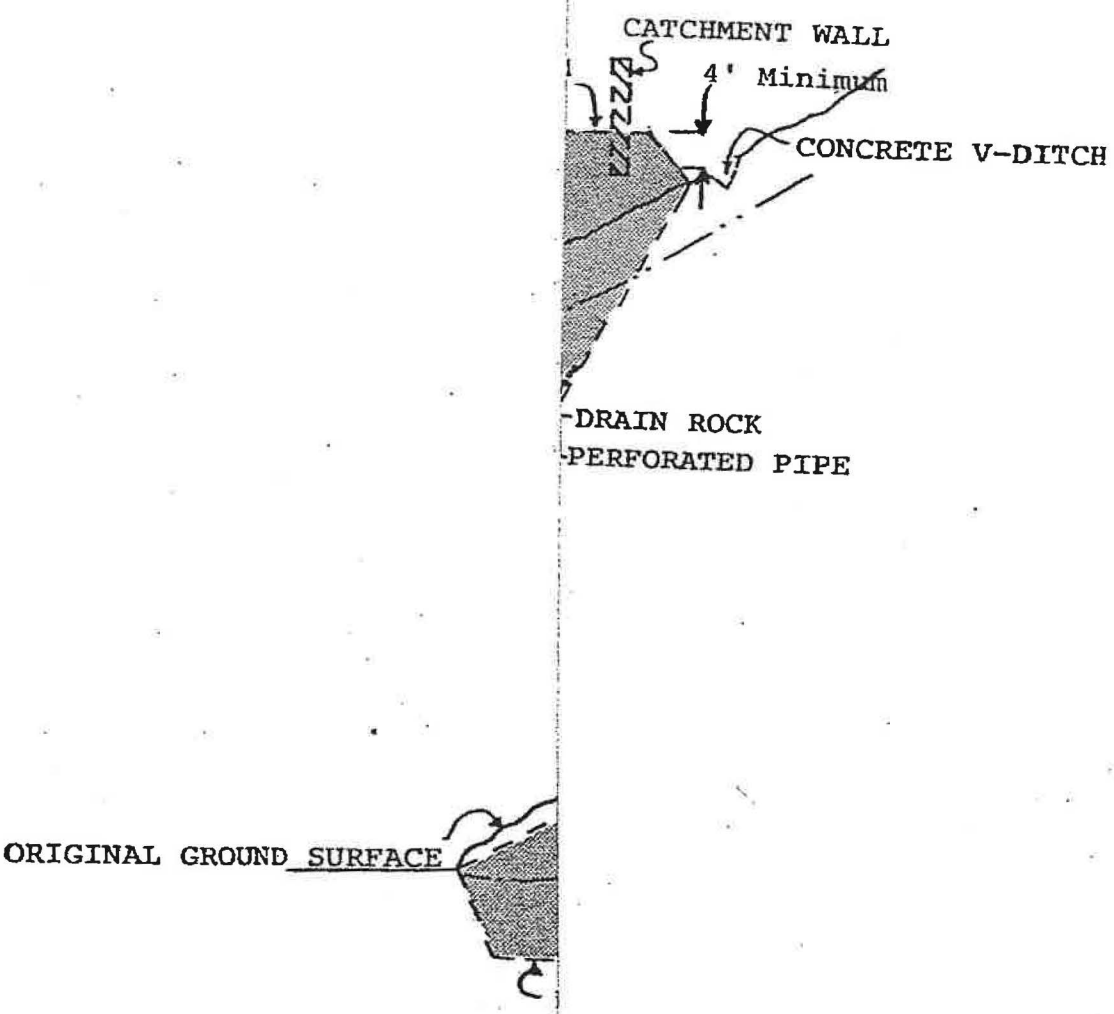
Job No: 994.1 Appr: DH Date 5/19/82

TEST PIT LOG
Golden Gate Baptist Seminary
Mill Valley, California

PLATE
19

21.	0- 30	Topsoil; dark brown silt (ML), loose, moist
	30- 44	Colluvium/residual soil; orange-brown sandy silt (ML) with rock fragments, moderately stiff, wet
	42- 62	Residualsoil/weathered rock; orange-brown-gray siltstone, poorly consolidated, intensely fractured, low hardness, friable, deeply weathered, moist
	62- 72	Rock; gray-brown shale and orange-brown sandstone, moderately consolidated, intensely fractured, moderately hard, weak, moist
22.	0- 12	Topsoil; dark brown silt (ML), loose, moist to wet
	12-108	Colluvium; mottled yellow-brown-red gravelly silt (ML), moderately stiff, saturated and prone to caving, seepage at 48 inches
	108-120	Rock; yellow-brown sandstone, moderately consolidated, moderately hard, weak, moderately weathered

23.	0- 27	Topsoil; dark brown silt (ML), loose moist
	27- 36	Colluvium; mottled orange-brown clayey silt (ML) with sandstone fragments, stiff, wet to saturated, seepage at 34 inches
	36- 52	Rock; orange-brown sandstone, moderately consolidated, closely to intensely fractured, moderately hard, weak, moderately weathered
24.	0- 48	Topsoil/earthflow; dark brown silt (ML) with sandstone fragments, loose to moderately stiff, wet to saturated, seepage at 41 inches
	48- 72	Colluvium; mottled orange-brown clay (CL) with rock fragments, moderaetly stiff to very stiff, saturated
	72-160	Colluvium/residual soil; mottled yellow-brown-gray clay (CL) with rock fragments, stiff to very stiff, saturated to wet--starting to appear as residual soil in bottom.



d determine actual location,
sses and subdrainage during

SCHEMATIC
OF BUTTRESSED SLOPE

Golden Gate Baptist Seminary

PLATE
22

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Appendix M

Phase I ESA

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PHASE I - ENVIRONMENTAL SITE ASSESSMENT

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MILL VALLEY, CA

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CERTIFICATION

"WE DECLARE THAT, TO THE BEST OF OUR PROFESSIONAL KNOWLEDGE AND BELIEF, WE MEET THE DEFINITION OF ENVIRONMENTAL PROFESSIONALS AS DEFINED IN §312.10 OF THIS PART."

"WE HAVE THE SPECIFIC QUALIFICATIONS BASED ON EDUCATION, TRAINING, AND EXPERIENCE TO ASSESS A PROPERTY OF THE NATURE, HISTORY, AND SETTING OF THE SUBJECT PROPERTY. WE HAVE DEVELOPED AND PERFORMED THE ALL APPROPRIATE INQUIRIES IN CONFORMANCE WITH THE STANDARDS AND PRACTICES SET FORTH IN 40 CFR PART 312."

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EXECUTIVE SUMMARY

This report presents the findings of the Phase I - Environmental Site Assessment (Phase I) performed by The Consulting Group (TCG) in Mill Valley, California along Seminary Drive and East Strawberry (Subject Property). The Phase I was performed in accordance with the American Society of Testing Materials (ASTM) practice standards E1527-13, California State and Local Requirements and the EPA regulation – All Appropriate Inquiry (AAI).

The Subject Property is located (Figures 1 through 5) in a Residential area of Mill Valley, in a district known as Strawberry. The Subject Property is a Baptist seminary with a main building, several residential buildings (both dorms and multi-residential condominiums) and undeveloped grasslands. The Phase I consisted of inspection of the property and the surrounding area.

Inspection of the Subject Property revealed some of potential concern, but these possible environmental concerns are not part of a normal Phase I, so they are presented as possible concerns. There are no "Recognized Environmental Conditions" (RECs), "Controlled Recognized Environmental Conditions" (CRECs) or "Historical Recognized Environmental Conditions" (HRECs), on the Subject Property or the adjacent properties.

Table ES.1 - Items Noted in Address

Address	Non-REC	REC	CREC	HREC
Golden Gate Baptist Seminary	Suspect Asbestos Containing Material (ACM) Suspect Lead Based Paint (LBP) and Lead Containing Paint (LCM) Suspect Mercury Switches and Fluorescent Tubes Suspect PCB Light Ballasts	NONE	NONE	NONE
Notes: REC = Recognized Environmental Condition, CREC = Controlled Recognized Environmental Condition [subset of REC], HREC = Historical Recognized Environmental Condition				

The adjacent parcels are used as:

- Residential and some Commercial uses to the west/east/south/north.

A neighborhood/area drive-by did not reveal potential environmental issues (listed sites) that can be classified as RECs, CRECs or HRECs. The closest listed potential is for an Historic Auto Repair, but there is no evidence, other than the address, of its presence. The listed sites within a ¼ mile do not appear to have the potential to affect the Subject Property.

Regulatory agency databases and other sources were reviewed to determine environmental conditions at the Subject Property, adjacent properties, and/or nearby properties that may affect the Subject Property. Radii of zero miles to over one-mile were established, depending on database searched, for the search.

The Subject Property is a Baptist seminary (Figures 3 and 4). The subject property was not identified on any of the databases searched.

Adjacent/nearby or vicinity properties were identified on the following Federal, State, or regional databases[1]:

- (**LUST REG 2**) Fuel Leak List Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.
- (**LUST**) Geotracker' s Leaking Underground Fuel Tank Report Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.
- (**SLIC**) Statewide SLIC Cases, the SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.
- (**SLIC REG 2**) Spills, Leaks, Investigation & Cleanup Cost Recovery Listing The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.
- (**RCRA-SQG**) RCRA - Small Quantity-RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites, which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.
- (**RCRA-LQG**) RCRA - Large Quantity Generators RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites, which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.
- (**ERNS**) Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.
- (**ENVIROSTOR**) EnviroStor Database The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifies sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor

[1] The listings are color-coded: Environmental Concern, Operating Permit, or On-List.

provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

- (**UST**) Active UST Facilities Active UST facilities gathered from the local regulatory agencies
- (**CA FID UST**) Facility Inventory Database The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.
- (**HIST UST**) Hazardous Substance Storage Container Database The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.
- (**SWEEPS UST**) SWEEPS UST Listing Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.
- (**DEED**) Deed Restriction Listing Site Mitigation and Brownfields Reuse Program Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.
- CHMIRS: California Hazardous Material Incident Report System California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).
- (**RCRA NonGen / NLR**) RCRA - Non Generators RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites, which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.
- (**CORTESE**) "Cortese" Hazardous Waste & Substances Sites List The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).
- (**HIST CORTESE**) Hazardous Waste & Substance Site List. The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.
- (**NOTIFY 65**) Proposition 65 Records Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.
- **(DRYCLEANERS**) Cleaner Facilities A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; dry cleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.
- **(ENF**) Enforcement Action Listing A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.
- (**HAZNET**) Facility and Manifest Data Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the

manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

- (**HWP**) EnviroStor Permitted Facilities Listing Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.
- (**EDR US Hist Auto Stat**) EDR Exclusive Historic Gas Stations Database has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.
- **(EDR US Hist Cleaners**) EDR Exclusive Historic Dry Cleaners Database has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.
- (**RGA LUST**) Recovered Government Archive Leaking Underground Storage Tank The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

A discussion regarding the sites identified, and their impact to the Subject Property, is included in the text of the report.

The historic information gathered and reviewed showed generally good correlation and nothing out of the ordinary. For the environmental liens, none were found and no use restrictions were recorded. Historical information was gathered to identify potential environmental concerns due to historical activities. Information gathered[2] was from:

- United States Geological Survey (USGS) Historical Topographical Maps,
- Historical Aerial Photographs,
- A City Directory,
- Environmental Liens and AULs,
- Geotracker, and
- Client-provided Aerial Map with Lot outlined (Figure 4).

The geology of the area is Alluvium (clayey silts and sands) extending to at least six feet below grade (fbg), but more likely, this soil type extends to about 15-20 fbg. Below this is weathered and unweathered bedrock. The Subject Property does not appear to sit on any active faults, but to the west is the San Andreas Fault, to the east is the Hayward Fault, and to the northeast is the

[2] There were no Sanborn Maps available and no Building Permits were found for the subject property.

Rogers Creek Fault, all of which can cause earth movement. The shallow groundwater in the area is in contact with the atmosphere (Water Table Condition), and appears to be variable. Regional flow is toward the bay and can be affected by topography, rainfall, and/or groundwater pumping.

As the VEC report indicates, there is no direct evidence of vapor intrusion at the Subject Property, and the fourteen (14) sites listed as possible have been dismissed in the VEC report. The report is included as Appendix 11.

A review of the radon results provided in the physical setting section of the Radius Map™ Report with GeoCheck® indicates that radon in the area is not a problem.

There is no direct environmental evidence with regard to the subsurface at the Subject Property or vicinity of impact. The Subject Property is currently a Baptist seminary, which was previously undeveloped land.

We are not recommending any further investigation. However, during any renovation or demolition activities, we recommend:

- Following all ACM and LCM regulations and requirements with regard to identifying, handling, and disposal, and
- Following all HAZMAT regulations and requirements with regard to identification, characterization, waste and debris disposal, and recycling.

1.0 - INTRODUCTION

1.1 - INTRODUCTION

This report presents the findings of the Phase I - Environmental Site Assessment (Phase I) performed by The Consulting Group (TCG) in Mill Valley, California bounded by Seminary Drive and East Strawberry Drive (Subject Property) [Figures 1 through 5]. The Phase I[3] was performed in accordance with the American Society of Testing Materials (ASTM) practice standard #E1527-13, California Requirements and the EPA regulation – All Appropriate Inquiry (AAI).

1.2 - SCOPE-OF-WORK

The Phase I study is a non-intrusive study that looks at the property, its history, and surroundings. During this project, the following scope-of-work was performed for the Phase I:

1. Site Inspection, including: Subject Property and Boundary Walk;
2. Area/Neighborhood Drive-By;
3. Search and Review of Federal, State, and Regional Databases;
4. Search and Review of Historical Topographs, Sanborn® Maps[4], Aerial Photographs, and a City Directory;
5. Search and Review of Environmental Liens and AULs, Property Tax Map, and Building Permits;
6. Search and Review of Geology, Hydrogeology, Groundwater Well information, Radon review, and a Vapor Encroachment Concern Screen Report;
7. Preparation of a Technical Report.

This document represents the technical report task of the project. Section 2 of this report describes the Subject Property Inspection and Questionnaire results; while Section 3 presents the database search and review. Section 4 presents the historical information including: maps, photos, city directory, environmental liens, and building permits. Section 5 presents the geology and hydrogeology of the area, any wells found in the area, and whether vapor intrusion should be considered an issue; while Section 6 presents our observations, conclusions, and recommendations. Section 7 presents references. Figures and Appendices are attached in support of the information presented below.

[3] The research conducted for this study and the report prepared are in general conformance with the EPA "All Appropriate Inquiries" standard and the ASTM 1527-13 "Standard Practices for Environmental Site Assessments: Phase I Environmental Site Assessment Process". The primary purpose for performing a Phase I ESA is to "…permit a user to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations (commonly known as Landowner Liability Protections) listed in Comprehensive Emergency Response Compensation and Liability Act (CERCLA) liability." (ASTM, 2013) Further, it is the goal of this study to identify business risks associated with the property associated with environmental conditions.

[4] Sanborns were not available for this site, the certification is found in Appendix 5.

2.0 - SUBJECT PROPERTY INSPECTION

2.1 - INTRODUCTION

On 09 May 2014 Sherwood Lovejoy Jr. inspected the address that makes up the parcels **#043-261-25, 043-261-26, 043-262-03, 043-262-06, 043-401-05, 043-401-10, 043-401-16, 043-402-03, 043-402-06 (**Subject Property), and its boundaries with other properties. An Area/Neighborhood Drive-by was also performed during this inspection.

2.2 - SUBJECT PROPERTY DESCRIPTION

The Subject Property is located in a commercial/residential area bounded by Seminary Drive and East Strawberry Drive, in Mill Valley, California (Figures 1 through 5). The Subject Property is a Baptist seminary. The Assessors Parcel Numbers (APNs) are **#043-261-25, 043-261-26, 043-262-03, 043-262-06, 043-401-05, 043-401-10, 043-401-16, 043-402-03, 043-402-06**. An Environmental Inspection Form (EIF) for the Subject Property is attached in Appendix 1. Neither the buyer nor the seller, have completed "Competent-Person" questionnaires[5]. Selected photographs of the Subject Property and its surroundings are included as Appendix 2.

2.3 - PROPERTY INSPECTION

On 09 May 2014, the Subject Property, and property boundaries were inspected. The Subject Property and its boundaries with adjacent parcels were walked and inspected, for any evidence of surface contamination, staining, or other unusual conditions. The Tabulated items are organized, by address, and then as a Non-RECs, Recognized Environmental Conditions (RECs)[6], Controlled RECs (CRECs), or an Historic RECs (HRECs):

[5] When the questionnaires are completed they will be submitted as an Addendum.

[6] The goal of this process is to identify Recognized Environmental Conditions associated with the property. A recognized environmental condition is defined as "…the presence or likely presence of any hazardous substances or petroleum products on a property that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property." This definition does not include "*de minimis* conditions that generally do not pose a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies" (ASTM, 2013).

Table 2.1 - Items Noted in Address

Address	Non-REC	REC	CREC	HREC
Golden Gate Baptist Seminary	Suspect Asbestos Containing Material (ACM) Suspect Lead Based Paint (LBP) and Lead Containing Paint (LCM) Suspect Mercury Switches and Fluorescent Tubes Suspect PCB Light Ballasts	NONE	NONE	NONE
Notes: REC = Recognized Environmental Condition, CREC = Controlled Recognized Environmental Condition [subset of REC], HREC = Historical Recognized Environmental Condition				

2.4 – AREA/NEIGHBORHOOD DRIVE-BY

An Area/Neighborhood Drive-By was also performed on 09 May 2014. During this inspection, nothing out of the ordinary or of concern was observed. None of the listed sites within ⅓ of a mile, which is the outer radius for the Vapor Encroachment Concern (VEC) report, are considered a REC, CREC[7], or HREC by AAI, or ASTM.

2.5 – LIMITATION OF STUDY/DATA GAPS

"Data Gaps" are missing database reports or information, but these reports are only pieces of the historical record of the Phase I and should be considered as such. There are no missing database reports for this subject property. However, missing data can be somewhat re-created by other historical reports, but you must have an understanding of the history of the building, its occupants, and the area.

There are no Sanborn Maps available for this site. The Client provided an Aerial Photo with the boundaries of the study area outlined (Figure 4).

[7] CREC is a new category under REC, where the site is undergoing mitigation supervised by an agency.

3.0 - DATABASE SEARCH AND REVIEW

3.1 - INTRODUCTION

Environmental Data Resources, Inc. (EDR), under contract to TCG, performed a database search (Radius Map™ Report with GeoCheck®). The database search and review was performed according to ASTM standards[8] with additional regional databases included to meet California requirements. The search was over five radii:

- The Subject Property
- Inside one-eighth mile radius;
- One-eighth mile to one-quarter mile radius;
- One-quarter mile to one-half mile radius; and
- One-half mile to one and one mile radius.

The results of the search and review are briefly described below. Map Index Numbers (MINs) presented in the descriptions below refer to the MINs assigned in the Database Search Report that is attached as Appendix 3. In some cases, a MIN may contain several different site listings and citations with either the same or adjoining addresses.

3.2 – SUBJECT PROPERTY

The Subject Property was not identified on any databases that were searched as part of this study.

3.3 - INSIDE ONE-EIGHTH MILE RADIUS SURVEY

Within this search radius, there are 0 MINs classified as being of environmental concern[9], 0 MINs listed as having operating permits, and 4 MINs was on hazardous substance lists. The

[8] Adherence to ASTM also complies with EPA regulations.

[9] Environmental Concerns, as depicted on the database maps, are divided into three categories: Environmental Concerns - High Priority: possible Recognized Environmental Condition (RECs); Environmental Concerns; and Environmental Concerns - With a "no further action status". The maps included in the database report illustrate the different statuses of sites and their proximity to the Subject Property.
Environmental Concerns – "Active" are those sites that have a citation, or some other listing that warrants special attention. Possible REC, or "Controlled" REC (CREC).
Environmental Concerns – "no further action" are those sites that cited, but have been closed to the satisfaction of the regulatory agencies. They are not labeled "closed" because they still operate in the manner that caused their listing in the first place. Possible "Historic" REC (HREC).
Environmental Concerns - "closed" are those sites that have met their regulatory requirements and no longer operate in the manner that caused their listing in the first place. Possible HREC.

details of the databases searched are presented in the database report included as Appendix 3. Below, if provided, we list "active" sites ("NFA" or "closed" for LUFT sites within a eighth of a mile as well), as these are the sites of potential concern. Other "NFA" or "closed" sites have met their regulatory obligations and should not be a problem in the future from their present cleanup. Following each table, if generated, we summarize the information on referenced sites as they relate to potentially affecting the Subject Property. Additional regulatory information, gathered during this Phase I that updates the database, is also presented here. A complete list of "active", "NFA", or "closed" sites, "hazardous substance" listed sites, and "operating permit" listed sites is included in the Radius Map™ Report with GeoCheck® in Appendix 3.

Based on the information in the EDR database for this search interval, our site reconnaissance, and our understanding of the area, the Subject Property outward to ⅛ of a mile had no listings for LUST or SLIC. All listings within this radius are hazardous substance lists, which are not environmental concerns. A complete list of "active", "NFA", or "closed" sites, "hazardous substance" listed sites, and "operating permit" listed sites is included in the database search report in Appendix 3.

3.4 - ONE-EIGHTH MILE TO ONE-QUARTER MILE RADIUS SURVEY

Within this search radius, there is 1 MIN classified as being of environmental concern, 2 MINs have operating permits, and 8 MINs were on hazardous substance lists.

Table 3.1 – Listed Sites Between ⅛ Mile and ¼ Mile

MIN	Name	Address	Dir	Grad	Database	Status
E15	SF SEAPLANES TOURS	240 2 REDWOOD HWY	W	D	LUST	CLOSED

Notes: MIN = map index number, Dir = direction from site, Grad = gradient, LUST = leaking underground storage tanks, CLOSED = met regulatory requirements for closure.

Based on the information in the EDR database for this search interval, and our site reconnaissance, there are no listed sites that pose a threat to the Subject Property. Following each table, if generated, we summarize the information on referenced sites as they relate to potentially affecting the Subject Property. Additional regulatory information, gathered during this Phase I that updates the database, is also presented here. A complete list of "active", "NFA", or "closed" sites, "hazardous substance" listed sites, and "operating permit" listed sites is included in the Radius Map™ Report with GeoCheck® in Appendix 3.

3.5 - ONE-QUARTER MILE TO ONE-HALF MILE RADIUS SURVEY

Within the search radius there is 8 MINs classified as being of environmental concern, 16 MINs having an operating permit, and 90 MINs on hazardous substance lists. Due to the distance from, and the unlikely event that these sites would materially affect the Subject Property, they are not presented in the text. The details of the database search are presented in the Radius Map™ Report with GeoCheck® included as Appendix 3.

3.6 – ONE-HALF MILE TO ONE MILE RADIUS SURVEY

Within the search radius there are 17 MINs classified as being of environmental concern, 13 MINs was listed as having an operating permit, and 44 MINs were on hazardous substance lists. Again, due to the distance from, and the unlikely event, if sites were listed, they would materially affect the Subject Property; they are not presented in the text. The details of the database search are presented in the Radius Map™ Report with GeoCheck® included as Appendix 3.

3.8 - UNMAPPED SITES

There were thirty-nine (39) unmapped sites: HAZNET (31), UST (3), RCRA-SQG (3), EMI (2), CAL FID UST (2), SWEEPS UST (2), and NPDES (1). Three (3) sites had multiple database listings.

4.0 - HISTORICAL INFORMATION REVIEW

4.1 - INTRODUCTION

As part of our research, we also performed a search of records. This search included:

- Historical topographic maps;
- Historic Sanborn® maps;
- Historical aerial photographs;
- A City Directory;
- An Environmental Liens and AUL Report,
- A Property Tax Report, and
- A Building Permits Report.

4.2 – HISTORICAL TOPOGRAPHIC MAPS

Eight historic topographs were reviewed and presented in Appendix 4 from 1897 to 1995. Those reviewed and attached to this report were 1897, 1947, 1950, 1954, 1968, 1980, 1993 and 1995. They were:

- The Tamalpais Quadrangle (1897, 1947 and 1950), and
- The San Rafael Quadrangle (1954, 1968, 1980, 1993 and 1995).

They show the area developing over time as a mixed residential/commercial area. In the 1954 topograph, residential units appear to be built in the vicinity, but the seminary is not shown. In 1968, the seminary area has buildings on it, and the surrounding are continues to develop through 1995.

4.3 - SANBORN® MAPS

Sanborn Maps were not available for this property. The certification of the Sanborn Maps reviewed is included as Appendix 5.

4.4 - HISTORICAL AERIAL PHOTOGRAPHS

Eleven aerial photographs were reviewed and are presented in Appendix 6 from 1946 to 2012. The years reviewed were 1946, 1956, 1968, 1974, 1982, 1987, 1993, 2005, 2009, 2010 and 2012. They confirmed what the other historic sources show. The 1956 aerial shows the beginning of

development of the seminary. The surrounding area began to develop after 1946 and continues from there. The Subject Property was present in the 1968 aerial.

4.5 – CITY DIRECTORY

Most searches span circa-1920 to the present. The city directory for the Subject Property is between 1975 and 2013. The City Directory indicates the Subject Property was listed on the City Directory. Documentation of the City Directory search is included as Appendix 7.

4.6 – ENVIRONMENTAL LIENS AND AUL REPORT

There was one deed found for this Subject Property. Below is a description of the deeds. A copy of the report is included as Appendix 8.

Deed 1:
According to the Marin County Assessor, the current owner of the subject property is Golden Gate Baptist Theological Seminary. Records were searched at the Marin County Recorder's Office back to 1980. No conveyance was found of record for the subject property.

Legal Description: All that certain piece or parcel of land containing 50 acres, more or less, being a portion of Designated Remainder III, as shown on the Map of Seminary Ridge-Phase I, as filed 07/10/1990 in Book 20 of Maps, at Page 84 as Instrument No. 1990-0040468, situate and lying in the County of Marin, State of California.

Legal Current Owner: Golden Gate Baptist Theological Seminary **Property Identifiers:** 043-261-25

Deed 2:
Type of Deed: Quitclaim Deed Title is vested in: Golden Gate Baptist Theological Seminary Title received from: Richardson Bay Sanitary District, a public corporation Deed Dated: 09/17/1991 Deed Recorded: 09/24/1991 Instrument: 91-061081 Land Record Comments: Records were searched at the Marin County Recorder's Office back to 1980. No other conveyance was found of record for the subject property.

Legal Description: All that certain piece or parcel of land containing 23.61 acres, more or less, being a portion of Designated Remainder III, as shown on the Map of Seminary Ridge-Phase I, as filed 07/10/1990 in Book 20 of Maps, at Page 84 as Instrument No. 1990-0040468, situate and lying in the County of Marin, State of California.

Legal Current Owner: Golden Gate Baptist Theological Seminary **Property Identifiers:** 043-261-26

Deed 3:
According to the Marin County Assessor, the current owner of the subject property is Golden Gate Baptist Theological Seminary. Records were searched at the Marin County Recorder's Office back to 1980. No conveyance was found of record for the subject property.

Legal Description: All that certain piece or parcel of land containing 22.5 acres, more or less, being a portion of Parcel A, as shown on the Map of Seminary Ridge-Phase I, as filed 07/10/1990 in Book 20 of Maps, at Page 84 as

Instrument No. 1990- 0040468, being portions of Lots 315 and 316 of Tide Land Commissioners Map No. One, situate and lying in the County of Marin, State of California.

Legal Current Owner: Golden Gate Baptist Theological Seminary **Property Identifiers:** 043-262-03

Deed 4:

According to the Marin County Assessor, the current owner of the subject property is Golden Gate Baptist Theological Seminary. Records were searched at the Marin County Recorder's Office back to 1980. No conveyance was found of record for the subject property.

Legal Description: All that certain piece or parcel of land containing 3.43 acres, more or less, being a portion of Parcel A, as shown on the Map of Seminary Ridge-Phase I, as filed 07/10/1990 in Book 20 of Maps, at Page 84 as Instrument No. 1990- 0040468, situate and lying in the County of Marin, State of California.

Legal Current Owner: Golden Gate Baptist Theological Seminary **Property Identifiers:** 043-262-06

Deed 5:

Type of Deed: Quitclaim Deed Title is vested in: Golden Gate Baptist Theological Seminary Title received from: Richardson Bay Sanitary District, a public corporation Deed Dated: 12/13/1990 Deed Recorded: 12/18/1990 Instrument: 90-71909 Land Record Comments: Records were searched at the Marin County Recorder's Office back to 1980. No other conveyance was found of record for the subject property.

Legal Description: All that certain piece or parcel of land containing 3.96 acres, more or less, being a portion of Parcel B of Designated Remainder I, as shown on the Map of Seminary Ridge-Phase I, as filed 07/10/1990 in Book 20 of Maps, at Page 84 as Instrument No. 1990-0040468, situate and lying in the County of Marin, State of California.

Legal Current Owner: Golden Gate Baptist Theological Seminary **Property Identifiers:** 043-401-05

Deed 6:

According to the Marin County Assessor, the current owner of the subject property is Golden Gate Baptist Theological Seminary. Records were searched at the Marin County Recorder's Office back to 1980. No conveyance was found of record for the subject property.

Legal Description: All that certain piece or parcel of land containing 1.54 acres, more or less, being Parcel 26, as shown on the Map of Seminary Ridge-Phase I, as filed 07/10/1990 in Book 20 of Maps, at Page 84 as Instrument No. 1990-0040468, situate and lying in the County of Marin, State of California.

Legal Current Owner: Golden Gate Baptist Theological Seminary **Property Identifiers:** 043-401-10

Deed 7:

According to the Marin County Assessor, the current owner of the subject property is Golden Gate Baptist Theological Seminary. Records were searched at the Marin County Recorder's Office back to 1980. No conveyance was found of record for the subject property.

Legal Description: All that certain piece or parcel of land containing 16.08 acres, more or less, being a portion of Parcel 25, Designated Remainder IV, as shown on the Map of Seminary Ridge-Phase I, as filed 07/10/1990 in

Book 20 of Maps, at Page 84 as Instrument No. 1990-0040468, situate and lying in the County of Marin, State of California.

Legal Current Owner: Golden Gate Baptist Theological Seminary **Property Identifiers:** 043-401-16

Deed 8:

According to the Marin County Assessor, the current owner of the subject property is Golden Gate Baptist Theological Seminary. Records were searched at the Marin County Recorder's Office back to 1980. No conveyance was found of record for the subject property.

Legal Description: All that certain piece or parcel of land containing 1.63 acres, more or less, being Parcel 27, as shown on the Map of Seminary Ridge-Phase I, as filed 07/10/1990 in Book 20 of Maps, at Page 84 as Instrument No. 1990-0040468, situate and lying in the County of Marin, State of California.

Legal Current Owner: Golden Gate Baptist Theological Seminary **Property Identifiers:** 043-402-03

Deed 9:

According to the Marin County Assessor, the current owner of the subject property is Golden Gate Baptist Theological Seminary. Records were searched at the Marin County Recorder's Office back to 1980. No conveyance was found of record for the subject property.

Legal Description: All that certain piece or parcel of land containing 0.760 acres, more or less, being Parcel C, Designated Remainder II, as shown on the Map of Seminary Ridge-Phase I, as filed 07/10/1990 in Book 20 of Maps, at Page 84 as Instrument No. 1990-0040468, situate and lying in the County of Marin, State of California.

Legal Current Owner: Golden Gate Baptist Theological Seminary **Property Identifiers:** 043-402-06

Environmental Liens

Found ☐ **Not Found** ☑

Other Activity And Use Limitations (AULs)

Found ☐ **Not Found** ☑

4.7 – PROPERTY TAX MAP REPORT

The Property Tax Map Report is included as Appendix 9. The parcel APN is **#: #043-261-25, 043-261-26, 043-262-03, 043-262-06, 043-401-05, 043-401-10, 043-401-16, 043-402-03, 043-402-06,** and the parcel map is in Appendix 9.

4.8 – BUILDING PERMIT REPORT

The Building Permit Report reviewed all available building permit records. The report indicted

that building permits were not found for the Subject Property, but were issued for adjacent properties between 1972 and 2012. None were for hazardous waste transport or storage.

The report is included as Appendix 10.

5.0 - GEOLOGY AND HYDROGEOLOGY

5.1 - INTRODUCTION

TCG reviewed readily available regional and local geologic and hydrogeologic information. The results of that review are briefly described below. The information reviewed included data in Appendix 3, in the Physical Setting Appendix to the Radius Map™ Report with GeoCheck® as well as other referenced material, including Appendix 11 – Vapor Encroachment Condition (VEC) screen report.

5.2 - LOCAL GEOLOGY AND HYDROGEOLOGY

The Subject Property is located north of the San Francisco Bay. The Subject Property is in a mixed residential/some commercial area of Mill Valley, district of Strawberry in Marin County with listed properties up-gradient and down-gradient. The shallow subsurface is made of alluvial deposits (clayey silts to silty sands in nature): these fine-grained soils go to approximately 6 - 20 feet below grade (fbg) according to location. Weathered and unweathered bedrock underlie the whole area at various depths and various thicknesses (Norris & Webb, 1990). The area topography is relatively hilly sloping north to south and from the subject property downward east and west (see Physical Setting Appendix to the Radius Map™ Report with GeoCheck®).

Groundwater in the area is typically a layered aquifer system with the shallowest being an unconfined aquifer (Water Table). Below this layer there are multiple layers that are considered semi-confined to confined aquifers. The shallowest aquifer that would most directly influence the Subject Property is affected by topography, seasonal rainfall, and pumping activities (Norris & Webb, 1990).

The Subject Property does not sit on any active faults, but to the west is the San Andreas Fault, to the southeast is the Hayward Fault and to the northeast is the Rogers Creek Fault, all of which can cause earth movement.

5.3 - GROUNDWATER WELLS IN THE AREA

TCG reviewed available information for groundwater wells found in the Physical Setting Appendix of Radius Map™ Report with GeoCheck®. The results of that review are briefly described below. The information reviewed is in the Physical Setting Appendix of the Radius Map™ Report with GeoCheck® included in Appendix 3.

No groundwater monitor wells were found on the Subject Property.

No wells were found the Federal database researched: **FEDERAL USGS WELL INFORMATION**.

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
None		

No wells were found the Federal database researched: **FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION**.

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
None		

No wells were found the State database researched **STATE DATABASE WELL INFORMATION**.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
None		

The groundwater flow, according to AQUIFLOW[10], in the area is variable, while regionally it is southwesterly, toward the San Francisco Bay. Pumping wells, topography and/or seasonal rainfall can all retard/alter groundwater flow. Nothing out of the ordinary was seen.

5.4 – RADON

A review of the radon results provided in the Physical Setting Appendix of the Radius Map™ Report with GeoCheck® indicates that radon standards (Federal and State) are not exceeded and radon in the area is not a problem. The (Zip Code: 94941) average Living Area 1st floor activity is 0.450 Pico Curies/Liter (pCi/L), which the USEPA is considering this Zone 3 (<2 pCi/L - Federal EPA) indoor average level – first floor (EDR, 2014). The radon information is in Physical Setting appendix of the Radius Map™ Report with GeoCheck® included as Appendix 3.

[10] AQUIFLOW is a modeling program used to interpret groundwater flow direction and gradient.

5.5 – VAPOR ENCROACHMENT SCREEN REPORT

Fourteen (14) sites were examined in the Vapor Encroachment Concern (VEC) Screen Report. A review of the VEC Screen report (Appendix 11) indicated that the subject property address: was not found on any databases. One-listed (1) site was found within 528 feet[11], and the other thirteen (13) listed sites were found between 528 feet and 1760 feet[12].

Of the fourteen (14) listed sites, all were ruled out as a Vapor Encroachment Concern (VEC) since they are "not an environmental concern listing", closed, or outside 0.1 of a mile threshold, because they down-gradient. Chemicals of concern (COC) are not likely to be a vapor threat to the Subject Property. The report is included as Appendix 11.

[11] First threshold in the VEC calculations.
[12] Second threshold in the VEC calculations.

6.0 – OBSERVATIONS, CONCLUSIONS, AND RECOMMENDATIONS

6.1 - OBSERVATIONS

6.1.1 - General Environmental Inspection

During the general environmental inspection, we noted any evidence of contamination or the presence of structures that would lead to suspicion of contamination.

Inspection of the Subject Property revealed no "Recognized Environmental Concerns" (RECs), no "Controlled Recognized Environmental Concerns" (CRECs) and no "Historical Recognized Environmental Concerns" (HRECs), and there were issues of potential concern, as detailed in the Table below. The potential issues were non-Phase I issues that are presented here for convenience.

Table 6.1 - Items Noted in Addresses

Address	Non-REC	REC	CREC	HREC
Golden Gate Baptist Seminary	Suspect Asbestos Containing Material (ACM) Suspect Lead Based Paint (LBP) and Lead Containing Paint (LCM) Suspect Mercury Switches and Fluorescent Tubes Suspect PCB Light Ballasts	NONE	NONE	NONE
Notes: REC = Recognized Environmental Condition, CREC = Controlled Recognized Environmental Condition [subset of REC], HREC = Historical Recognized Environmental Condition				

The adjacent parcels are used as:

- residential/commercial developments to the north, south, east, and west.

During this inspection, nothing out of the ordinary was observed. An Area/Neighborhood Drive-By was also performed on 09 May 2014. During this inspection, nothing out of the ordinary or of concern was observed. None of the listed sites within ⅓ of a mile, which is the outer radius for the Vapor Encroachment Concern (VEC) report, are considered a REC, CREC[13], or HREC by AAI, or ASTM.

6.1.2 - Database Search and Review

6.1.2.1 - Within 1/8 Radius

Based on the information in the EDR database for this search interval, our site reconnaissance, and our understanding of the area, the Subject Property outward to ⅛ of a mile had no listings for LUST or SLIC. All listings within this radius are hazardous substance lists, which are not environmental concerns. A complete list of "active", "NFA", or "closed" sites, "hazardous substance" listed sites, and "operating permit" listed sites is included in the database search report in Appendix 3.

6.1.2.2 - Between 1/8 and 1/4 Mile Radius

Based on the information in the EDR database for this search interval, and our site reconnaissance, there are no listed sites that pose a threat to the Subject Property. Following each table, if generated, we summarize the information on referenced sites as they relate to potentially affecting the Subject Property. Additional regulatory information, gathered during this Phase I that updates the database, is also presented here. A complete list of "active", "NFA", or "closed" sites, "hazardous substance" listed sites, and "operating permit" listed sites is included in the Radius Map™ Report with GeoCheck® in Appendix 3.

6.1.2.3 - Between 1/4 and 1/2 Mile Radius

Within the search radius there is 8 MINs classified as being of environmental concern, 16 MINs having an operating permit, and 90 MINs on hazardous substance lists. Due to the distance from, and the unlikely event that these sites would materially affect the Subject Property, they are not presented in the text. The details of the database search are presented in the Radius Map™ Report with GeoCheck® included as Appendix 3.

[13] CREC is a new category under REC, where the site is undergoing mitigation supervised by an agency.

6.1.2.4 - Between 1/2 and 1 Mile Radius

Within the search radius there are 17 MINs classified as being of environmental concern, 13 MINs was listed as having an operating permit, and 44 MINs were on hazardous substance lists. Again, due to the distance from, and the unlikely event, if sites were listed, they would materially affect the Subject Property; they are not presented in the text. The details of the database search are presented in the Radius Map™ Report with GeoCheck® included as Appendix 3.

6.1.2.5 - Unmapped Sites

There were thirty-nine (39) unmapped sites: HAZNET (31), UST (3), RCRA-SQG (3), EMI (2), CAL FID UST (2), SWEEPS UST (2), and NPDES (1). Three (3) sites had multiple database listings.

6.1.3 - Historical Information Review

The historical information[14] review was Topographic Maps, Aerial Photographs, a City Directory, Environmental Liens, Property Tax Map and Building Permits. There was good correlation between each of these items and nothing out of the ordinary was seen. The EDR reports for each of these sources are attached in Appendices. Sanborn Maps were not found by EDR, but this did not hamper our ability to review the address.

6.1.4 - Geology and Hydrogeology

The geology of the area indicates that down to approximately 6 - 20 fbg is a fine-grained soil, depending on location on the Subject Property. Weathered and unweathered bedrock underlie this. The Subject Property does not sit on any active faults, but to the west is the San Andreas Fault, to the southeast is the Hayward Fault and to the northeast is the Rogers Creek Fault, all of which can cause earth movement. The shallow groundwater in the area appears to be variable (regional flow toward bay) and is a water table condition that is affected by topography, seasonal rainfall, and/or pumping wells. As the VEC report indicates, there is no direct evidence of vapor intrusion at the Subject Property, and the fourteen (14) sites listed as possible have been dismissed in the VEC report. A review of the radon results provided in the Physical Setting Appendix of the Radius Map™ Report with GeoCheck® indicates that radon in the area is not a problem.

[14] Sanborn maps were not available.

6.2 - CONCLUSIONS

There is no direct environmental evidence with regard to the subsurface at the Subject Property or vicinity of impact. The Subject Property is currently a Baptist Seminary, and previous use was vacant land.

6.3 - RECOMMENDATIONS

We are not recommending any further investigation. However, during any renovation or demolition activities, we recommend:

- Following all ACM and LCM regulations and requirements with regard to identifying, handling, and disposal, and
- Following all HAZMAT regulations and requirements with regard to identification, characterization, waste and debris disposal, and recycling.

7.0 - REFERENCES

ASTM, 2005, *Phase I Environmental Site Assessment Process*, ASTM Designation: E1527-05.

_____, 2000, *Transaction Screening Process*, ASTM Designation: E1528.

_____, 2002, *Phase II Environmental Site Assessment Process*, ASTM Designation: E1903.

California Code of Regulations, Title 8; Department of Industrial Relations - California Occupational Safety and Health Regulations (Title 8).

_____, Title 22: Social Security; Division 4: Environmental Health and Division 4.5: Chapter 11: Identification of Hazardous Waste; article 3: Characterization of Hazardous Waste (Title 22).

Code of Federal Regulations, Title 29; part 1910: Occupational Safety and Health Standards (29 CFR).

_____, Title 40; part 261; subpart B - Criteria for identifying the Characteristics of Hazardous Waste and for Listing Hazardous Waste, and subpart C - Characteristics of Hazardous Waste (40 CFR).

Designated Level Methodology for Waste Classification and Cleanup Level Determination; California Regional Water Quality Control Board, Central Valley Region (Marshack Document).

Dragun & Chiasson, 1991, Elements in North American Soils.

Environmental Data Resources, Inc. (EDR), 2014, *EDR Radius Map Report™ with GeoCheck®*, **Baptist Seminary**, Seminary Drive/East Strawberry Drive, Mill Valley, CA 94941, Inquiry Number: 3938849.2s, May 09, 2014.

_____, 2014, *Certified Sanborn® Map Report*, **Baptist Seminary**, Seminary Drive/East Strawberry Drive Mill Valley, CA 94941, Inquiry Number: 3938849.3, May 09, 2014.

_____, 2013, *The EDR-City Directory Abstract*, **Baptist Seminary**, Seminary Drive/East Strawberry Drive Mill Valley, CA 94941, Inquiry Number: 3938849.5, May 09, 2014.

_____, 2013, *The EDR – Historical Topographic Map Report*, **Baptist Seminary**, Seminary Drive/East Strawberry Drive Mill Valley, CA 94941, Inquiry Number: 3938849.4, May 09, 2014.

_____, 2013, *The EDR Building Permit Report*, **Baptist Seminary**, Seminary Drive/East Strawberry Drive Mill Valley, CA 94941, Inquiry Number: 3938849.8, May 09, 2014.

_____, 2013, *The EDR Tax Map Report*, 3723 **Baptist Seminary**, Seminary Drive/East Strawberry Drive Mill Valley, CA 94941, Inquiry Number: 3938849.6, May 09, 2014.

_____, 2013, *The EDR Environmental Liens and AUL Report*, **Baptist Seminary**, Seminary Drive/East Strawberry Drive Mill Valley, CA 94941, Inquiry Number: 3938849.3, May 20, 2014.

_____, 2013, *The EDR – Aerial Photo Decade Package*, **Baptist Seminary**, Seminary Drive/East Strawberry Drive Mill Valley, CA 94941, Inquiry Number: 3938849.12, May 13, 2014.

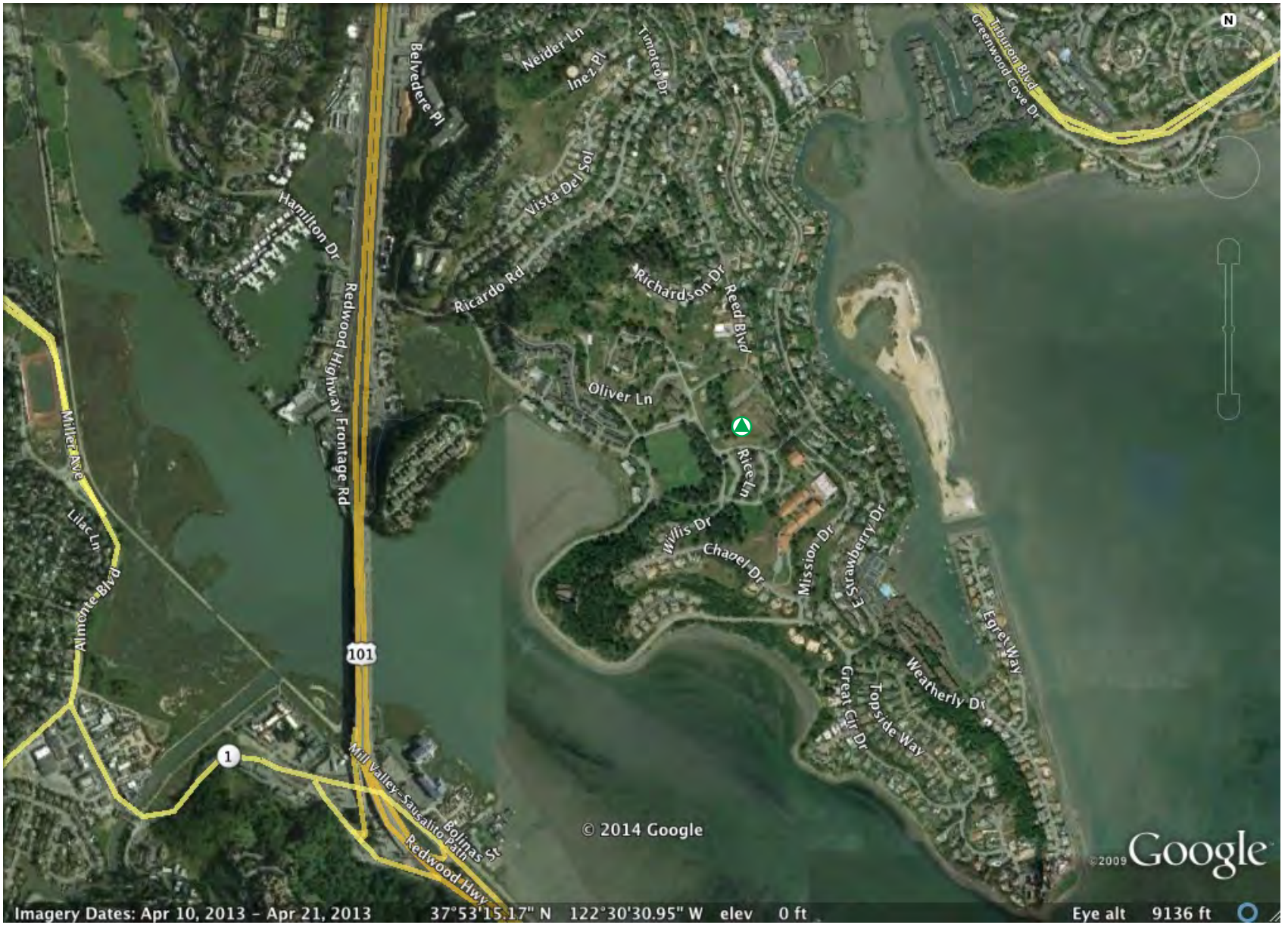
_____, 2013, *The EDR Vapor Encroachment Screen Report*, **Baptist Seminary**, Seminary Drive/East Strawberry Drive Mill Valley, CA 94941, Inquiry Number: 3938849.9s, May 26, 2014.

Environmental Protection Agency, 2004, *Test Methods for Evaluating Solid Waste*, Physical/Chemical Methods.

Norris, Robert M, & Webb, Robert W., 1990, *Geology of California*, Second Edition

Scott, 1995, Background Metal Concentrations in Soil in Northern Santa Clara County, California.

Figures



= Target Property

THE CONSULTING GROUP
394 Cecilia Way, Tiburon, CA 94920
Tel: 415.381.2560 / Fax: 415.381.1741

Job No.	147301
Date	26 May 2014
Drawn by	SL
Rev	SL
Apprvd	SL

Site Location

Project

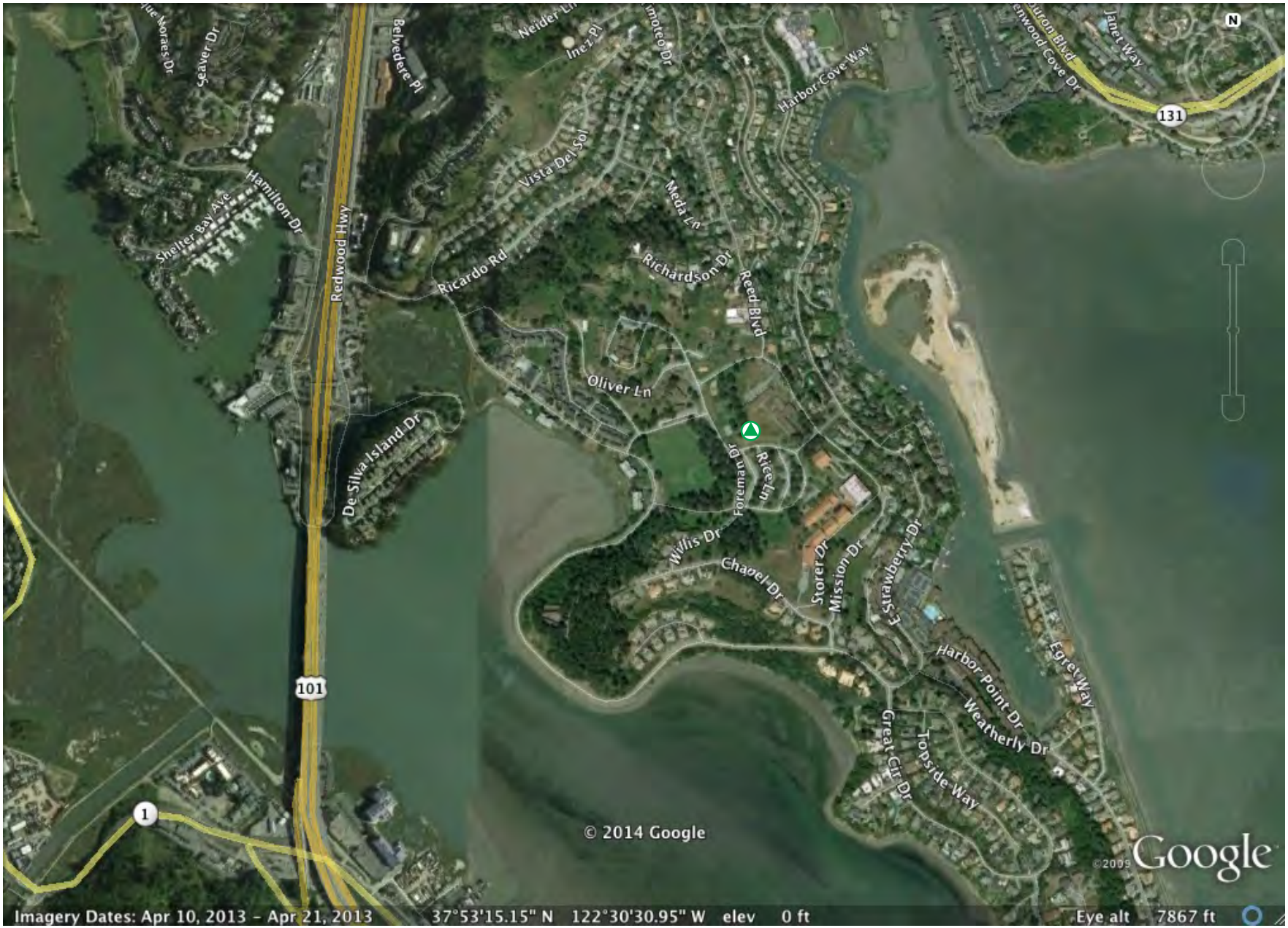
Phase I - Environmental Site Assessment
Golden Gate Baptist Seminary

for: Mr. Bruce Jones
North Coast Land Holdings, LLC
San Rafael, CA

N

Figure

1



= Target Property

THE CONSULTING GROUP
394 Cecilia Way, Tiburon, CA 94920
Tel: 415.381.2560 / Fax: 415.381.1741

Job No.	147301
Date	26 May 2014
Drawn by	SL
Rev	SL
Apprvd	SL

Site Vicinity

Project

Phase I - Environmental Site Assessment
Golden Gate Baptist Seminary

for: Mr. Bruce Jones
North Coast Land Holdings, LLC
San Rafael, CA

N

Figure

2

= Target Property

THE CONSULTING GROUP
394 Cecilia Way, Tiburon, CA 94920
Tel: 415.381.2560 / Fax: 415.381.1741

Job No.	147301
Date	26 May 2014
Drawn by	SL
Rev	SL
Apprvd	SL

Site Layout

Project

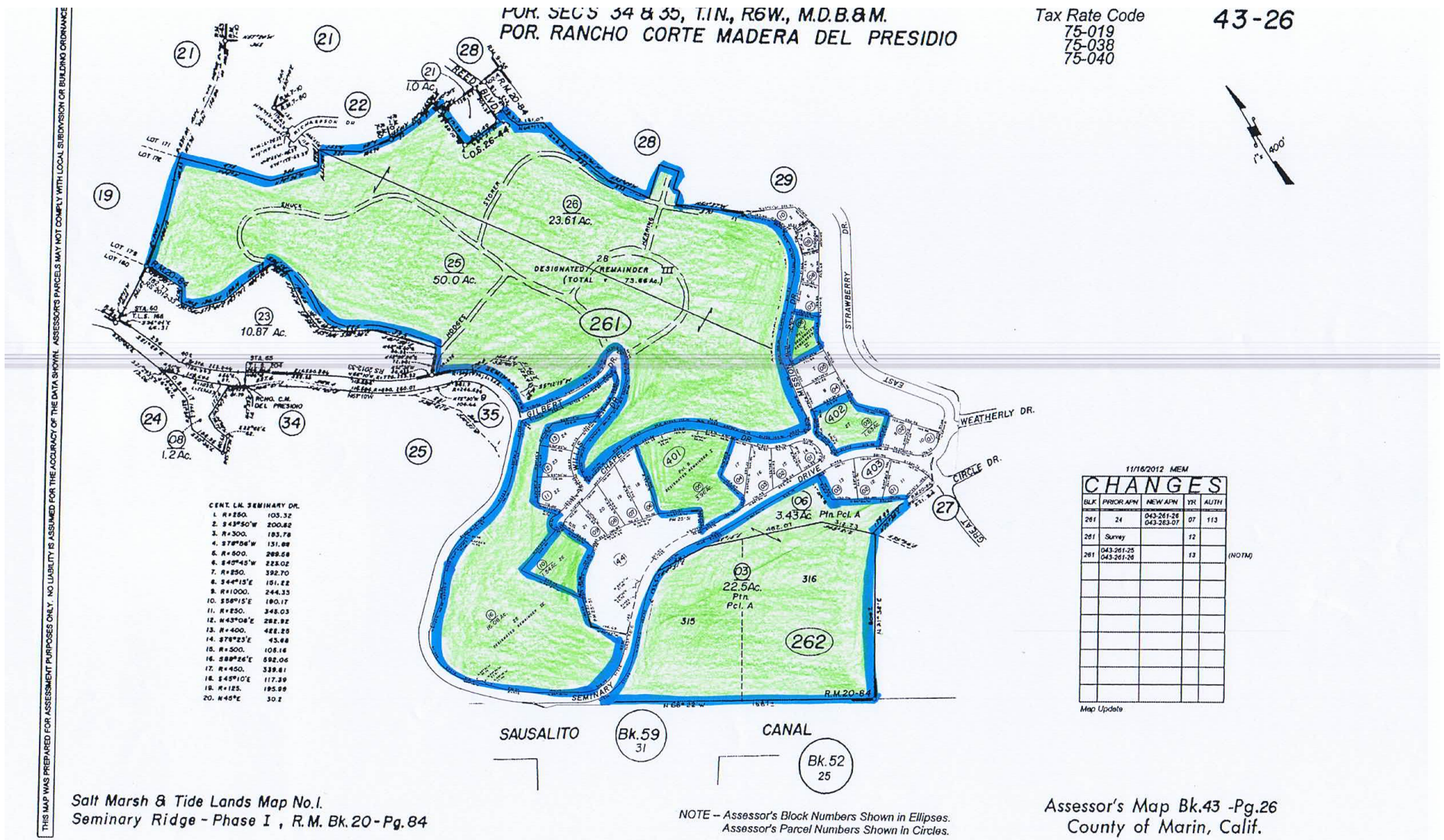
Phase I - Environmental Site Assessment
Golden Gate Baptist Seminary

for: Mr. Bruce Jones
North Coast Land Holdings, LLC
San Rafael, CA

N

Figure

3



Shaded = Area of Phase I - ESA

THE CONSULTING GROUP
394 Cecilia Way, Tiburon, CA 94920
Tel: 415.381.2560 / Fax: 415.381.1741

Job No.	147301
Date	26 May 2014
Drawn by	SL
Rev	SL
Apprvd	SL

Client-Supplied APN Map

Project

Phase I - Environmental Site Assessment
Golden Gate Baptist Seminary

for: Mr. Bruce Jones
North Coast Land Holdings, LLC
San Rafael, CA

N

Figure

4

LINK TO THIS MAP

GEOTRACKER

LAYERS

- ☒ SIGNIFIES A CLOSED SITE
- ☑ Leaking Underground Tank (LUST) Cleanup Sites
- ☑ Other Cleanup Sites
- ☑ Land Disposal Sites
- ☑ Military Sites
- ☑ WDR Sites
- ☑ Irrigated Lands Regulatory Program
- ☑ Permitted Underground Storage Tank (UST) Facilities
- ☑ Monitoring Wells*
- * ZOOM IN TO SEE MWS
- ☑ DTSC Cleanup Sites
- ☑ DTSC Haz Waste Permit

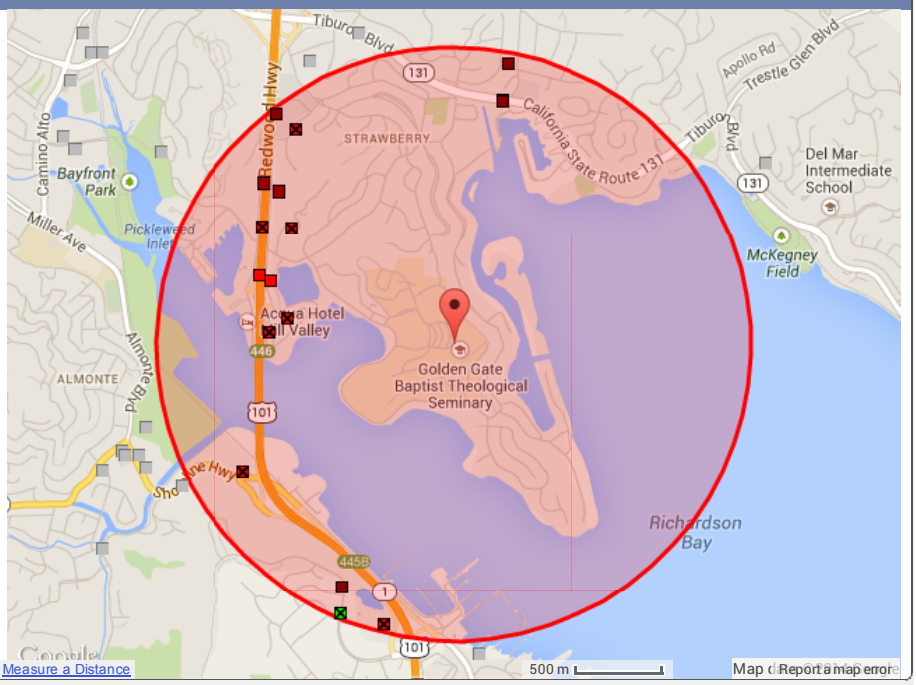
MAP SIZE

640x480

OPTIONS

☑ Site List - EXPORT TO EXCEL

18 Sites



☑ SHOW SITES WITHIN 5280 FEET OF THE FOLLOWING ADDRESS: Baptist Seminary, Mill Valley, CA Go

SITE LIST

	SITE NAME	GLOBAL ID	FAC ID	STATUS	ADDRESS	CITY
■	ALFA INVESTMENTS		600263		570 REDWOOD HWY.	MILL VALLEY
☒	APOLLO CLEANERS	SL0604181210		COMPLETED - CASE CLOSED	160 DONAHUE STREET	MARIN CITY
☒	ARCO # 00524	T0604100012		COMPLETED - CASE CLOSED	789 OLD REDWOOD HWY	MILL VALLEY
■	ARCO #524		600004		789 REDWOOD HWY.	MILL VALLEY
☒	CALTRANS MANZANITA FACILITY	T0604100296		COMPLETED - CASE CLOSED	40 SHORELINE HWY	MILL VALLEY
☒	EXXON	T0604100046		COMPLETED - CASE CLOSED	595 REDWOOD HWY	MILL VALLEY
☒	FLEA MARKET PROPERTY	T0604100332		COMPLETED - CASE CLOSED	100 DONAHUE ST	MARIN CITY
■	MARIN CAR WASH	T0604100066		OPEN - SITE ASSESSMENT	584 REDWOOD HWY	MILL VALLEY
■	MARIN COUNTY - MARIN CITY		600277		850 DRAKE AVE.	MARIN CITY
☒	MILL VALLEY IMPORTS	T0604100276		COMPLETED - CASE CLOSED	900 REDWOOD HWY	MILL VALLEY
☒	REDWOOD OIL COMPANY TEXACO	T0604100110		COMPLETED - CASE CLOSED	570 REDWOOD HWY	MILL VALLEY
☒	SAN FRANCISCO SEAPLANES TOURS	T0604100290		COMPLETED - CASE CLOSED	240 2 REDWOOD HWY	MILL VALLEY
■	SEWERAGE AGENCY OF SOUTHERN MARIN		600236		241 TIBURON BLVD.	TIBURON

MAP AN ADDRESS: Go!

http://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=Baptist+Seminary%2C+Mill+Valley%2C+CA 1/1

(geotracker, 2014)

THE CONSULTING GROUP
394 Cecilia Way, Tiburon, CA 94920
Tel: 415.381.2560 / Fax: 415.381.1741

Job No.	Date	Drawn by	Rev.	Apprvd.
140203zr	12 March 2014	SL	SL	SL

Project
Geotracker Map - 5280 ft.
Phase I - Environmental Site Assessment
Golden Gate Baptist Seminary
for: Mr. Bruce Jones
North Coast Land Holdings, LLC
San Rafael, CA

Figure
5

Appendix 1 - Environmental Inspection Form

ENVIRONMENTAL INSPECTION FORM

INSPECTION LOCATION

Property Address:	**Seminary Blvd**
City/County:	**Mill Valley / Marin**
State/Zip:	**California / 94941**
Legal Description:	**See Environmental Liens**
Parcel Number:	**APNs: 043-261-25, 043-261-26, 043-262-03,043-262-06, 043-401-05, 043-401-10, 043-401-16,043-402-03, 043-402-06**
Property Is:	☐ Vacant Land ☒ Improved
Occupied By Whom:	**Golden Gate Baptist Seminary**
Describe:	**Adjacent to Route 101**
Report Prepared for:	**Bruce Jones**
Environmental Inspector:	**Sherwood Lovejoy, Jr.**
Date:	**05/09/14**

PROPERTY DESCRIPTION & ANALYSIS

Current Use of Property:	☒ Residential	☒ Commercial	☐ Industrial	
	☐ Undeveloped Land	☐ Other:		
Past Property Use (if known):	☐ Residential	☐ Commercial	☐ Industrial	
	☒ Undeveloped Land	☐ Other:		
Past Tenants Business:	1. **Vacant Lot**			
Time at Location:	**Til 1956, when development as seminary began (aerial photo)**			
	2.			
Time at Location:				
	3.			
Time at Location				
Current Tenants Business:				
Time at Location:				

Comments:

Seminary began development in 1956

GENERAL FIELD OBSERVATIONS

Subject Property:

Were there any physical signs of the following observed on the property? ☒ Yes ☐ No

☐ Underground Storage Tanks	☐ Streams, Lakes or ponds	☒ Lead Paint
☐ Aboveground Storage Tanks	☐ Storage Buildings/Rooms	☐ Unlabeled Drums
☐ Stained Soil	☐ Discarded Batteries	☒ Asbestos
☐ Vegetation Damage	☐ Oil/Gas Drums	☐ Groundwater wells
☐ Oily Sheens on Water	☐ Septic System	☐ Hydraulic Lifts
☐ Hydraulic Elevators	☐ Soil Borings	☐ Generator

Adjacent Property:

Were there any physical signs of the following observed on the property? ☒ Yes ☐ No

☐ Underground Storage Tanks	☐ Streams, Lakes or ponds	☒ Lead Paint
☐ Aboveground Storage Tanks	☐ Storage Buildings/Rooms	☐ Unlabeled Drums
☐ Stained Soil	☐ Discarded Batteries	☒ Asbestos
☐ Vegetation Damage	☐ Oil/Gas Drums	☐ Groundwater wells
☐ Oily Sheens on Water	☐ Septic System	☐ Hydraulic Lifts
☐ Hydraulic Elevators		

Comments:

Older buildings

STORAGE BUILDINGS/ROOMS, STORAGE TANKS INSPECTION

Storage Buildings/Rooms:

☐ Yes ☒ No Are any buildings or rooms present that may contain or have contained hazardous materials for purposes**?**

☐ Yes ☒ No Is there any indication that hazardous materials/waste are or have been stored on the property?

☐ Yes ☒ No Are there plans for the layout of this facility?

Underground Storage Tanks (UST's):

☐ Yes ☒ No Were any underground storage tanks observed on the property? – **removed already**

☐ Yes ☒ No Did any tanks, if present, contain any materials, liquid or solid?

☐ Yes ☒ No Was any evidence of soil contamination observed around the surface cover of the tanks, if pres the property?

☐ Yes ☒ No Were any chemical plants, manufacturing plants, gas stations or petroleum refining, delivery or facilities observed on surrounding properties?

☐ Yes ☒ No Are there plans for the underground storage tanks, if in use or present in the past?

Aboveground Storage Tanks (AST's):

☐ Yes ☒ No Were any aboveground storage tanks observed on the property? - **generator**

☐ Yes ☒ No Was any evidence of soil contamination observed around the tanks, if present, on the property?

☐ Yes ☒ No Were any chemical plants, manufacturing plants, gas stations or petroleum refining, delivery or facilities observed on surrounding properties?

☐ Yes ☒ No Are there plans for the aboveground storage tanks, if in use or present in the past?

Waste Sites:

☐ Yes ☒ No Is the subject or any neighboring property engaged in storing, transporting or producing chemicals or hazardous substances?

Comments:

WATER RESOURCES INSPECTION

Surface Water:

☐ Yes	☒ No	Are there any surface water bodies on the site or passing through it?
☐ Yes	☒ No	Was there any evidence of contamination on these surface water bodies (odors, sheen, etc)?
☐ Yes	☒ No	Are there plans for the surface water drainage system of this facility?

Groundwater:

☐ Yes	☒ No	Were any groundwater monitoring wells, in use or abandoned, observed on the property?
☐ Yes	☒ No	Was there any evidence of contamination around the well?
☐ Yes	☒ No	Was there any evidence of contamination in the well (odors, sheen, etc.)?
☐ Yes	☒ No	Are there plans for the groundwater system of this facility, if one is or was present?

Drinking Water:

☐ Yes	☒ No	Were any water wells, in use or abandoned, observed on the property?
☐ Yes	☒ No	Are these wells the primary or sole source of drinking water?
☒ Yes	☐ No	Is the property presently on a municipal water system?
☐ Yes	☒ No	Are lead or lead soldered pipes visible on the property?
☐ Yes	☒ No	Are there plans for the drinking water system of this facility?

Septic System:

☐ Yes	☒ No	Was a septic system, in use or abandoned, observed on the property?
☒ Yes	☐ No	Is the property presently on a municipal sewer system?
☐ Yes	☒ No	Are there plans for the septic system of this facility?

Drains:

☐ Yes	☒ No	Are drains present in work areas that could be used for draining liquids from cleaning or f machinery or equipment?
☐ Yes	☒ No	Are the drains full?
☐ Yes	☒ No	Are the drains coated heavily with sludge-type materials?
☐ Yes	☒ No	Are there plans for the drain system of this facility?

Comments:

Groundwater not tested

CHEMICAL, GAS & MINERAL INSPECTION

Asbestos:

- ☒ Yes ☐ No Were signs of asbestos observed on the property?
- ☒ Yes ☐ No Was the structure constructed prior to 1979?
- ☒ Yes ☐ No Were any suspected asbestos containing materials observed; such as sprayed mater fireproofing areas, pipe insulation, floor tiles, etc?

UREA Formaldehyde Foam Insulation (UFFI):

- ☐ Yes ☒ No Was any evidence of Formaldehyde Foam Insulation observed on the property?

Lead Paint:

- ☒ Yes ☐ No Was any visible evidence of peeling, cracking or flaking paint observed?
- ☒ Yes ☐ No Was any visible evidence of lead paint on the ceilings, walls or floors of any structure obse the property?

Pesticides/Herbicides:

- ☐ Yes ☒ No Does it appear pesticides or herbicides have been used in excess of normal use?
- ☐ Yes ☒ No Is the property used for agricultural purposes?
- ☐ Yes ☒ No Are there any noticeable pesticide/herbicide odors?

Fiberglass:

- ☐ Yes ☒ No Is fiberglass observed as an insulator or for any other purpose?
- ☐ Yes ☒ No Is fiberglass observed on any surface that appears worn, where individual fibers are expos condition where release into the air appears likely?

Polychlorinated Biphenyls (PCB's):

- ☒ Yes ☐ No Were any transformers, electrical devices or hydraulic equipment observed on the property lal containing PCBs
- ☐ Yes ☒ No Was there evidence of PCB contamination to the soil, surface water or groundwater observec property?
- ☒ Yes ☐ No Were any fluorescent light ballasts suspected to contain or labeled as containing PCB's observ

Mercury:

- ☒ Yes ☐ No Are there mercury switches present?
- ☒ Yes ☐ No Are there fluorescent tubes present?

Radon:

- ☐ Yes ☒ No Is there reason to suspect that radon may be a problem in the dwelling or in the immediate pr locality?
- ☐ Yes ☒ No Has screening been conducted which indicates that the property may have elevated levels of ra

Comments:

Radon not an issue

GENERAL

☐ Yes ☒ No Are there any conditions present not mentioned above that need to be corrected to remc potential risks?

☐ Yes ☒ No Activities on adjacent properties that pose potential environmental risks to the subject property

SUMMARY & CONCLUSIONS OF INSPECTION

Underground Storage Tanks (UST's):
☒ Acceptable
☐ Suggest Phase II Environmental Audit

Aboveground Storage tanks (AST's):
☒ Acceptable
☐ Suggest Phase II Environmental Audit

Waste Sites:
☒ Acceptable
☐ Suggest Phase II Environmental Audit

Surface Water:
☒ Acceptable
☐ Suggest Phase II Environmental Audit

Groundwater: Not Tested
☒ Acceptable
☐ Suggest Phase II Environmental Audit

Drinking Water:
☒ Acceptable
☐ Suggest Phase II Environmental Audit

Septic System:
☒ Acceptable
☐ Suggest Phase II Environmental Audit

Elevators:
☒ Acceptable
☐ Suggest Phase II Environmental Audit

Asbestos:
☐ Acceptable
☒ Suggest Phase II Environmental Audit

UREA Formaldehyde Foam Insulation (UFFI):
☒ Acceptable
☐ Suggest Phase II Environmental Audit

Lead Paint:
☐ Acceptable
☒ Suggest Phase II Environmental Audit

Pesticides/Herbicides:
☒ Acceptable
☐ Suggest Phase II Environmental Audit

Polychlorinated Biphenyls (PCB's):
☒ Acceptable
☐ Suggest Phase II Environmental Audit

Radon:
☒ Acceptable
☐ Suggest Phase II Environmental Audit

Hydraulic Lifts
☒ Acceptable
☐ Suggest Phase II Environmental Audit

Mercury:
☒ Acceptable
☐ Suggest Phase II Environmental Audit

CERTIFICATION

I certify that to the best of my knowledge and belief the facts and data used and presented in this inspection are true and accurate, based on currently accepted and available information as of the inspection date; I personally inspected the subject property; and I have no undisclosed interest, present or prospective therein.

Addendums are attached and are made a part of this report. Number of pages attached **0**

Sherwood Lovejoy, Jr.
Environmental Assessor

Appendix N

Hydrology & Hydraulic Study

HYDROLOGY AND HYDRAULIC STUDY

FOR

THE SEMINARY

201 SEMINARY DRIVE

MILL VALLEY, CALIFORNIA 94941

Prepared By:
CSW/Stuber-Stroeh Engineering Group, Inc.
45 Leveroni Court
Novato, CA 94949
(415) 883-9850

Prepared:
November 12, 2021

CSW|ST2 File No.:
1.839.00

CSW | ST2

HYDROLOGY AND HYDRAULIC STUDY

FOR

THE SEMINARY

_____

Jed Diaz
R.C.E. No. 90534

Prepared by:
CSW/Stuber-Stroeh Engineering Group, Inc.
45 Leveroni Court
Novato, CA 94949
(415) 883-9850

Prepared:
November 8, 2021

CSW|ST2 File No.:
1.839.00

CSW | ST2

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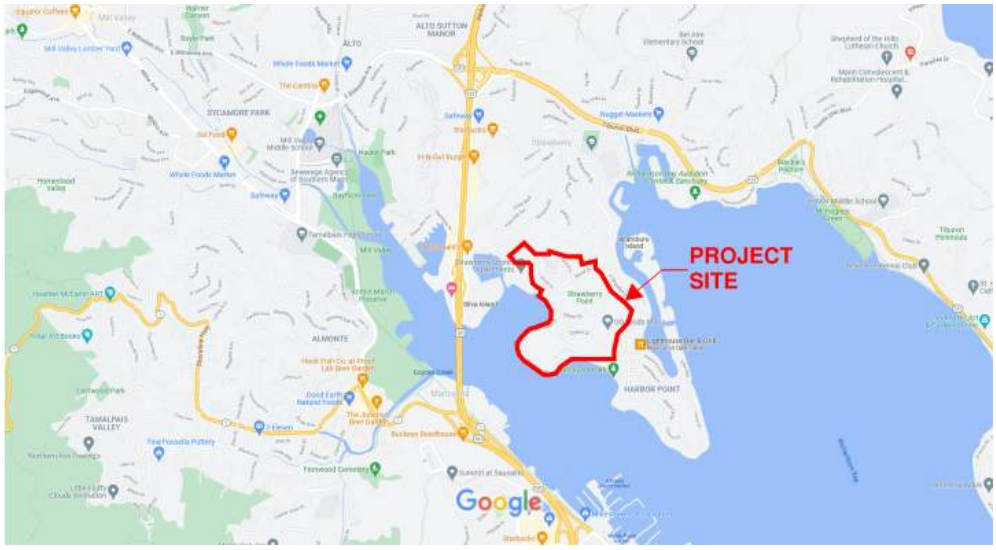
List of Acronyms and Abbreviations

BASMAA	**Bay Area Stormwater Management Agencies Association**
BFE	Base Flood Elevation
CFS	Cubic Feet per Second
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
MS4	Municipal Separate Storm Sewer Systems
NOAA	National Oceanic Atmospheric Administration
SCS	Soil Conservation Service
Tc	Time of Concentration
USGS	United States Geological Survey

1. Introduction

The purpose of this hydrological report is to clarify pre-development and post-development drainage impacts affecting the North Coast Land Holdings project. Post-development are represented in the Improvement Plans prepared by CSW/Stuber-Stroeh Engineering Group, Inc. dated January 31, 2020. . Hydrologic calculations utilize the Rational Method while hydraulic calculations were prepared using Hydraflow Express or the Manning's equation for a given storm event. Analytical findings indicate improvements comply with the County of Marin's standards for flood prevention, drainage, and storm water quality.

FIGURE 1: VICINITY MAP



2. Pre-Project Conditions

The proposed Project is located at the Golden Gate Baptist Theological Seminary (GGBTS), within the Strawberry Point peninsula and surrounded by Richardson Bay, approximately 13 miles north of San Francisco. Specifically, the project site is bounded by Seminary Drive on the west and south; E Strawberry Drive on the east; and private developments on the north. The overall site encompasses 127.3 acres of grass-covered land scattered with trees and the GGBTS campus residences. The subject area encompasses 71.54 acres.

Site topography generally slopes east-west with natural north and southward facing slopes which vary from 2-1/3 horizontal to 1 vertical (1-1/2:1, H:V) to 4:1. There are also localized relatively level knolls within the campus. Existing developments include the Golden Gate Baptist Theological Seminary, which consists of several academic core buildings, and an assortment of residences. Open spaces are hilly with good vegetative cover, good drainage, and scattered with a variety of trees, primarily Monterey Pine.

3. Post-Project Conditions

Project improvements include development and redevelopment of portions of the GGBTS site in general accordance with the approved master plan. Proposed site enhancements include:

- New 20,000-square-foot facility to house a pre-school (3,000 square feet) and fitness center (17,000 square feet)
- Replace a majority of the existing residences and dorm rooms with a mixture of single-family and multi-family residences, and construct new single-family and multi-family residences. A total of 336 residential units are proposed
- New 267,354-square-foot residential care facility that would contain 100 independent living and 44 to 50 assisted living and memory care apartments
- Renovate the Administration Building and add a total of 15,800 square feet of floor area, resulting in a 41,000-square-foot Administration Building
- Demolish the existing maintenance building and construct a new 2,200-square-foot maintenance building in a different location
- Install landscape and hardscape improvements associated with the school campus and the residential development, including parking, playfields and a network of walkways and pedestrian-friendly streets
- Provide open space (approximately 70-percent of the site) and establish a network of trails throughout the project area

4. Analysis

4.1 Criteria

Drainage calculations meet the requirements of Marin County Code of Ordinances 24.04.520 – Hydrologic and Hydraulic Design. Drainage calculations for future storm events apply the 100-year design storm.

The Rational Method is used in conjunction with the Hydrograph Method to model the pre-development and post-development drainage of the site. Runoff coefficients and drainage areas are calculated using AutoCAD. Rainfall intensities are based on NOAA precipitation frequency estimates. Excel and Hydrographs software are utilized to generate runoff quantities from the hydrological information.

4.2 Hydrology

4.2.1. Rational Method

Peak flows are determined using methodology contained within the County of Marin Hydrology Manual, Simplified Instructions, dated 8/2/2000, which specifies that the Rational Method be used to calculate design peak discharge. The Rational Method is based on the following formula:

$$\boldsymbol{Q = CIA}$$

Where:

Q = Peak Flow Rate, cfs

C = Runoff Coefficient

I = Rainfall Intensity, in/hr

A = Tributary Area, acres

4.2.2. Time of Concentration

The initial Time of Travel for overland flow sheet flow is determined using the overland flow formula per the County of Marin's Hydrology Manual.

Shallow concentrated flow travel time is calculated from the USDA "Urban Hydrology for Small Watersheds" Technical Release 55 (TR-55), Figure 3-1 entitled "Average velocities for estimating travel time for shallow concentrated flow."

Channelized flow travel time and pipe flow travel time are calculated from Manning's Equation in conjunction with hand calculations, Hydrographs, Express software, and Excel.

4.2.3. Rainfall Intensity

Storm intensities (I) for the 100-year storm event is derived using the National Oceanic and Atmospheric Administration's (NOAA) Atlas 14 Point Precipitation Frequency Estimates.

4.2.4. Runoff Coefficient, CalTrans

The runoff coefficients utilized in this report is determined using Figure 819.2A "Runoff Coefficients for Undeveloped Areas" of the Caltrans Highway Design Manual. C=0.53 is applied for the existing ground cover, C=0.53 being the C-value for the topographic condition of "hilly, with average slopes of 10-30%, poor soil infiltration capacity, fair to good grassland or woodland, and well defined system of small drainage ways." C=0.90 was used for impervious areas, C=0.60 for proposed landscaped areas, and

C=0.35 for proposed stormwater bioretention areas. A weighted runoff coefficient is calculated using the terms below:

Weighted Runoff Coefficients are defined as follows:

$$C_{\text{weighted}} = \frac{C_1A_1 + C_2A_2 + C_3A_3 \ \ldots}{A_1 + A_2 + A_3 \ldots}$$

4.2.5. Area of Calculation

Area of calculation is found using AutoCAD software. The Area of Calculation is the area bound by the subshed that drains to a certain drainage outlet. Subsheds bound by either the existing property boundary or the limits of development are included in the Study.

4.2.6. Precipitation Frequency Estimate

The SCS Hydrograph Method is used to determine the peak discharge rate for a 100-year storm frequency event for the watershed tributary to the project site. The SCS Method calculates peak runoff for small watersheds using predetermined regional rainfall distributions in combination with rainfall information from isopluvial maps developed by the National Oceanic Atmospheric Administration (NOAA). The predetermined distributions were developed to cover four geographic regions of the 50 United States. Marin County falls into a region considered to be subject to Distribution IA according to Figure B-2 in the TR-55 manual. Data for point precipitation frequency estimates, available through the internet from NOAA Atlas 14 maps, for this project site, are found in Appendix E.

4.3. Hydraulics

4.3.1. Storm Drain System Modeling

Pipe Sizes are evaluated using AutoCAD Express Tools. Pipe parameters (diameter, slope, manning's roughness coefficient, etc.), are inputted into Express and pipes are sized based on Marin County CA Code of Ordinances described below.

Pipe sizes shall be based upon Marin County CA Code of Ordinances 24.04.520-Hydrologic and hydraulic design. Pipe sizes ware based upon the 100-year storm passing seventy percent as open channel flow with no head allowed at the inlet.

4.3.2. Stormwater Detention Modeling

Stormwater detention is sized using an iterative process in Hydrographs as described below.

Hydrographs are generated for each subshed (pre-development and post-development conditions) and then routed through a detention area using the Hydrographs software. Hydrographs is a software that models a design storm through a detention pond. Parameters of the detention pond can be adjusted so that post-development peak discharge does not exceed pre-development peak discharge. Once those parameters are determined, Hydrographs generates a hydrograph and calculates the maximum storage volume required.

Proposed stormwater detention is located throughout the Site via bioretention areas.

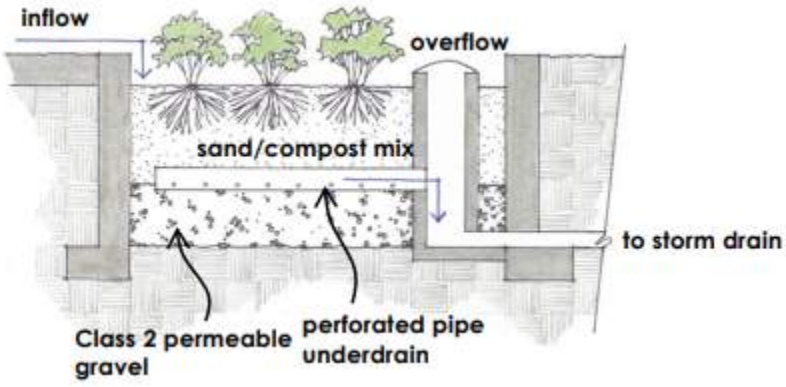
4.3.2. Stormwater Treatment

Project improvements will comply with the Bay Area Stormwater Management Agencies Association (BASMAA) post-construction manual. BASMAA provides a low impact development approach to implementing Provision E.12 of the Phase II Small MS4 General Permit. Provision E.12, "Post-Construction Stormwater Management Program," mandates the County to control pollutants in runoff from newly created or replaced impervious surfaces. To meet the requirements for a Regulated Project, site design measures will include:

- Routing runoff to stormwater treatment facilities (i.e. bioretention area) sized and designed according to Chapter 4 of the BASMAA Post-Construction Manual
- Providing for ongoing maintenance of bioretention facilities
- Identifying potential source of pollutants and implement corresponding source control measures
- Limiting clearing, grading, and soil compaction
- Reducing impervious surfaces
- Reducing runoff by dispersing runoff to landscape areas
- Conserving natural areas of the site consistent with local General Plan policies
- Protecting slopes against erosion

Stormwater treatment areas for the site development include the use of bioretention facilities (Figure 2). The bioretention facilities will be designed and constructed in accordance with BASMAA standards for treatment of runoff from each Drainage Management Area (DMA) or subsheds. Bioretention areas are sized at approximately 4% of the equivalent DMA. The project DMAs and treatment areas are shown in the Stormwater Control Plans (Appendix B).

FIGURE 2: BIORETENTION FACILITY



5. Base Flood Hydraulic Study

5.1 Standards and Methodology

100-year flood information (the base flood information) for existing conditions is taken from Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Marin County, California, and Incorporated Areas, Map Number 06041C0469E dated March 17, 2014.

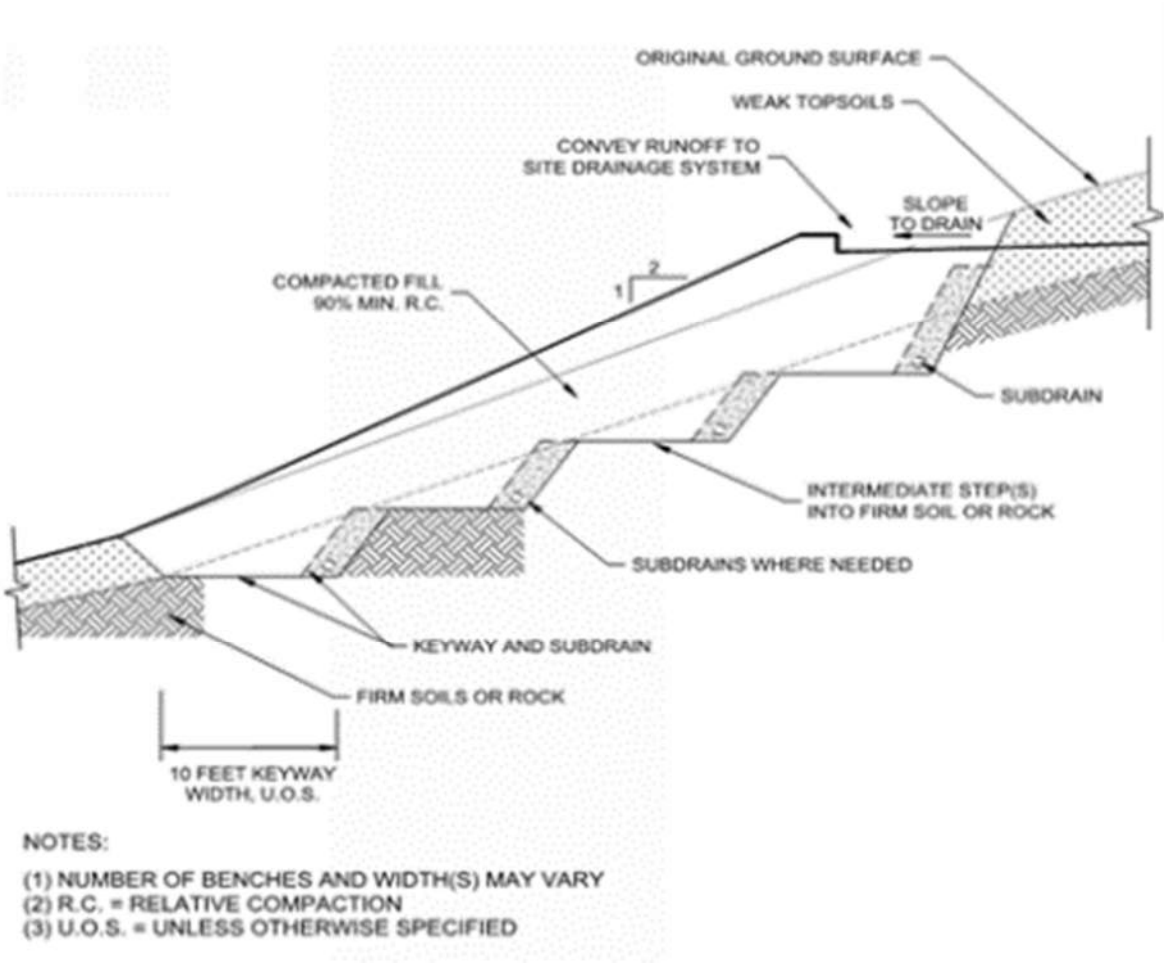
The project site is within FEMA flood zone X. Zone X is the area determined to be outside the 500-year flood. Flood zone AE includes areas of high risk flooding with a base flood elevation of 9.0 feet. Zone AE is offsite and west of Seminary Drive as indicated in Sheet C2.01 in the design plans.

Base flood elevations will remain unchanged by the proposed development.

6. Groundwater

Soil borings by the Geotechnical Engineer revealed varying groundwater seepage from 2.5 to 17 feet deep. As shown in sheet C2.01, "Geotechnical and Flood Zone Map", areas of weak soil resulting from poor drainage and seepage are indicated. Groundwater elevations are highly dependent on storm events and fluctuate seasonally. Project improvements within areas that may experience seasonal high groundwater will include the use of interceptor subdrains to divert the water around the improvement (i.e. building, retaining wall, roadway, etc.). An interceptor subdrain is a gravel-filled trench installed across a contour that collects groundwater traveling on an impermeable soil horizon. An example of an interceptor subdrain for a new roadway installed on a hillside is shown below.

FIGURE 3: TYPICAL HILLSIDE FILL CONSTRUCTION



Groundwater collected in the subdrains is diverted to an outfall dissipater. The dissipater is also a gravel-filled trench with a perforated pipe, which allows water to seep back into the soils below the improvement.

Groundwater seepage surfacing as a spring may also be created through the improper installation of a utility trench or a leaky water main. A recent and substantial repair of a private site water main was completed when surfacing water was observed. New utility trenches on sloped terrain where seasonal high groundwater is anticipated, will utilize check dams to help prevent surfacing groundwater, erosion, and slope instability.

7. Results

TABLE 1: PEAK DISCHARGE RATE, 100-YEAR STORM

Location	Pre-Project Q_{100} (cfs)	Post-Project Q_{100} (cfs)	% Difference
Subshed 1A	1.71	1.76	2.9%
Subshed 1B	94.23	94.28	0.05%
Subshed 2A	3.34	4.63	38.6%
Subshed 2B	0.32	0.38	18.7%
Subshed 2C	12.55	13.13	4.6%
Subshed 2D	2.93	2.77	-5.4%
Subshed 3A	17.92	19.31	7.7%
Subshed 3B	16.43	16.61	1.1%
Subshed 4A	2.89	1.43	-50.5%
Subshed 4B	1.21	1.77	46.2%
Subshed 4C	4.24	4.79	12.9%
Subshed 4D	2.10	2.54	20.9%
Subshed 4E	2.10	4.02	191.4%
Subshed 5A	20.31	17.39	-14.3%

TABLE 2: PEAK DISCHARGE RATE WITH DETENTION, 100-YEAR STORM

Location	Pre-Project Q_{100} (cfs)	Post-Project Q_{100} (cfs)	% Difference	Stormwater Detention Required (cf)	Stormwater Detention Proposed (cf)
Subshed 1A	1.71	1.15	-32.7%	310	986
Subshed 1B	94.23	71.68	-23.9%	50,516	57,187
Subshed 2A	3.34	3.26	-2.3%	977	1,557
Subshed 2B	0.32	0.29	-9.3%	0	0
Subshed 2C	12.55	10.50	-16.3%	3,178	4,849
Subshed 2D	2.93	2.68	-8.5%	0	0
Subshed 3A	17.92	14.94	-16.6%	8,100	10,101
Subshed 3B	16.43	13.76	-16.2%	5,902	8,209
Subshed 4A	2.89	1.32	-54.3%	95	225
Subshed 4B	1.21	1.12	-7.4%	378	1,566
Subshed 4C	4.24	3.84	-9.4%	960	1,350
Subshed 4D	2.10	1.87	-10.9%	427	585
Subshed 4E	2.10	1.97	-6.2%	2,101	2,632
Subshed 5A	20.31	15.20	-25.1%	4,073	5,616

8. Sea Level Rise

To help address potential vulnerability from Sea Level Rise (SLR) along the bay shoreline, Marin County prepared the Marin Bay Waterfront Adaptation and Vulnerability Evaluation (BayWAVE). The fundamental goal of the BayWAVE project is to increase awareness and preparation for future impacts. SLR scenarios include near-term, mid-term, and long-term impacts with and without a 100-year storm event. As indicated in the southern study area of the BayWAVE (Appendix H), there are no buildings or roadways vulnerable to future SLR in the long-term scenario with 60-inches of SLR and 100-year storm event. Additionally, as shown in the Bay Area SLR Analysis and Mapping Project (Appendix H), there are no significant impacts to the project site or overtopping of Seminary Drive along the project frontage.

9. Conclusion

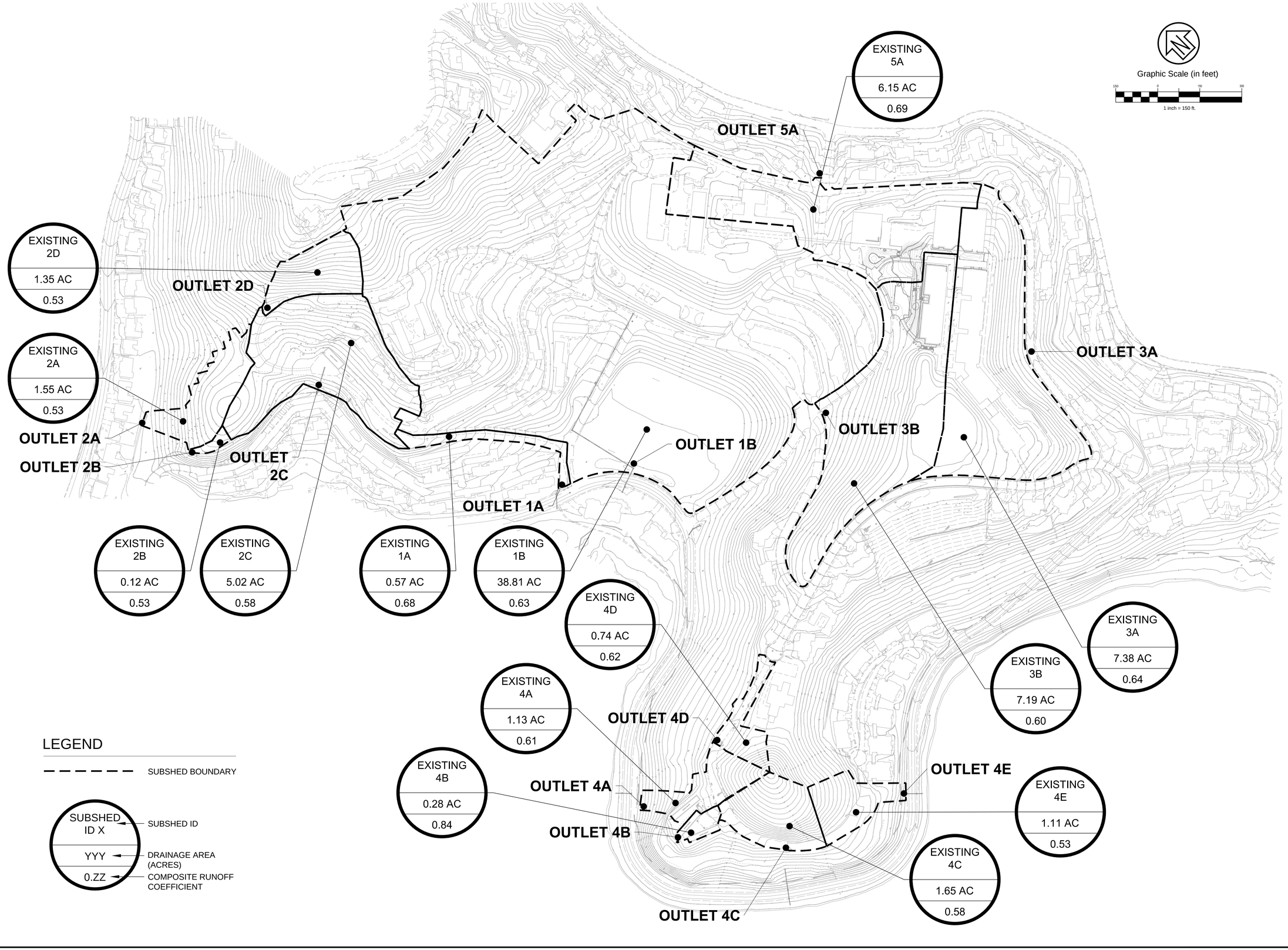
As indicated in the hydrological calculations, there is an overall increase between pre-development and post-development in peak runoff in the 100-year storm for subsheds 1A, 1B, 2A, 2B, 2C, 3A, 3B, 4B, 4C, 4D and 4E (See Appendix A maps for subshed /DMA locations). There is a decrease in subsheds 2D, 4A and 5A. Stormwater runoff increase results from additional impervious areas and accrual of adjacent subshed areas. To mitigate increased runoff, bioretention facilities will be installed to increase detention time, such that the 100-year post-development peak discharge flow rates does not exceed pre-development peak discharge rates. Consequently, there are no significant impacts to the County's off-site storm drainage system.

The hydraulic calculations support project drainage improvements to convey runoff from the project site for the 100-year storm event. Stormwater treatment for smaller, more frequent storm events occur within the bioretention facilities. Bioretention facilities will be designed in accordance with BASMAA guidelines.

Erosion, seasonal springs, and slope instability resulting from high groundwater elevations may be mitigated with interceptor subdrains as indicated in Section 6. Groundwater seepage within the project site will require review and approval by the project Geotechnical Engineer.

Appendices

Appendix A – Hydrology Maps



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Rev	Date	Description	Designed	Drawn	Checked

THE SEMINARY

EXISTING HYDROLOGY

201 SEMINARY DRIVE, MILL VALLEY, CA 94941

City Of
Mill Valley

County Of
Marin

State Of
California

Prepared Under the Direction of:

Sheet
EXH1

Scale:	1" = 150'
Date:	10/21/2021
Project Number:	1.839.00
Plan File:	

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PROPOSED 5A
6.44 AC
0.75

OUTLET 5A

Graphic Scale (in feet)
150 0 150 300
1 inch = 150 ft.

PROPOSED 2D
1.28 AC
0.53

OUTLET 2D

PROPOSED 3A
8.11 AC
0.71

OUTLET 3A

PROPOSED 2A
1.25 AC
0.79

OUTLET 2A

OUTLET 2B

OUTLET 2C

OUTLET 1A

OUTLET 1B

OUTLET 3B

PROPOSED 2B
0.14 AC
0.53

PROPOSED 2C
4.23 AC
0.68

PROPOSED 1A
0.54 AC
0.73

PROPOSED 1B
38.91 AC
0.63

PROPOSED 4D
0.77 AC
0.68

PROPOSED 3B
7.25 AC
0.69

PROPOSED 4A
0.60 AC
0.59

OUTLET 4D

PROPOSED 4E
1.63 AC
0.59

OUTLET 4A

OUTLET 4E

PROPOSED 4B
0.25 AC
0.78

PROPOSED 4C
1.76 AC
0.65

OUTLET 4B

OUTLET 4C

LEGEND

SUBSHED BOUNDARY

SUBSHED ID X — SUBSHED ID
YYY — DRAINAGE AREA (ACRES)
0.ZZ — COMPOSITE RUNOFF COEFFICIENT

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PROPOSED HYDROLOGY

THE SEMINARY

201 SEMINARY DRIVE, MILL VALLEY, CA 94941

City Of
Mill Valley

County Of
Marin

State Of
California

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EXH2

Scale:	1" = 150'
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Plan File:	

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Appendix B –Stormwater Control Plan

LEGEND

- PROPERTY BOUNDARY
- DMA BOUNDARY
- STORM DRAIN LINE
- DMA X — DRAINAGE MANAGEMENT AREA
- STORMWATER BIORETENTION AREA, PLANTER BOX STYLE
- STORMWATER BIORETENTION AREA, AT GRADE STYLE. RETAINIING WALLS AS OCCURS

DMA NAME	DMA AREA (SF)	POST- PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	BIO AREA SUMMARY		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 1A	12585	HARDSCAPE	1.0	12585			
	11135	LANDSCAPE	0.1	1114			
TOTAL >				13699	0.04	548	1096

DMA NAME	DMA AREA (SF)	POST- PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	BIO AREA SUMMARY		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 2B	0	HARDSCAPE	1.0	0			
	0	LANDSCAPE	0.1	0			
TOTAL >				0	0.04	0	0

DMA NAME	DMA AREA (SF)	POST- PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	BIO AREA SUMMARY		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 1B	462720	HARDSCAPE	1.0	462720			
	1232085	LANDSCAPE	0.1	123209			
TOTAL >				585929	0.04	23437	27232

DMA NAME	DMA AREA (SF)	POST- PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	BIO AREA SUMMARY		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 2C	73910	HARDSCAPE	1.0	73910			
	110275	LANDSCAPE	0.1	11028			
TOTAL >				84938	0.04	3398	3730

DMA NAME	DMA AREA (SF)	POST- PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	BIO AREA SUMMARY		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 2A	38140	HARDSCAPE	1.0	38140			
	16225	LANDSCAPE	0.1	1623			
TOTAL >				39763	0.04	1591	1730

DMA NAME	DMA AREA (SF)	POST- PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	BIO AREA SUMMARY		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 2D	0	HARDSCAPE	1.0	0			
	0	LANDSCAPE	0.1	0			
TOTAL >				0	0.04	0	0

NOTE: NO PROPOSED IMPROVEMENTS IN DMA 2B AND 2D, THEREFORE NO TREATMENT AREA PROVIDED.

Graphic Scale (in feet)

50 0 50 100

1 inch = 50 ft.

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PRELIMINARY

STORMWATER CONTROL PLAN

THE SEMINARY

201 SEMINARY DRIVE, MILL VALLEY, CA 94941

City Of

County Of
Marin

State Of
California

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Sheet
C1

Scale:	1" = 50'
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Graphic Scale (in feet)

50 0 50 100

1 inch = 50 ft.

LEGEND

- PROPERTY BOUNDARY
- DMA BOUNDARY
- STORM DRAIN LINE
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DMA NAME	DMA AREA (SF)	POST- PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	BIO AREA SUMMARY		
DMA 1B	462720	HARDSCAPE	1.0	462720	IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
	1232085	LANDSCAPE	0.1	123209			
TOTAL >				585929	0.04	23437	27232

DMA NAME	DMA AREA (SF)	POST- PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	BIO AREA SUMMARY		
DMA 3A	168930	HARDSCAPE	1.0	168930	IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
	184435	LANDSCAPE	0.1	18444			
TOTAL >				187374	0.04	7495	7770

DMA NAME	DMA AREA (SF)	POST- PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	BIO AREA SUMMARY		
DMA 3B	139530	HARDSCAPE	1.0	139530	IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
	176415	LANDSCAPE	0.1	17642			
TOTAL >				157172	0.04	6287	6315

DMA NAME	DMA AREA (SF)	POST- PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	BIO AREA SUMMARY		
DMA 5A	101400	HARDSCAPE	1.0	101400	IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
	48215	LANDSCAPE	0.1	4822			
TOTAL >				106222	0.04	4249	4320

DMA 5A

DMA 3A

DMA 1B

DMA 3A

DMA 3B

MATCHLINE SEE SHEET C1

MATCHLINE SEE SHEET C3

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THE SEMINARY

STORMWATER CONTROL PLAN

201 SEMINARY DRIVE, MILL VALLEY, CA 94941

City Of

County Of
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State Of
California

Prepared Under the Direction of:

Sheet
C2

Scale:	1" = 50'
Date:	10/21/2021
Project Number:	1.839.00
Plan File:	

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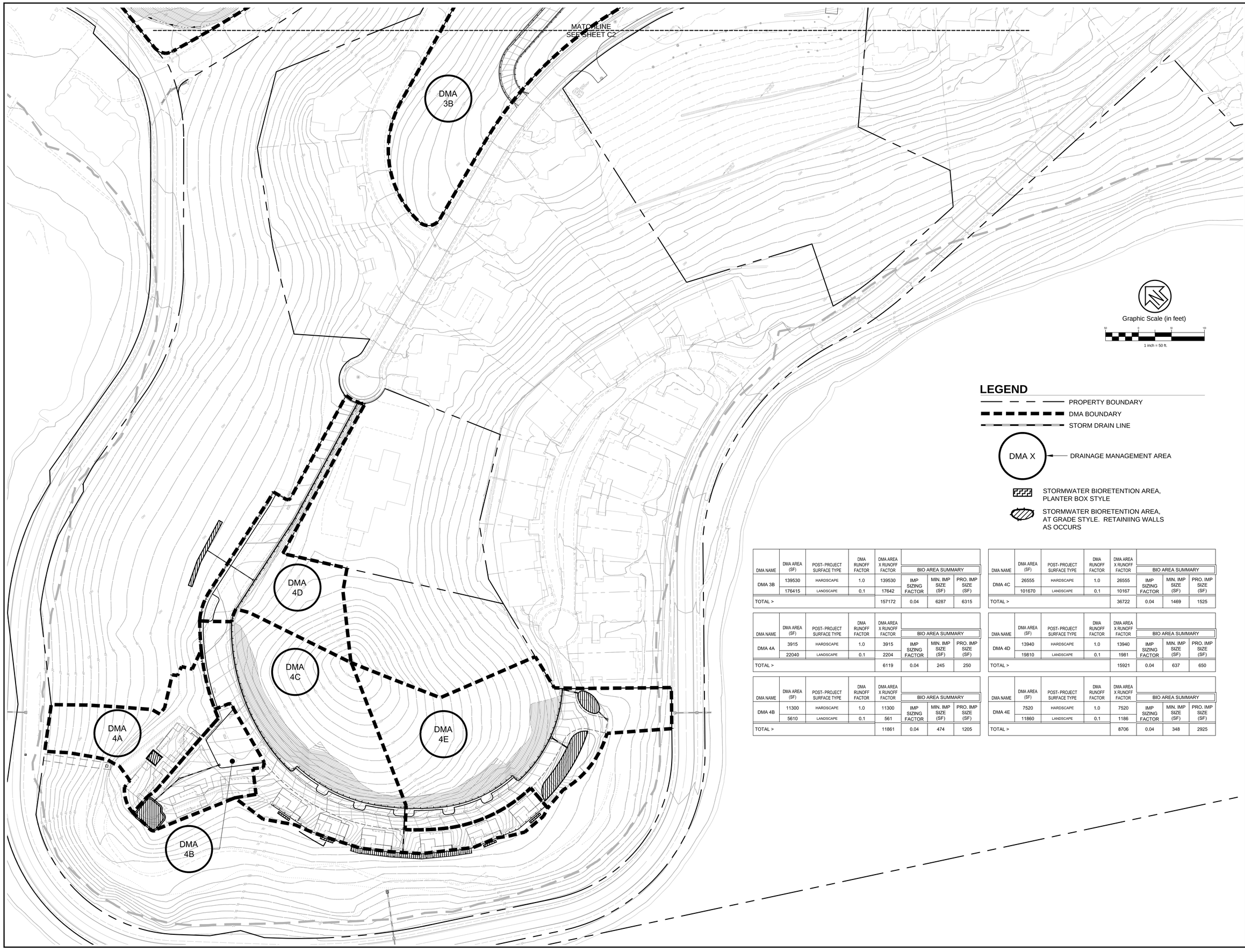

Graphic Scale (in feet)

50 0 25 50 100

1 inch = 50 ft.

LEGEND

- PROPERTY BOUNDARY
- DMA BOUNDARY
- STORM DRAIN LINE
- DMA X — DRAINAGE MANAGEMENT AREA
- STORMWATER BIORETENTION AREA, PLANTER BOX STYLE
- STORMWATER BIORETENTION AREA, AT GRADE STYLE. RETAINIING WALLS AS OCCURS

DMA NAME	DMA AREA (SF)	POST- PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	BIO AREA SUMMARY		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 3B	139530	HARDSCAPE	1.0	139530			
	176415	LANDSCAPE	0.1	17642			
TOTAL >				157172	0.04	6287	6315

DMA NAME	DMA AREA (SF)	POST- PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	BIO AREA SUMMARY		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 4C	26555	HARDSCAPE	1.0	26555			
	101670	LANDSCAPE	0.1	10167			
TOTAL >				36722	0.04	1469	1525

DMA NAME	DMA AREA (SF)	POST- PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	BIO AREA SUMMARY		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 4A	3915	HARDSCAPE	1.0	3915			
	22040	LANDSCAPE	0.1	2204			
TOTAL >				6119	0.04	245	250

DMA NAME	DMA AREA (SF)	POST- PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	BIO AREA SUMMARY		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 4D	13940	HARDSCAPE	1.0	13940			
	19810	LANDSCAPE	0.1	1981			
TOTAL >				15921	0.04	637	650

DMA NAME	DMA AREA (SF)	POST- PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	BIO AREA SUMMARY		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 4B	11300	HARDSCAPE	1.0	11300			
	5610	LANDSCAPE	0.1	561			
TOTAL >				11861	0.04	474	1205

DMA NAME	DMA AREA (SF)	POST- PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	BIO AREA SUMMARY		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 4E	7520	HARDSCAPE	1.0	7520			
	11860	LANDSCAPE	0.1	1186			
TOTAL >				8706	0.04	348	2925

CSW | ST2
CSW/Stuber-Stroeh Engineering Group, Inc.
45 Leveroni Court
Novato, CA 94949
tel: 415.883.9850
fax: 415.883.9835
Civil Engineers
Surveying & Mapping
Land Planning
Construction Management
http://www.cswst2.com
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Rev	Date	Description	Designed	Drawn	Checked

THE SEMINARY

STORMWATER CONTROL PLAN

201 SEMINARY DRIVE, MILL VALLEY, CA 94941

City Of

County Of
Marin

State Of
California

Prepared Under the Direction of:

Sheet
C3

Scale:	1" = 50'
Date:	10/21/2021
Project Number:	1.839.00
Plan File:	

P:\2018\00\Calculations_and_Spreadsheets\Stormwater Control Plan\2021\C3 - Stormwater Control Plan.dwg 10/21/2021 - 08:09 PM DraftB 1:1

Appendix C – Hydrographs (Pre-Development Conditions)

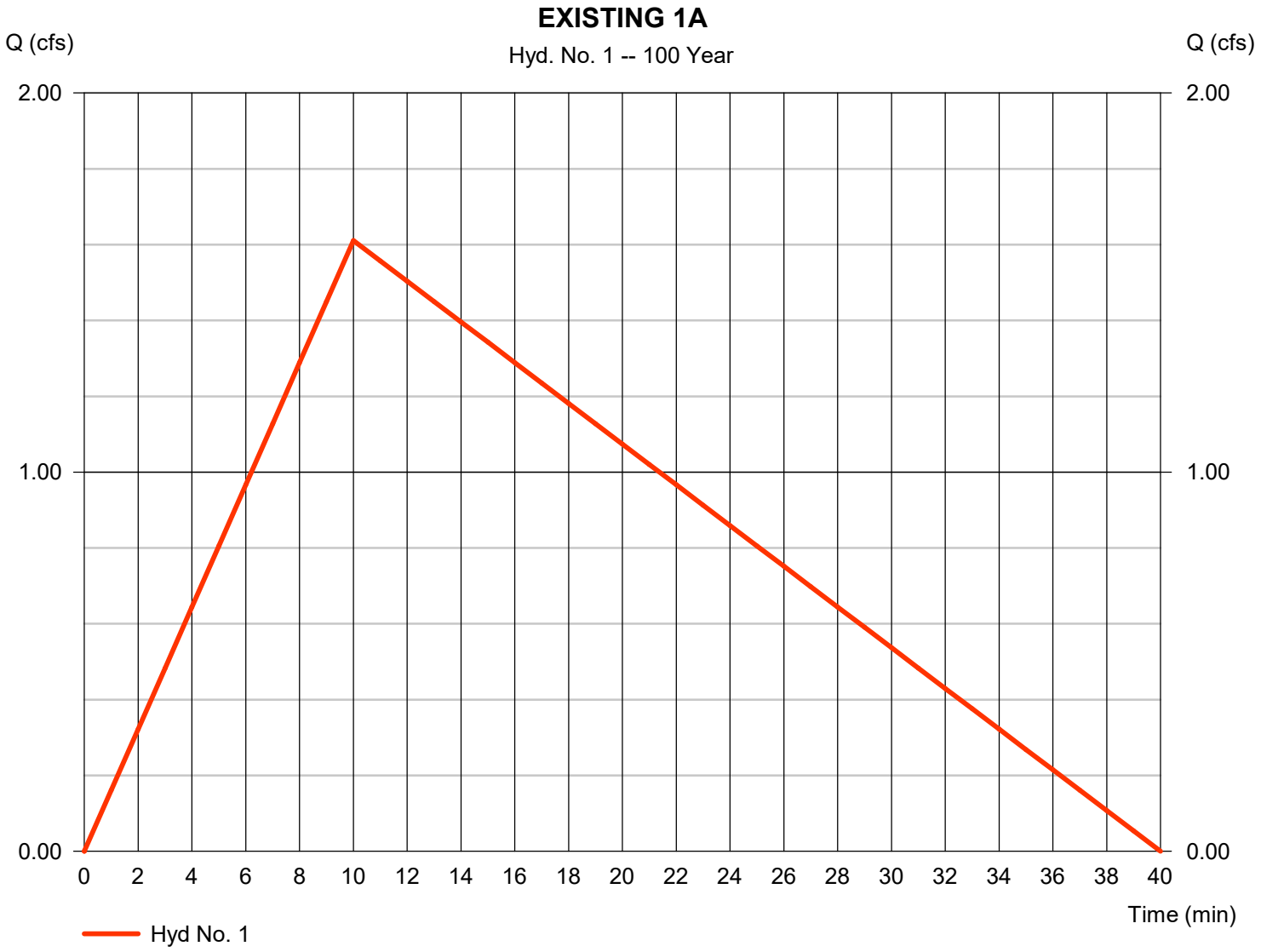
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

EXISTING 1A

Hydrograph type	=	Rational	Peak discharge	=	1.611 cfs
Storm frequency	=	100 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,933 cuft
Drainage area	=	0.570 ac	Runoff coeff.	=	0.68
Intensity	=	4.156 in/hr	Tc by User	=	10.00 min
IDF Curve	=	100-YR STORM.IDF	Asc/Rec limb fact	=	1/3



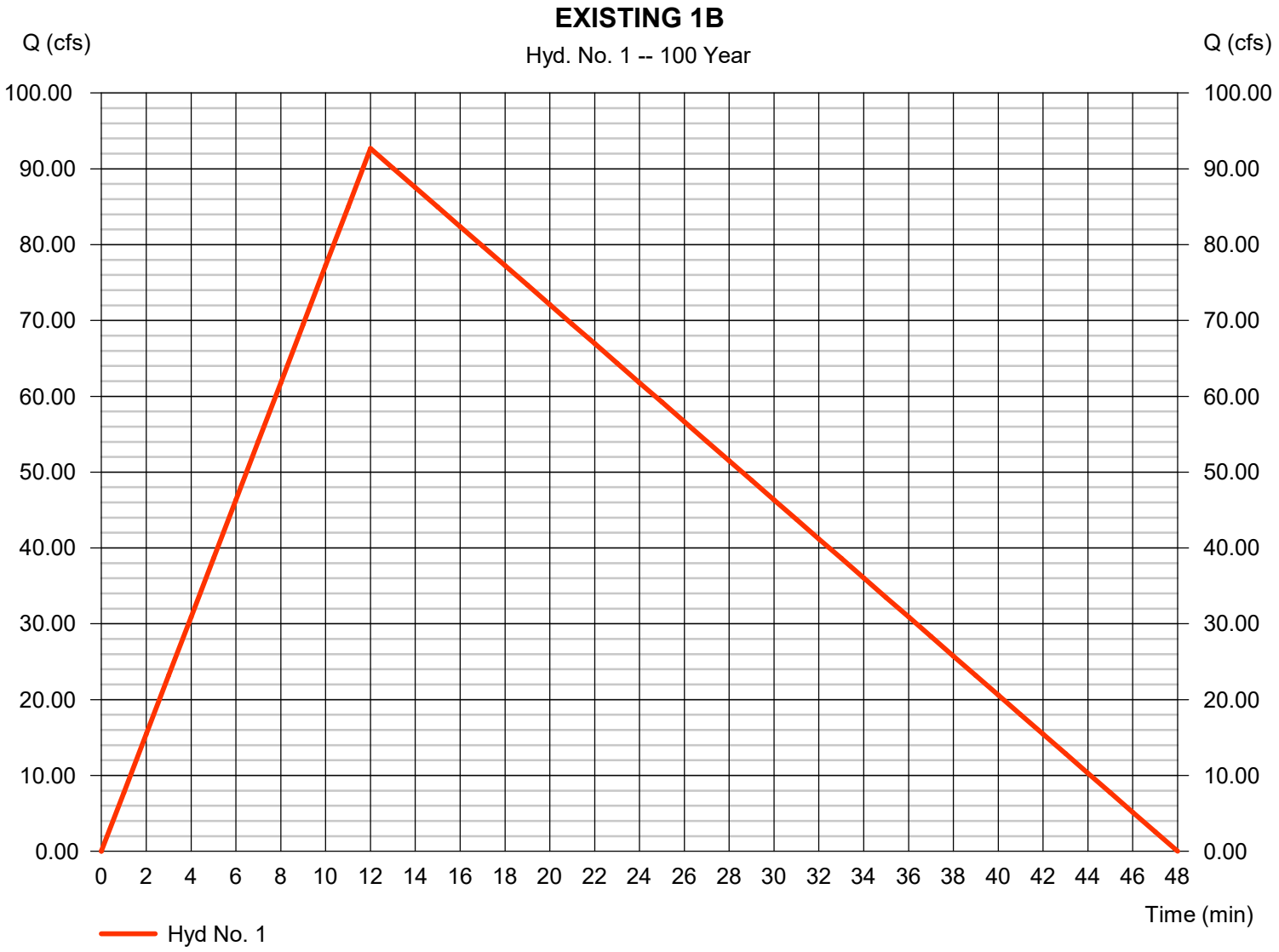
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

EXISTING 1B

Hydrograph type	=	Rational	Peak discharge	=	92.69 cfs
Storm frequency	=	100 yrs	Time to peak	=	12 min
Time interval	=	1 min	Hyd. volume	=	133,472 cuft
Drainage area	=	38.810 ac	Runoff coeff.	=	0.63
Intensity	=	3.791 in/hr	Tc by User	=	12.00 min
IDF Curve	=	100-YR STORM.IDF	Asc/Rec limb fact	=	1/3



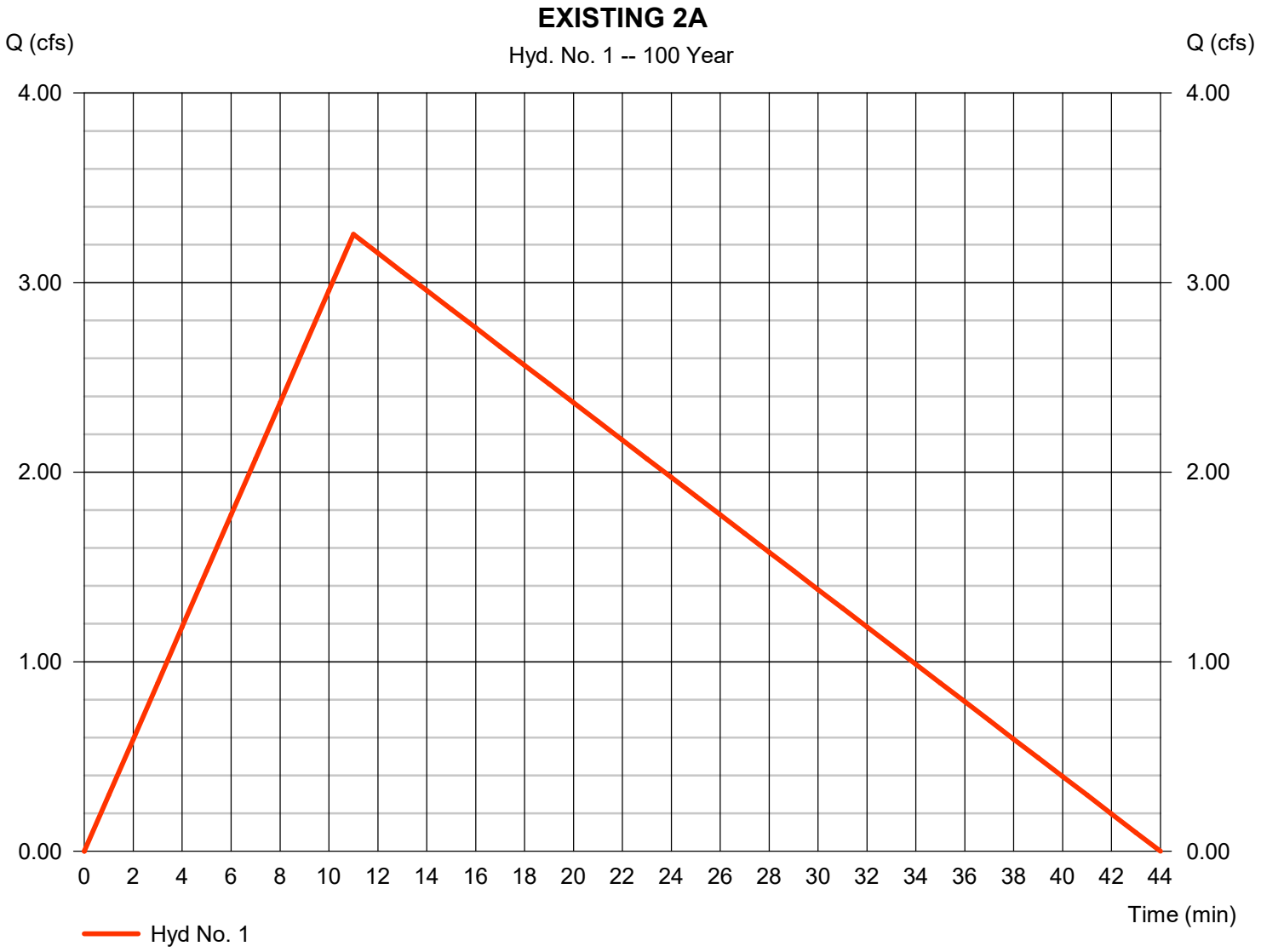
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

EXISTING 2A

Hydrograph type	=	Rational	Peak discharge	=	3.254 cfs
Storm frequency	=	100 yrs	Time to peak	=	11 min
Time interval	=	1 min	Hyd. volume	=	4,295 cuft
Drainage area	=	1.550 ac	Runoff coeff.	=	0.53
Intensity	=	3.961 in/hr	Tc by User	=	11.00 min
IDF Curve	=	100-YR STORM.IDF	Asc/Rec limb fact	=	1/3



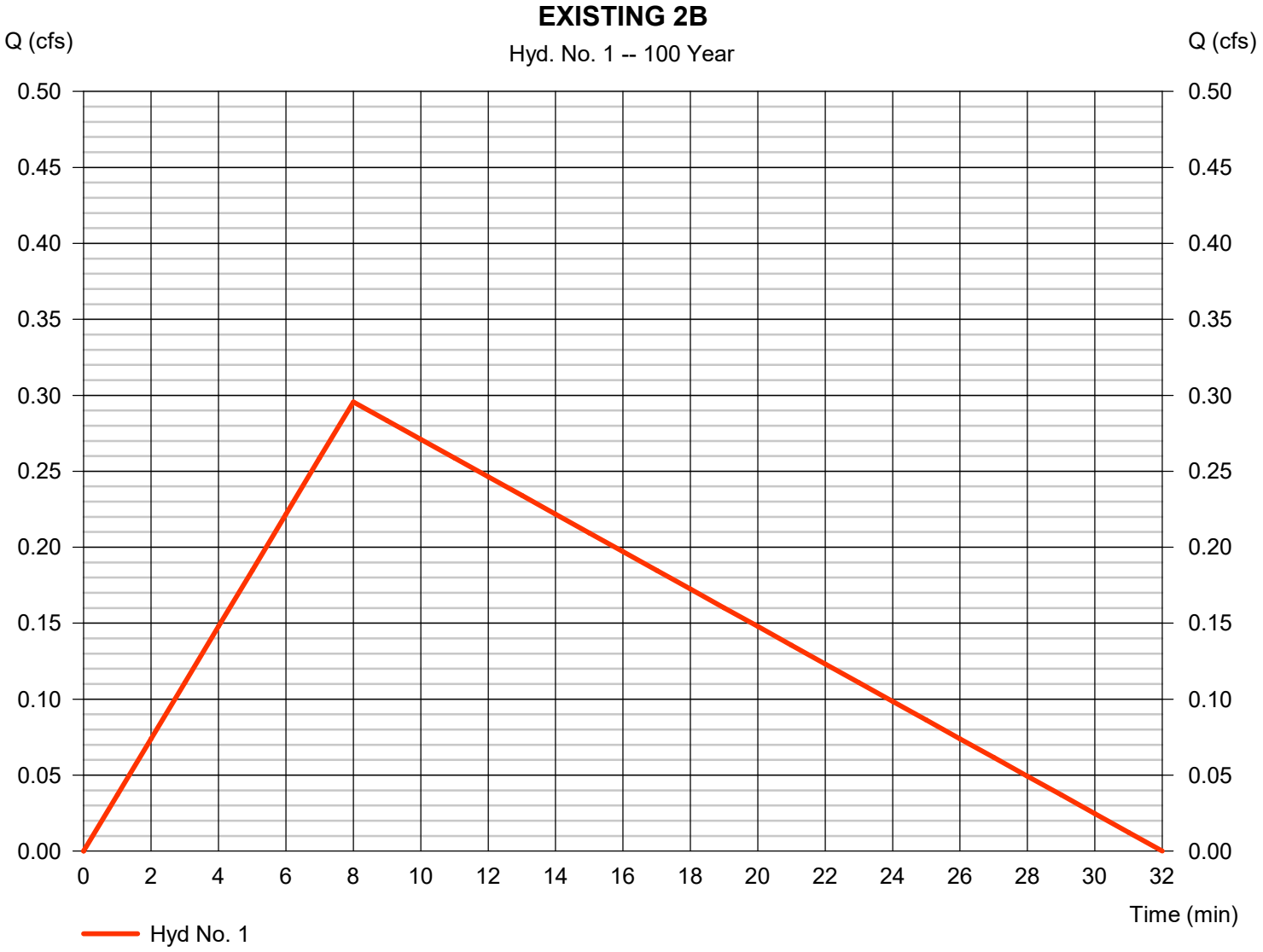
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

EXISTING 2B

Hydrograph type	= Rational	Peak discharge	= 0.296 cfs
Storm frequency	= 100 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 284 cuft
Drainage area	= 0.120 ac	Runoff coeff.	= 0.53
Intensity	= 4.649 in/hr	Tc by User	= 8.00 min
IDF Curve	= 100-YR STORM.IDF	Asc/Rec limb fact	= 1/3



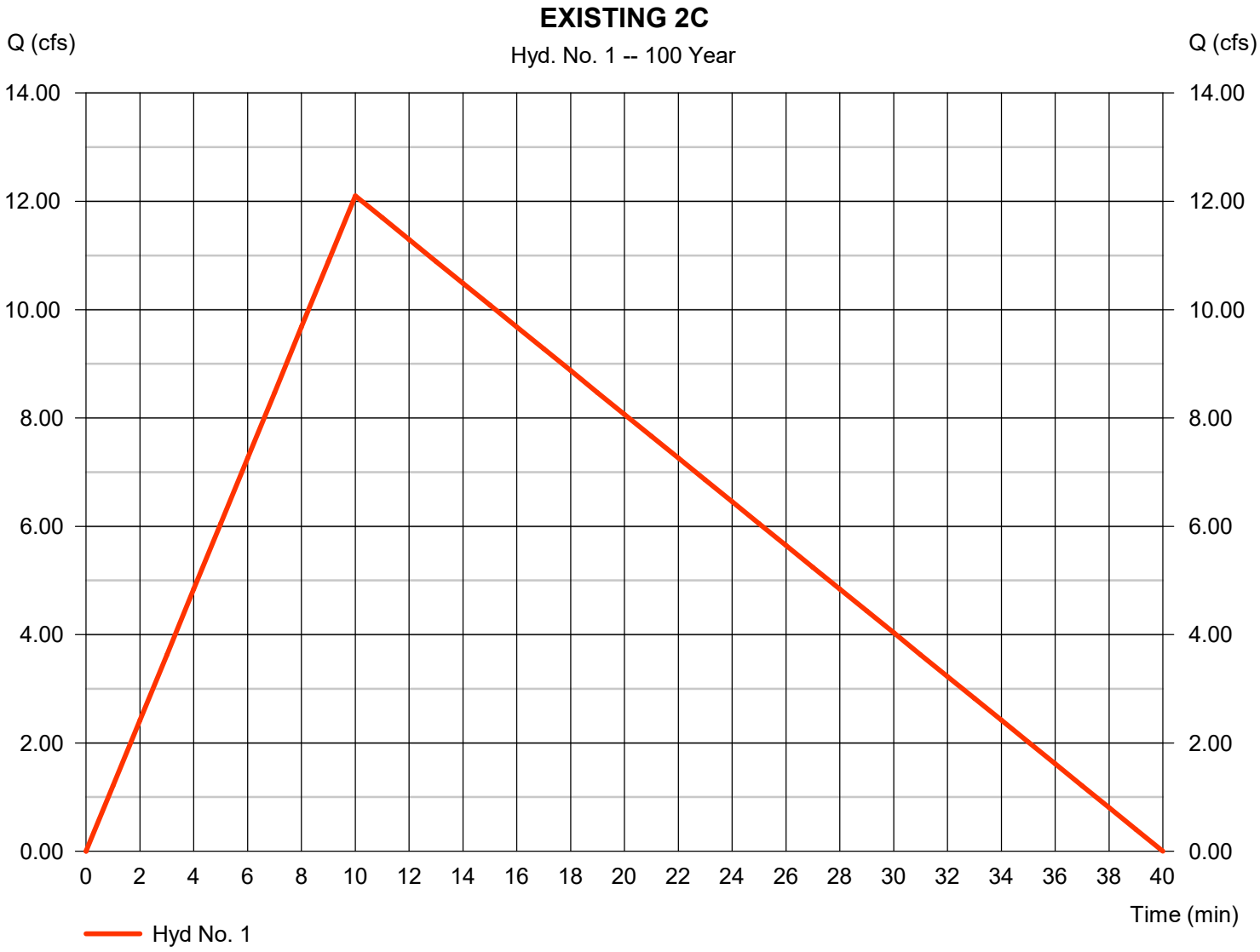
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

EXISTING 2C

Hydrograph type	= Rational	Peak discharge	= 12.10 cfs
Storm frequency	= 100 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 14,521 cuft
Drainage area	= 5.020 ac	Runoff coeff.	= 0.58
Intensity	= 4.156 in/hr	Tc by User	= 10.00 min
IDF Curve	= 100-YR STORM.IDF	Asc/Rec limb fact	= 1/3



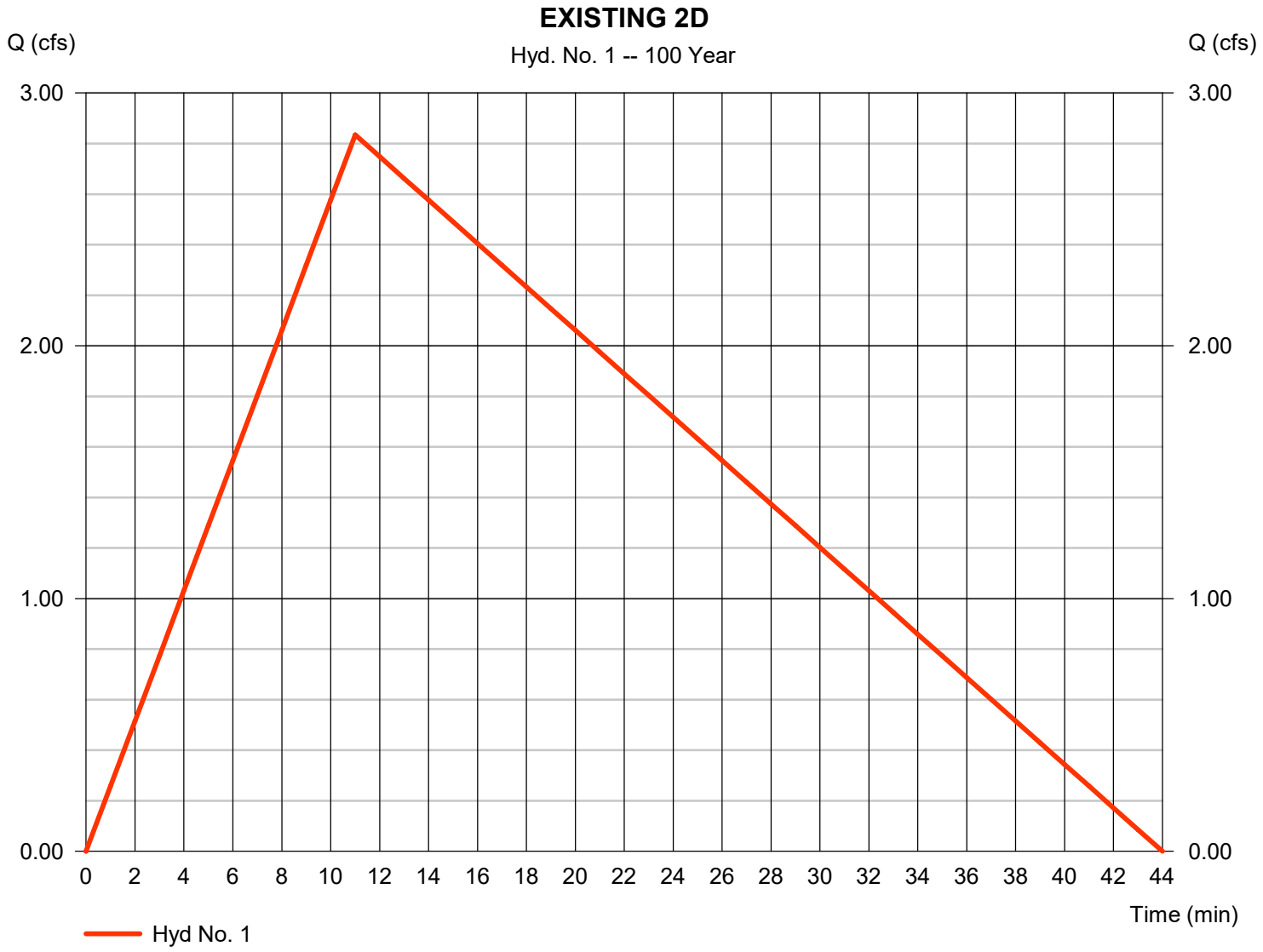
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

EXISTING 2D

Hydrograph type	=	Rational	Peak discharge	=	2.834 cfs
Storm frequency	=	100 yrs	Time to peak	=	11 min
Time interval	=	1 min	Hyd. volume	=	3,741 cuft
Drainage area	=	1.350 ac	Runoff coeff.	=	0.53
Intensity	=	3.961 in/hr	Tc by User	=	11.00 min
IDF Curve	=	100-YR STORM.IDF	Asc/Rec limb fact	=	1/3



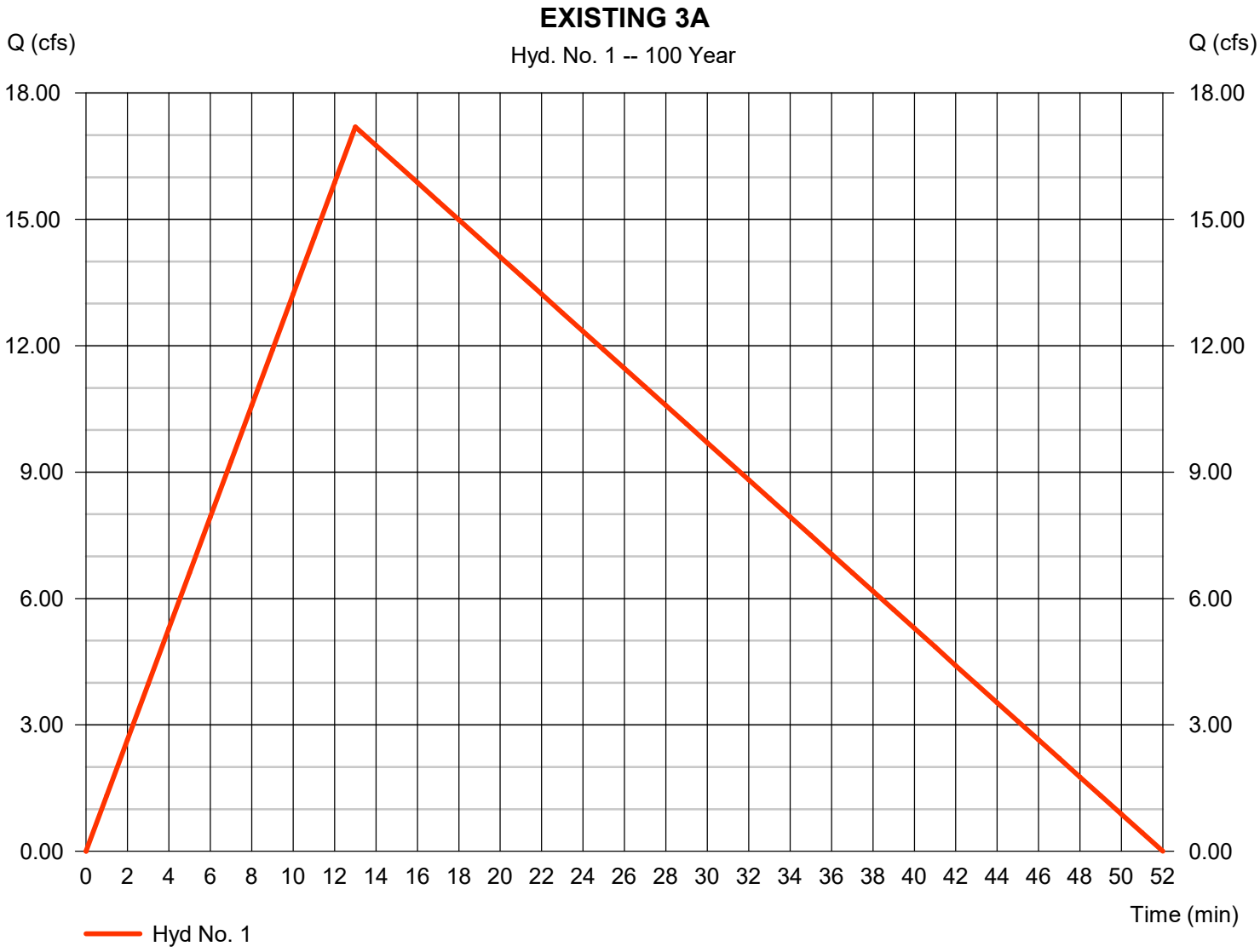
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

EXISTING 3A

Hydrograph type	=	Rational	Peak discharge	=	17.20 cfs
Storm frequency	=	100 yrs	Time to peak	=	13 min
Time interval	=	1 min	Hyd. volume	=	26,825 cuft
Drainage area	=	7.380 ac	Runoff coeff.	=	0.64
Intensity	=	3.641 in/hr	Tc by User	=	13.00 min
IDF Curve	=	100-YR STORM.IDF	Asc/Rec limb fact	=	1/3



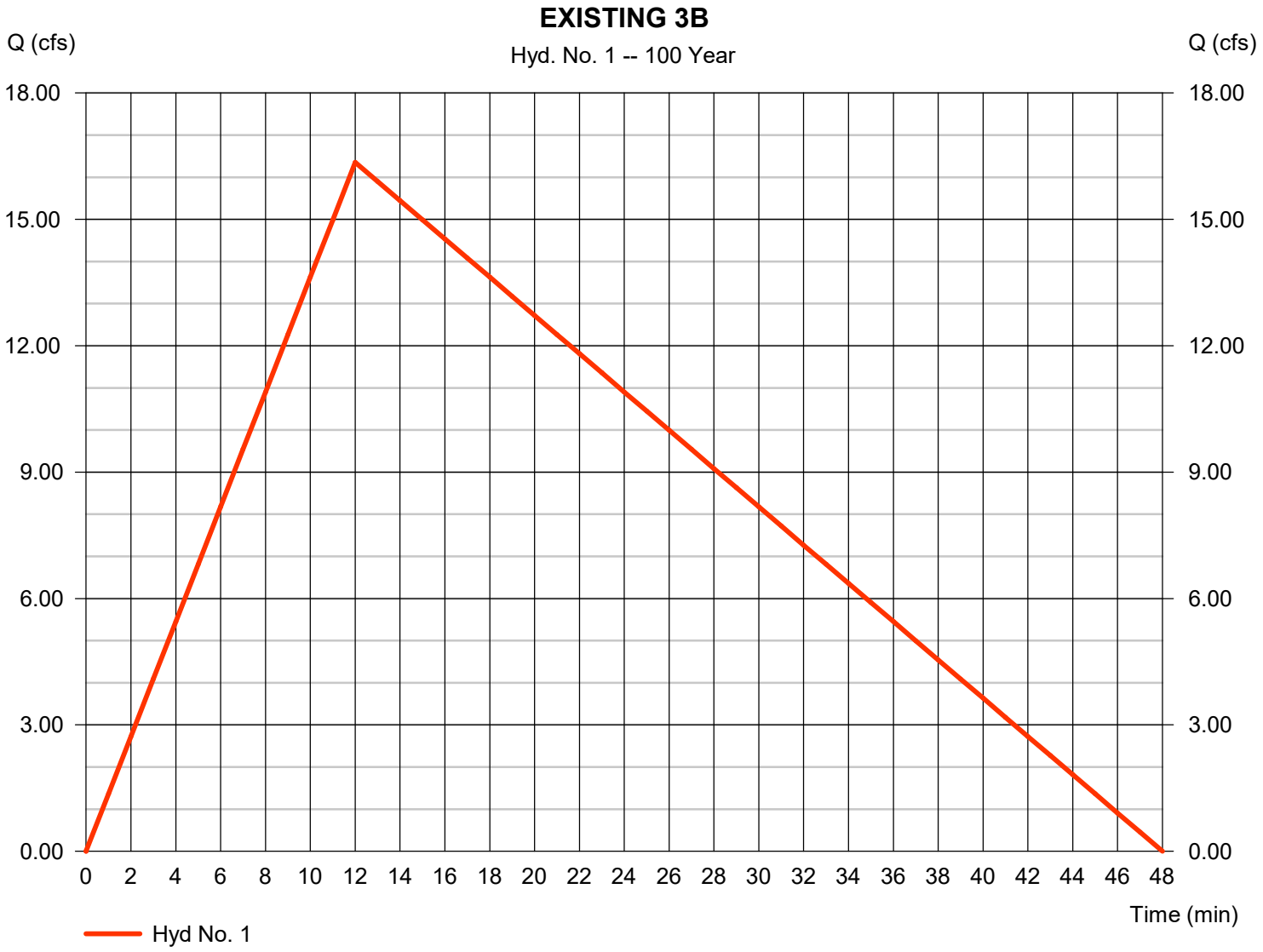
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

EXISTING 3B

Hydrograph type	=	Rational	Peak discharge	=	16.35 cfs
Storm frequency	=	100 yrs	Time to peak	=	12 min
Time interval	=	1 min	Hyd. volume	=	23,550 cuft
Drainage area	=	7.190 ac	Runoff coeff.	=	0.6
Intensity	=	3.791 in/hr	Tc by User	=	12.00 min
IDF Curve	=	100-YR STORM.IDF	Asc/Rec limb fact	=	1/3



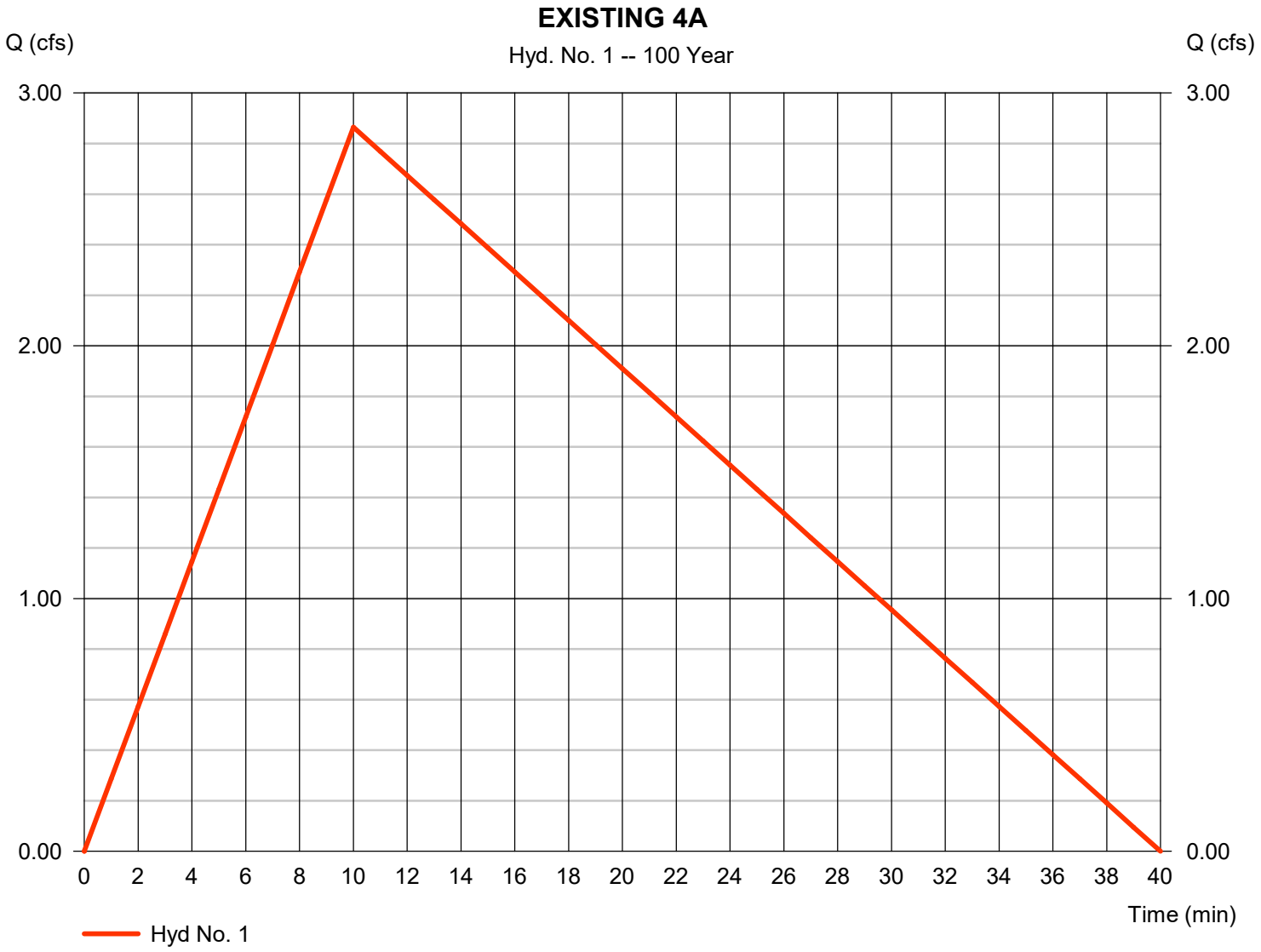
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

EXISTING 4A

Hydrograph type	= Rational	Peak discharge	= 2.865 cfs
Storm frequency	= 100 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 3,438 cuft
Drainage area	= 1.130 ac	Runoff coeff.	= 0.61
Intensity	= 4.156 in/hr	Tc by User	= 10.00 min
IDF Curve	= 100-YR STORM.IDF	Asc/Rec limb fact	= 1/3



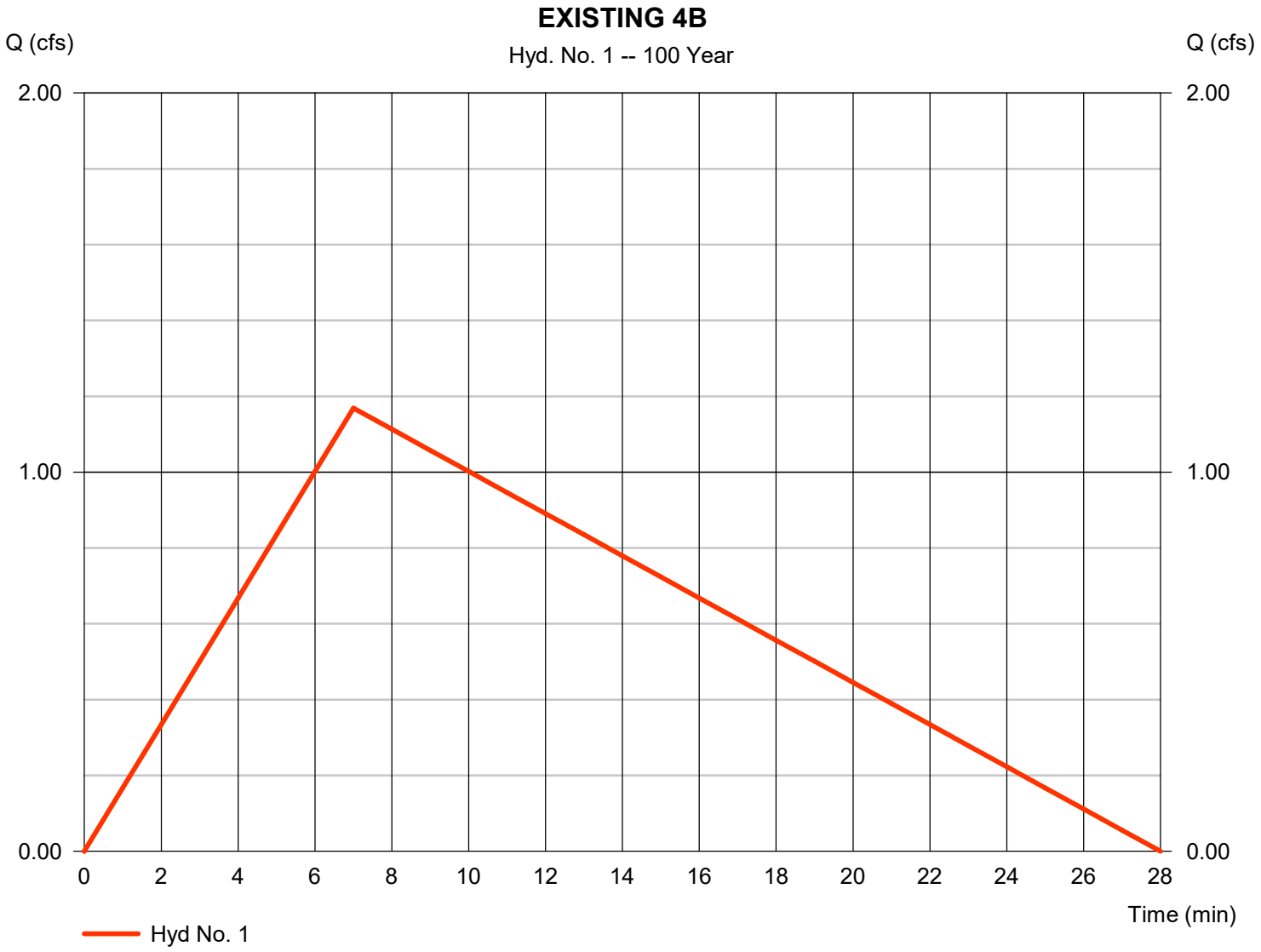
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

EXISTING 4B

Hydrograph type	= Rational	Peak discharge	= 1.169 cfs
Storm frequency	= 100 yrs	Time to peak	= 7 min
Time interval	= 1 min	Hyd. volume	= 982 cuft
Drainage area	= 0.280 ac	Runoff coeff.	= 0.84
Intensity	= 4.970 in/hr	Tc by User	= 7.00 min
IDF Curve	= 100-YR STORM.IDF	Asc/Rec limb fact	= 1/3



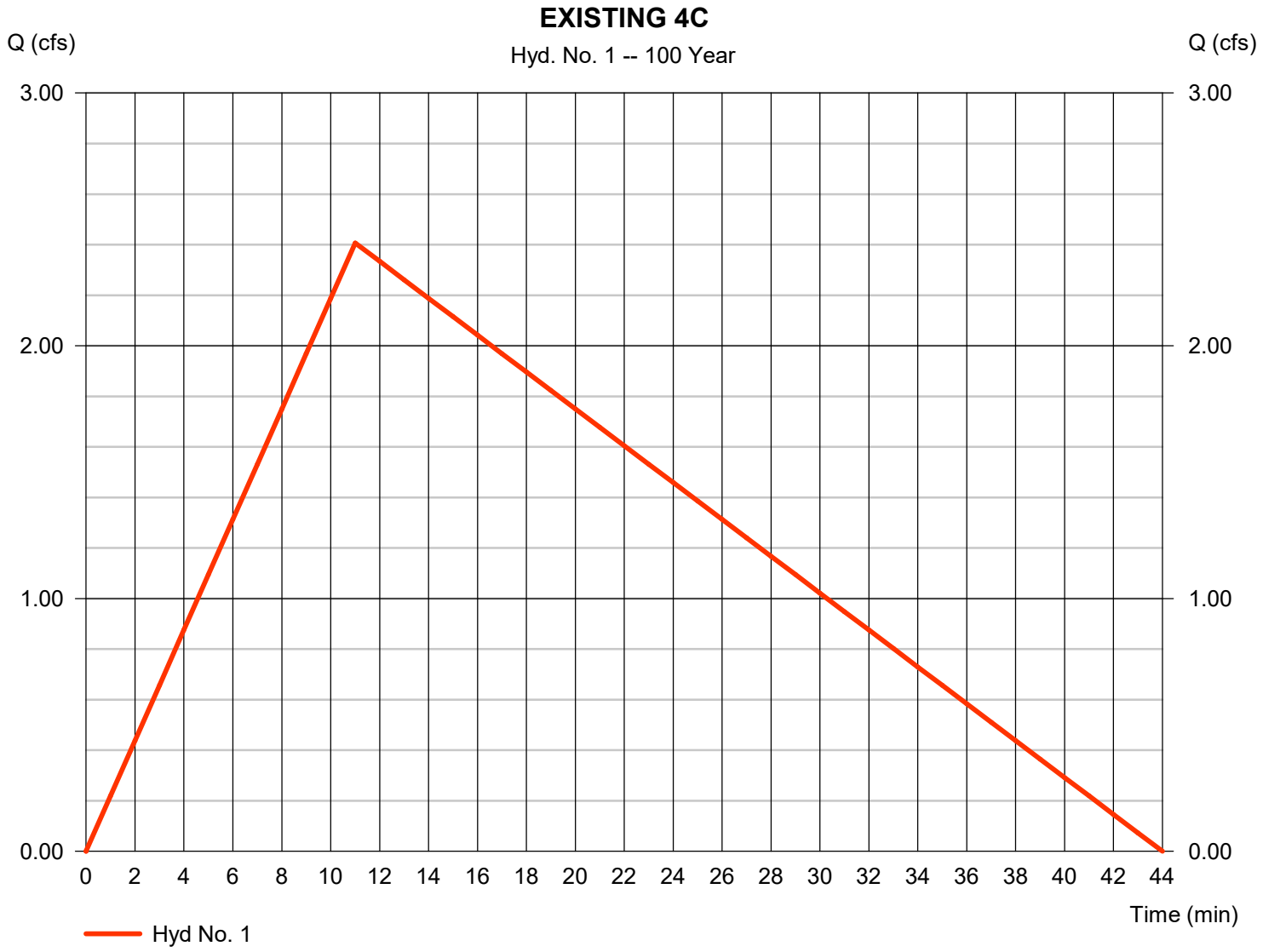
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

EXISTING 4C

Hydrograph type	=	Rational	Peak discharge	=	2.407 cfs
Storm frequency	=	100 yrs	Time to peak	=	11 min
Time interval	=	1 min	Hyd. volume	=	3,177 cuft
Drainage area	=	0.980 ac	Runoff coeff.	=	0.62
Intensity	=	3.961 in/hr	Tc by User	=	11.00 min
IDF Curve	=	100-YR STORM.IDF	Asc/Rec limb fact	=	1/3



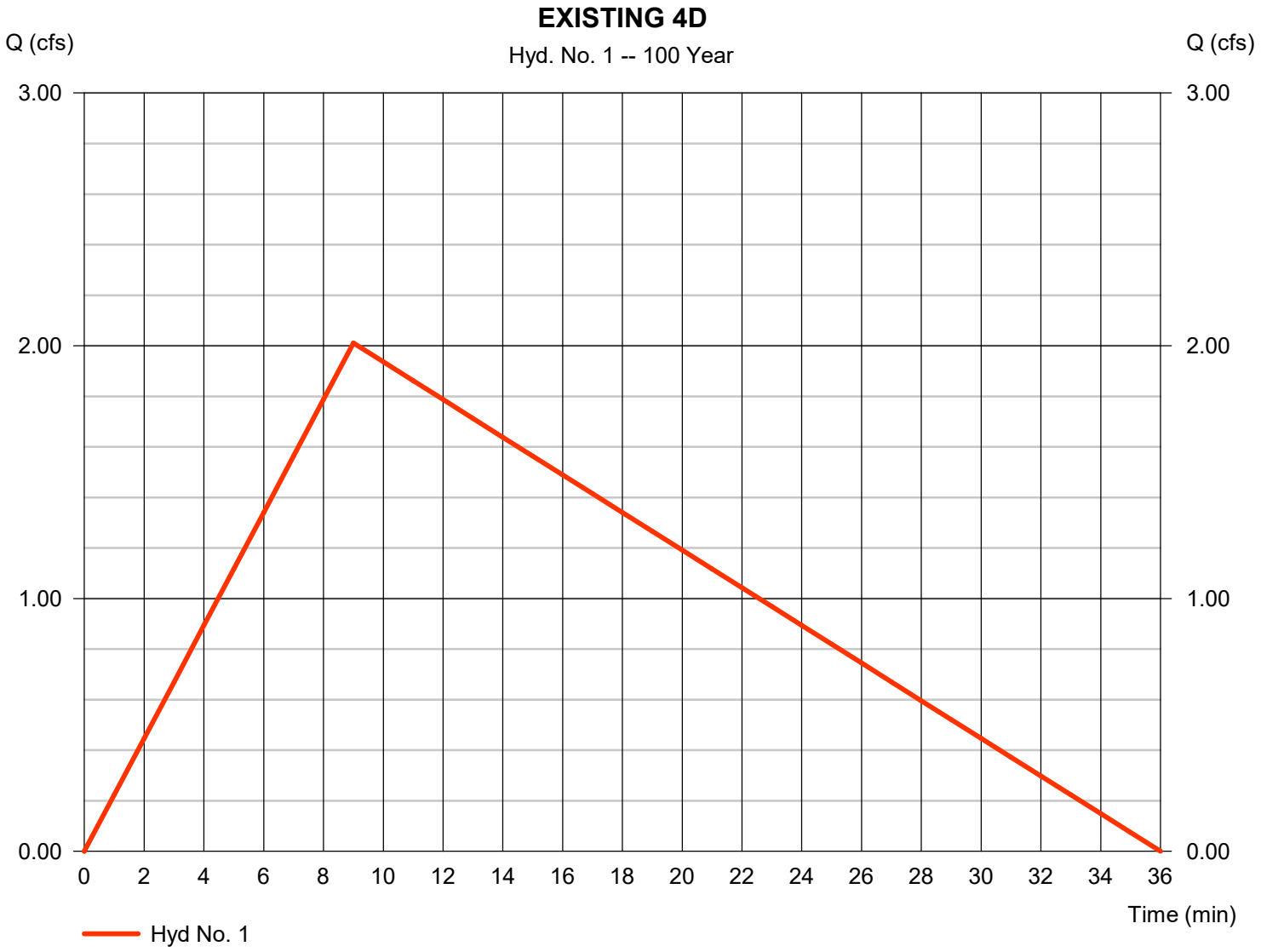
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

EXISTING 4D

Hydrograph type	= Rational	Peak discharge	= 2.011 cfs
Storm frequency	= 100 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 2,171 cuft
Drainage area	= 0.740 ac	Runoff coeff.	= 0.62
Intensity	= 4.382 in/hr	Tc by User	= 9.00 min
IDF Curve	= 100-YR STORM.IDF	Asc/Rec limb fact	= 1/3



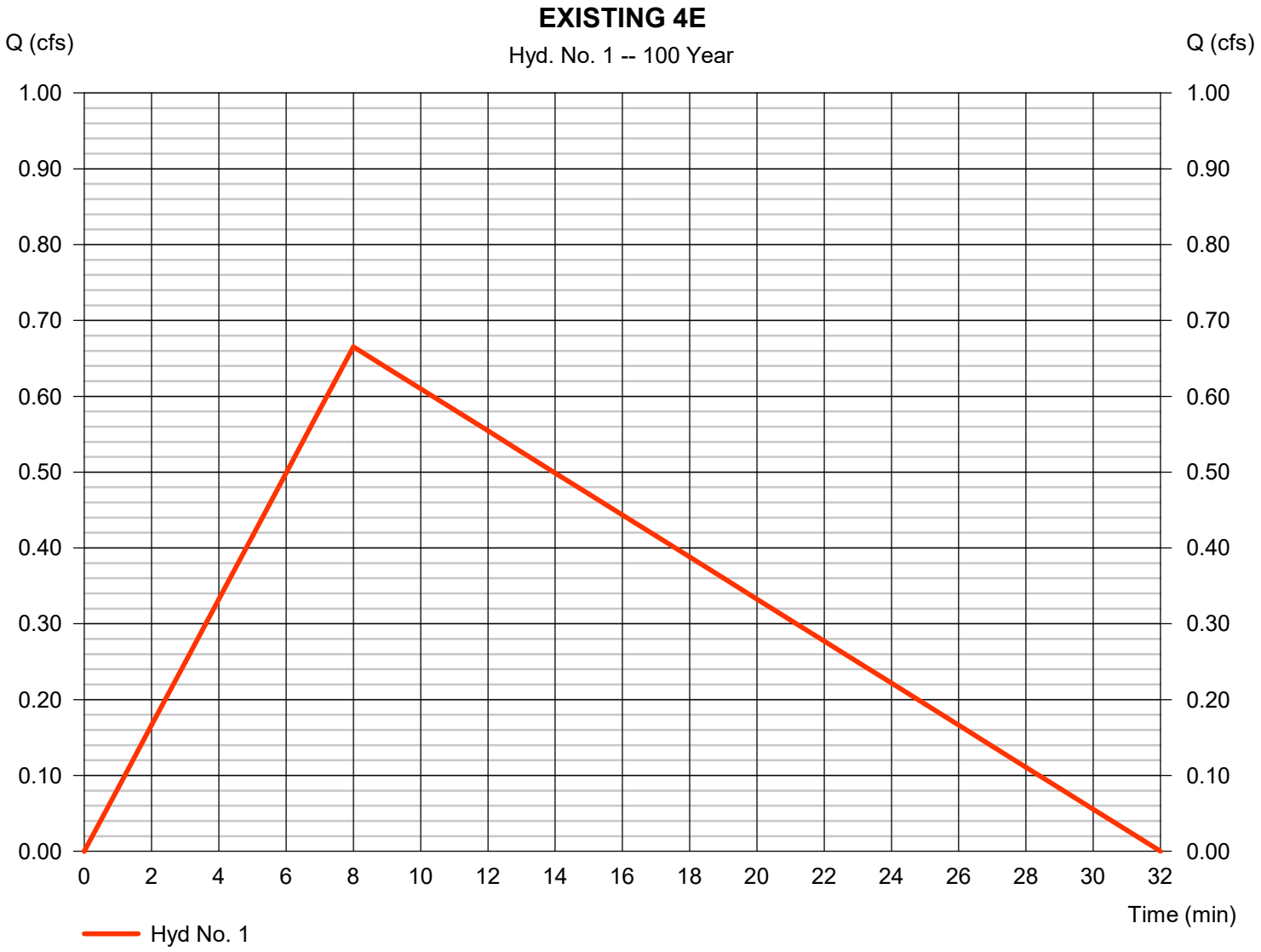
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

EXISTING 4E

Hydrograph type	= Rational	Peak discharge	= 0.665 cfs
Storm frequency	= 100 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 639 cuft
Drainage area	= 0.270 ac	Runoff coeff.	= 0.53
Intensity	= 4.649 in/hr	Tc by User	= 8.00 min
IDF Curve	= 100-YR STORM.IDF	Asc/Rec limb fact	= 1/3



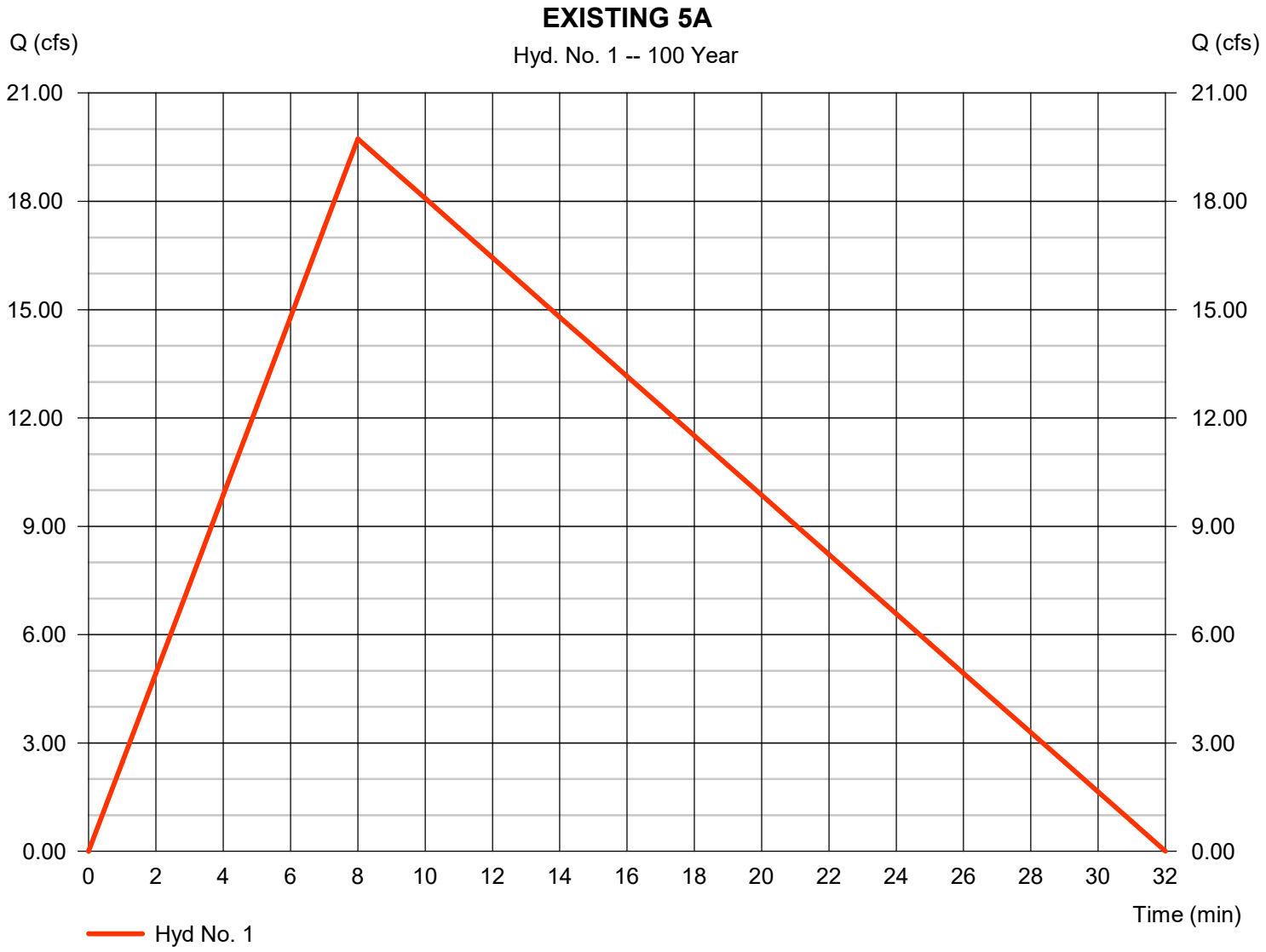
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

EXISTING 5A

Hydrograph type	= Rational	Peak discharge	= 19.73 cfs
Storm frequency	= 100 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 18,939 cuft
Drainage area	= 6.150 ac	Runoff coeff.	= 0.69
Intensity	= 4.649 in/hr	Tc by User	= 8.00 min
IDF Curve	= 100-YR STORM.IDF	Asc/Rec limb fact	= 1/3



Appendix D – Hydrographs (Post-Development Conditions)

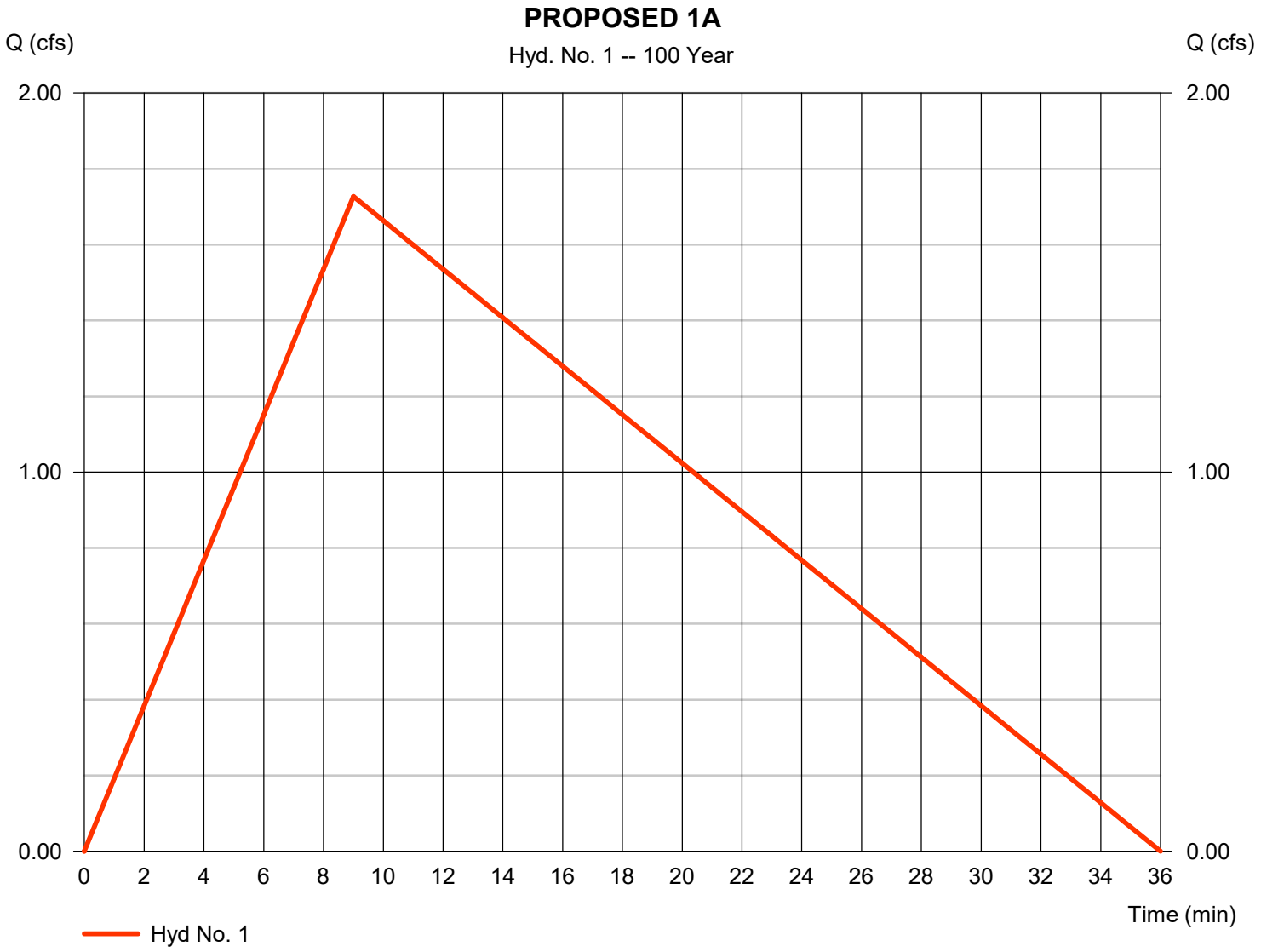
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

PROPOSED 1A

Hydrograph type	=	Rational	Peak discharge	=	1.727 cfs
Storm frequency	=	100 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	1,866 cuft
Drainage area	=	0.540 ac	Runoff coeff.	=	0.73
Intensity	=	4.382 in/hr	Tc by User	=	9.00 min
IDF Curve	=	100-YR STORM.IDF	Asc/Rec limb fact	=	1/3



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

PROPOSED 1B

Hydrograph type	=	Rational	Peak discharge	=	92.93 cfs
Storm frequency	=	100 yrs	Time to peak	=	12 min
Time interval	=	1 min	Hyd. volume	=	133,816 cuft
Drainage area	=	38.910 ac	Runoff coeff.	=	0.63
Intensity	=	3.791 in/hr	Tc by User	=	12.00 min
IDF Curve	=	100-YR STORM.IDF	Asc/Rec limb fact	=	1/3

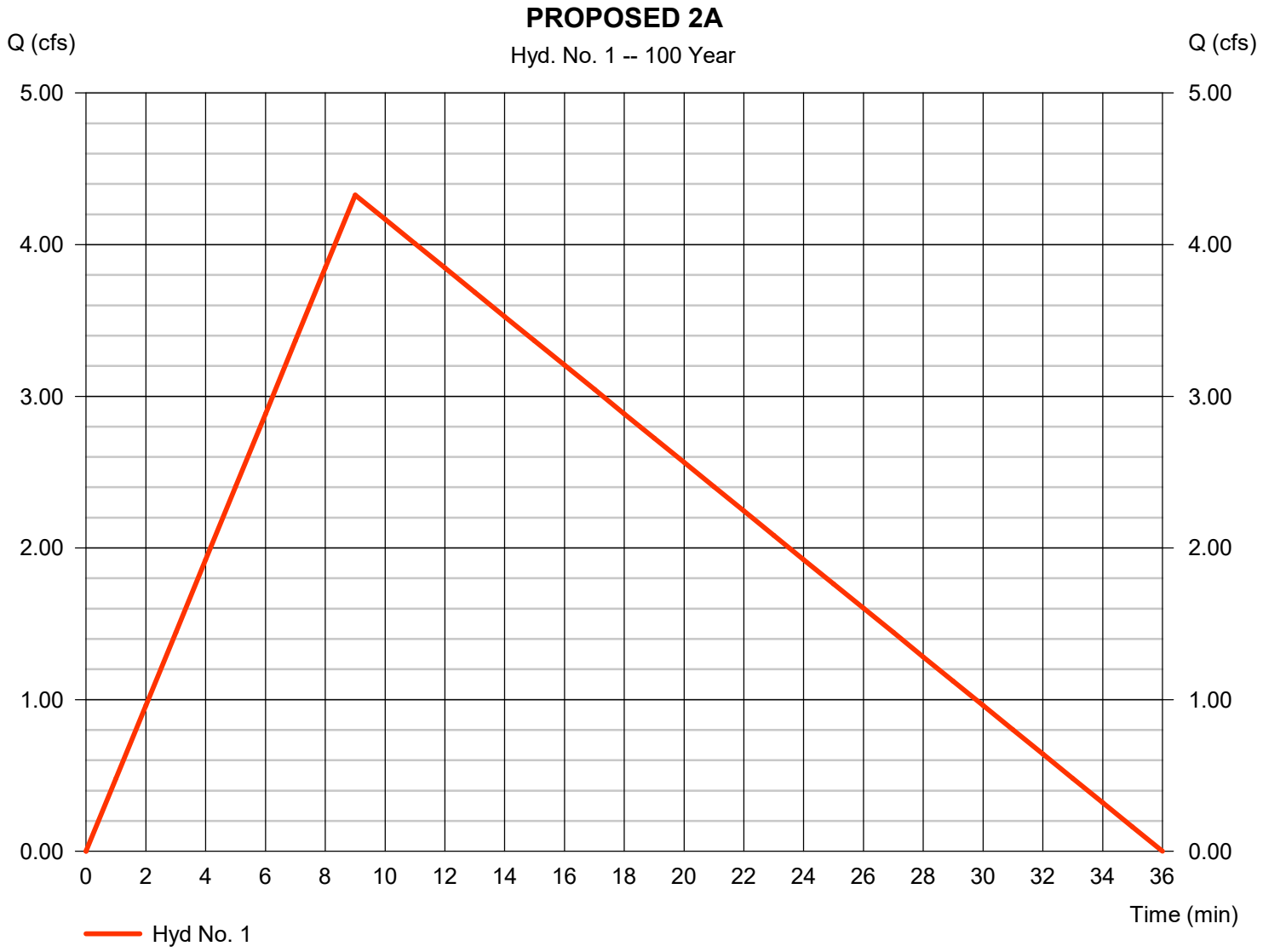
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

PROPOSED 2A

Hydrograph type	= Rational	Peak discharge	= 4.327 cfs
Storm frequency	= 100 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 4,674 cuft
Drainage area	= 1.250 ac	Runoff coeff.	= 0.79
Intensity	= 4.382 in/hr	Tc by User	= 9.00 min
IDF Curve	= 100-YR STORM.IDF	Asc/Rec limb fact	= 1/3



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

PROPOSED 2B

Hydrograph type	= Rational	Peak discharge	= 0.369 cfs
Storm frequency	= 100 yrs	Time to peak	= 7 min
Time interval	= 1 min	Hyd. volume	= 310 cuft
Drainage area	= 0.140 ac	Runoff coeff.	= 0.53
Intensity	= 4.970 in/hr	Tc by User	= 7.00 min
IDF Curve	= 100-YR STORM.IDF	Asc/Rec limb fact	= 1/3

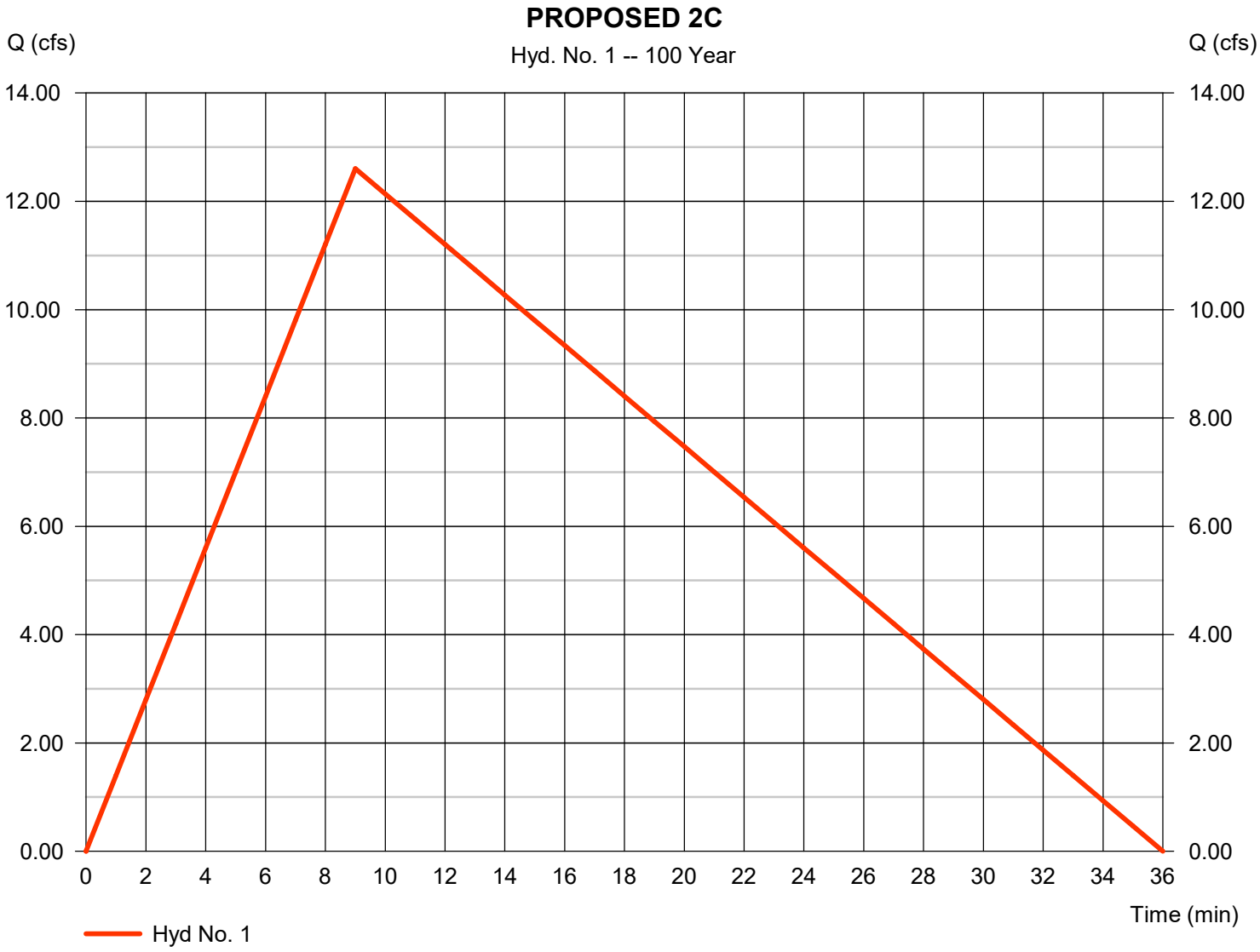
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

PROPOSED 2C

Hydrograph type	=	Rational	Peak discharge	=	12.60 cfs
Storm frequency	=	100 yrs	Time to peak	=	9 min
Time interval	=	1 min	Hyd. volume	=	13,613 cuft
Drainage area	=	4.230 ac	Runoff coeff.	=	0.68
Intensity	=	4.382 in/hr	Tc by User	=	9.00 min
IDF Curve	=	100-YR STORM.IDF	Asc/Rec limb fact	=	1/3



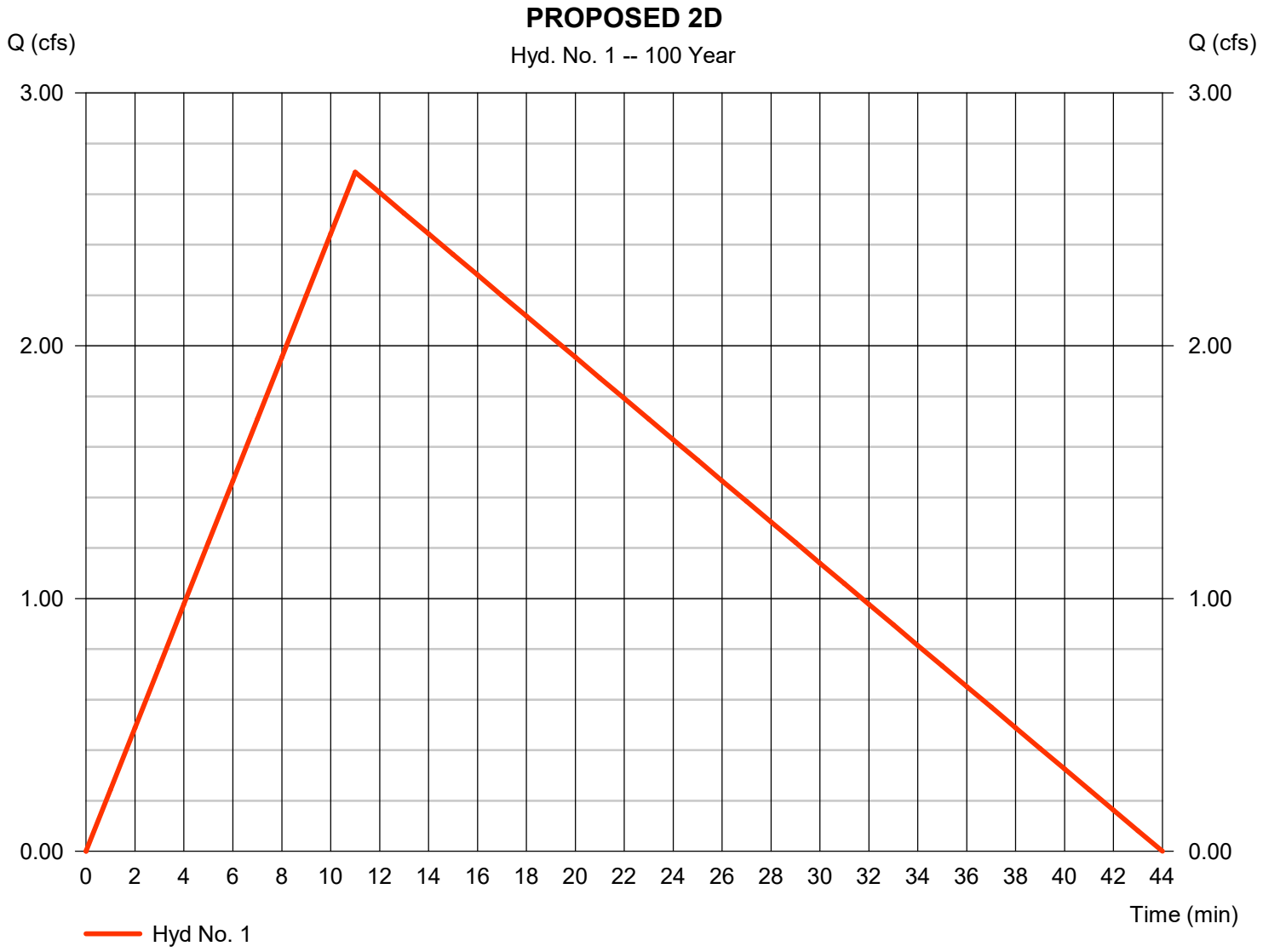
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

PROPOSED 2D

Hydrograph type	=	Rational	Peak discharge	=	2.687 cfs
Storm frequency	=	100 yrs	Time to peak	=	11 min
Time interval	=	1 min	Hyd. volume	=	3,547 cuft
Drainage area	=	1.280 ac	Runoff coeff.	=	0.53
Intensity	=	3.961 in/hr	Tc by User	=	11.00 min
IDF Curve	=	100-YR STORM.IDF	Asc/Rec limb fact	=	1/3



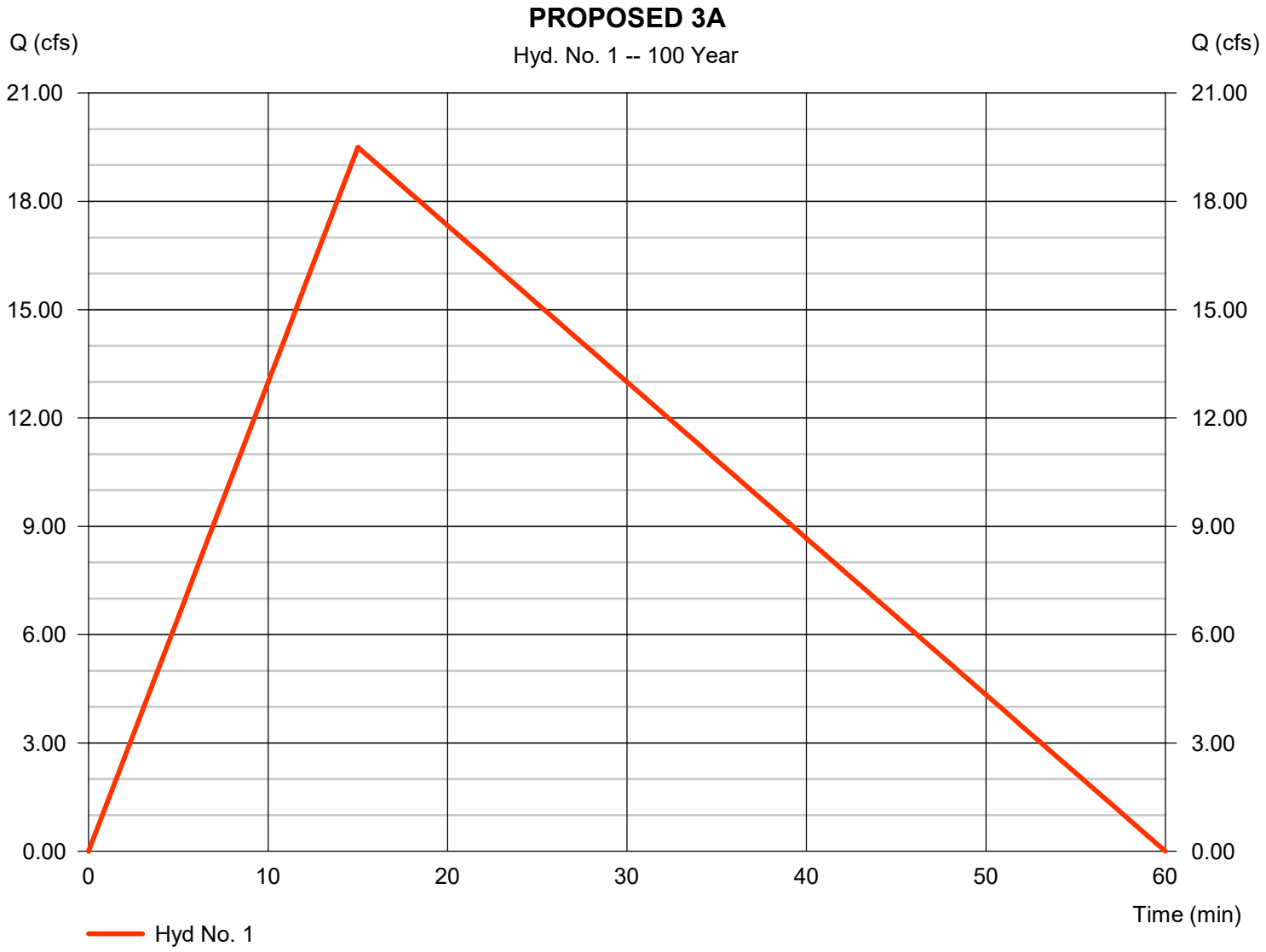
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

PROPOSED 3A

Hydrograph type	=	Rational	Peak discharge	=	19.50 cfs
Storm frequency	=	100 yrs	Time to peak	=	15 min
Time interval	=	1 min	Hyd. volume	=	35,096 cuft
Drainage area	=	8.110 ac	Runoff coeff.	=	0.71
Intensity	=	3.386 in/hr	Tc by User	=	15.00 min
IDF Curve	=	100-YR STORM.IDF	Asc/Rec limb fact	=	1/3



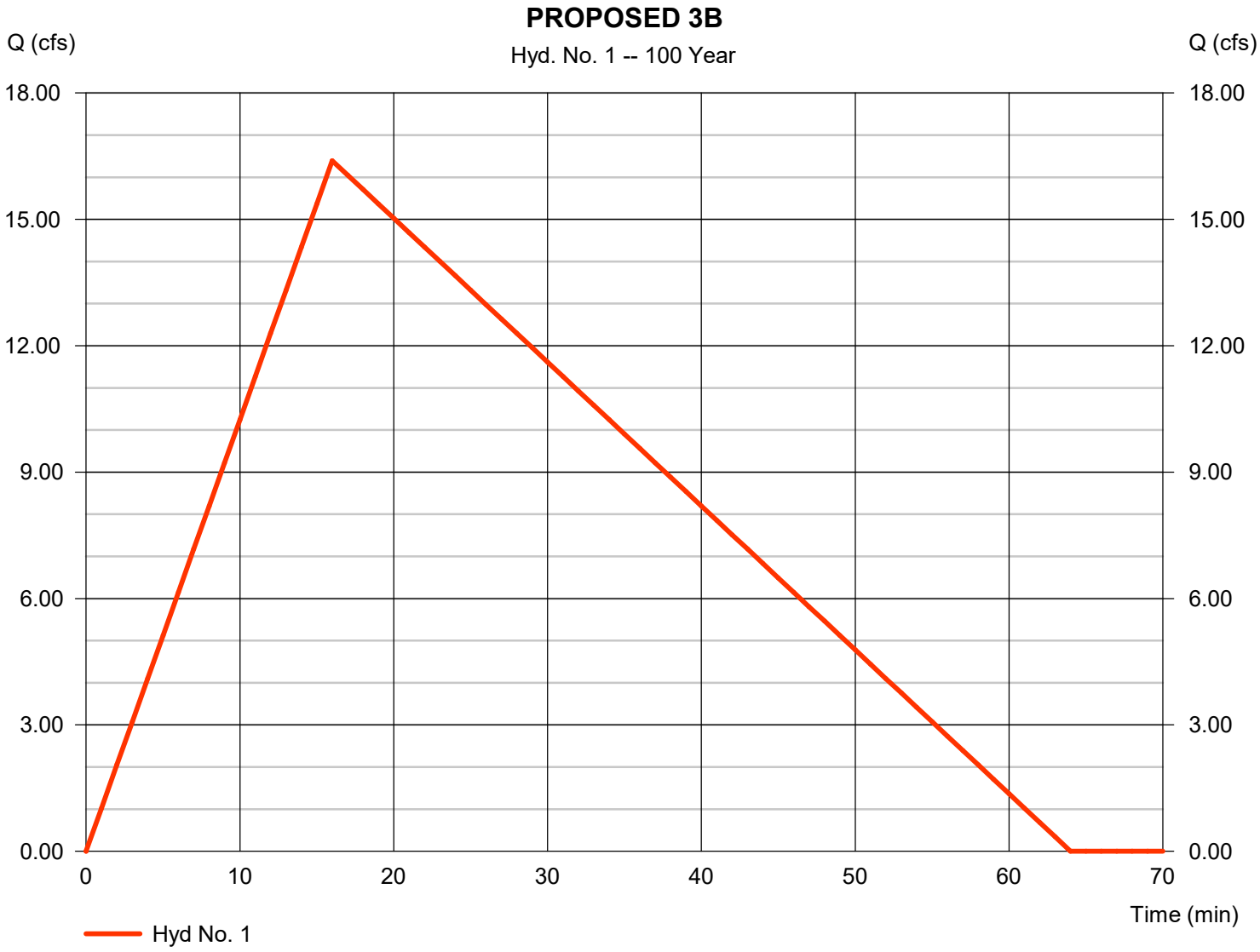
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

PROPOSED 3B

Hydrograph type	=	Rational	Peak discharge	=	16.39 cfs
Storm frequency	=	100 yrs	Time to peak	=	16 min
Time interval	=	1 min	Hyd. volume	=	31,476 cuft
Drainage area	=	7.250 ac	Runoff coeff.	=	0.69
Intensity	=	3.277 in/hr	Tc by User	=	16.00 min
IDF Curve	=	100-YR STORM.IDF	Asc/Rec limb fact	=	1/3



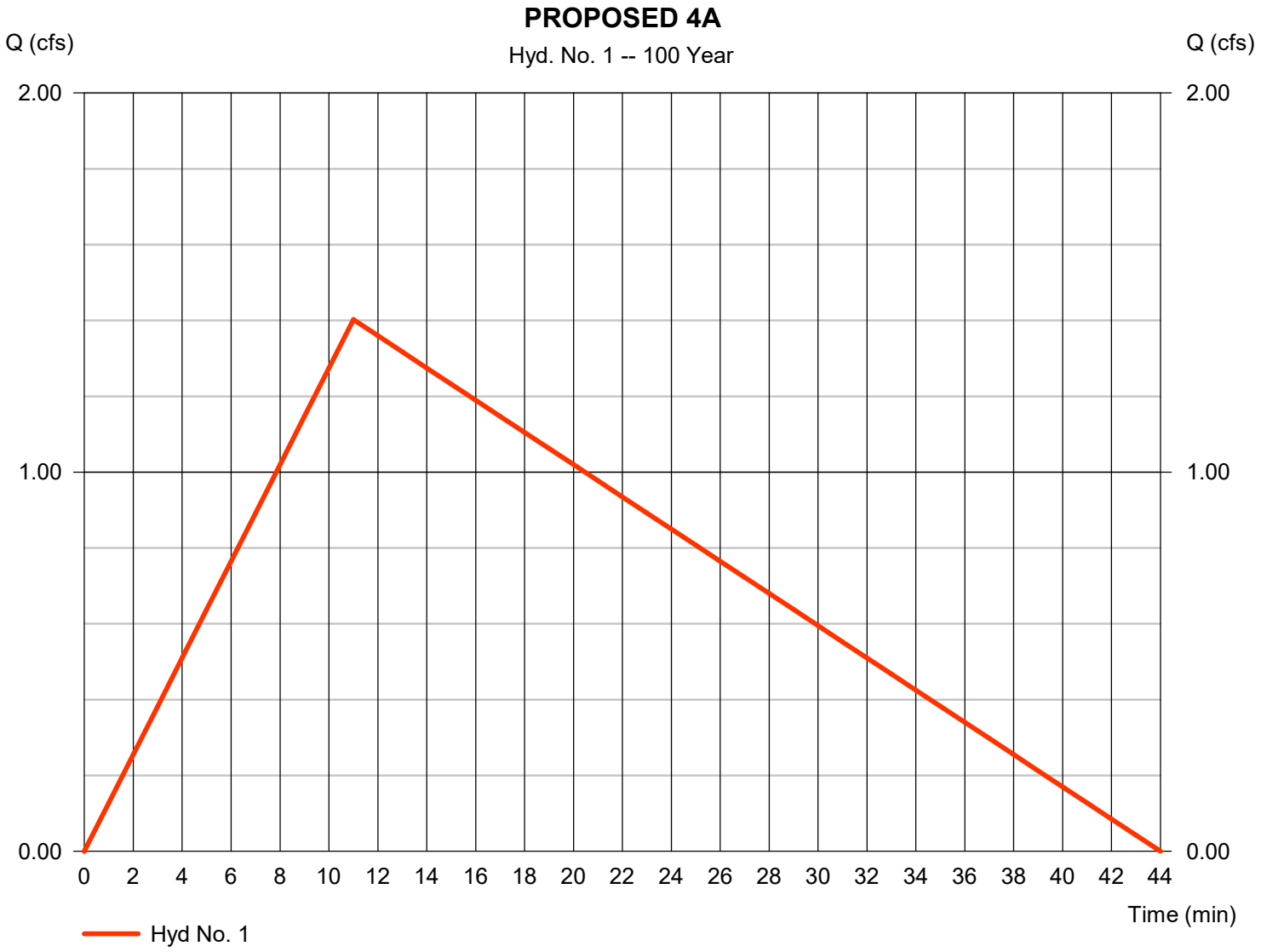
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

PROPOSED 4A

Hydrograph type	=	Rational	Peak discharge	=	1.402 cfs
Storm frequency	=	100 yrs	Time to peak	=	11 min
Time interval	=	1 min	Hyd. volume	=	1,851 cuft
Drainage area	=	0.600 ac	Runoff coeff.	=	0.59
Intensity	=	3.961 in/hr	Tc by User	=	11.00 min
IDF Curve	=	100-YR STORM.IDF	Asc/Rec limb fact	=	1/3



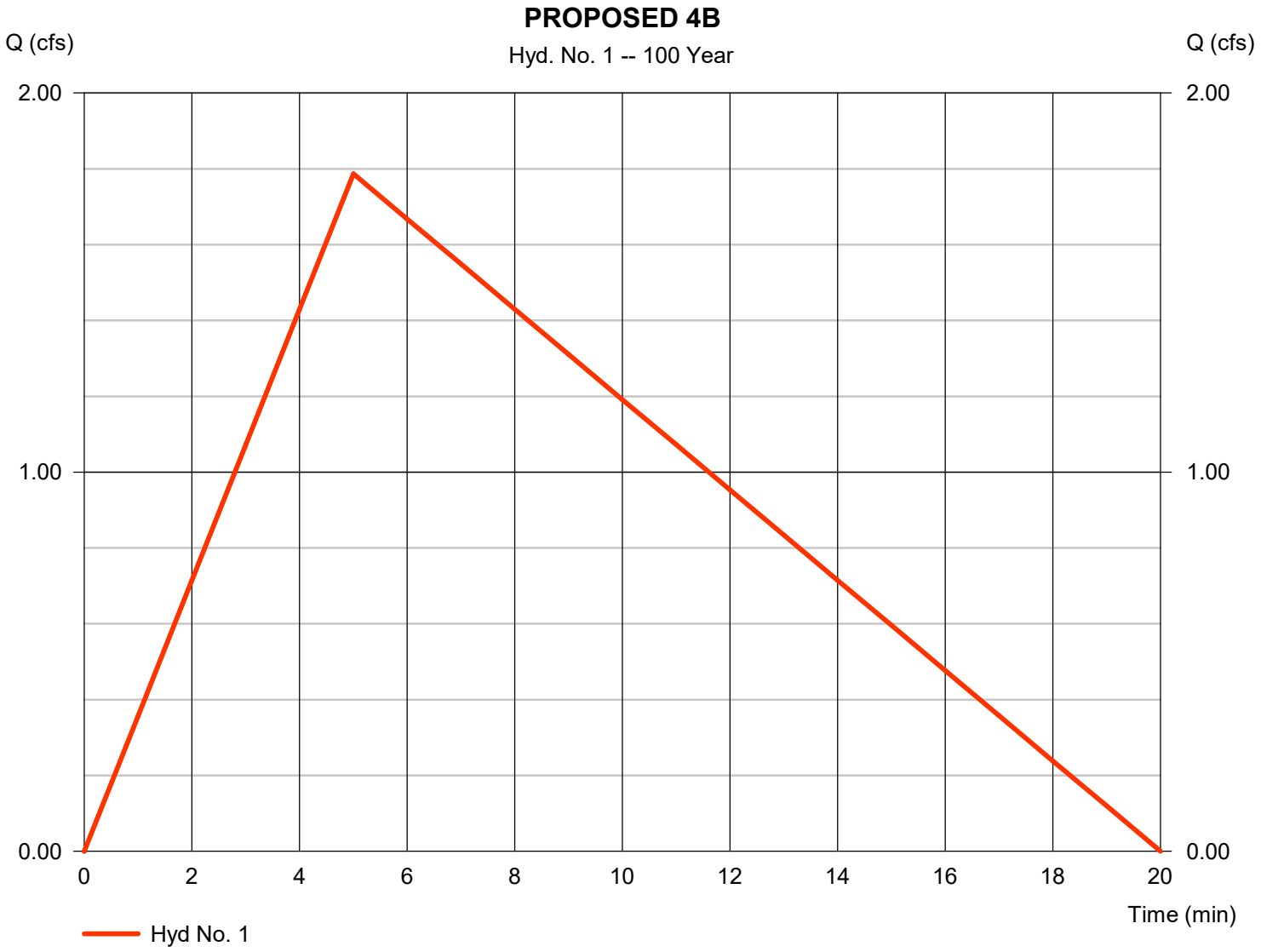
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

PROPOSED 4B

Hydrograph type	=	Rational	Peak discharge	=	1.787 cfs
Storm frequency	=	100 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	1,072 cuft
Drainage area	=	0.390 ac	Runoff coeff.	=	0.78
Intensity	=	5.874 in/hr	Tc by User	=	5.00 min
IDF Curve	=	100-YR STORM.IDF	Asc/Rec limb fact	=	1/3



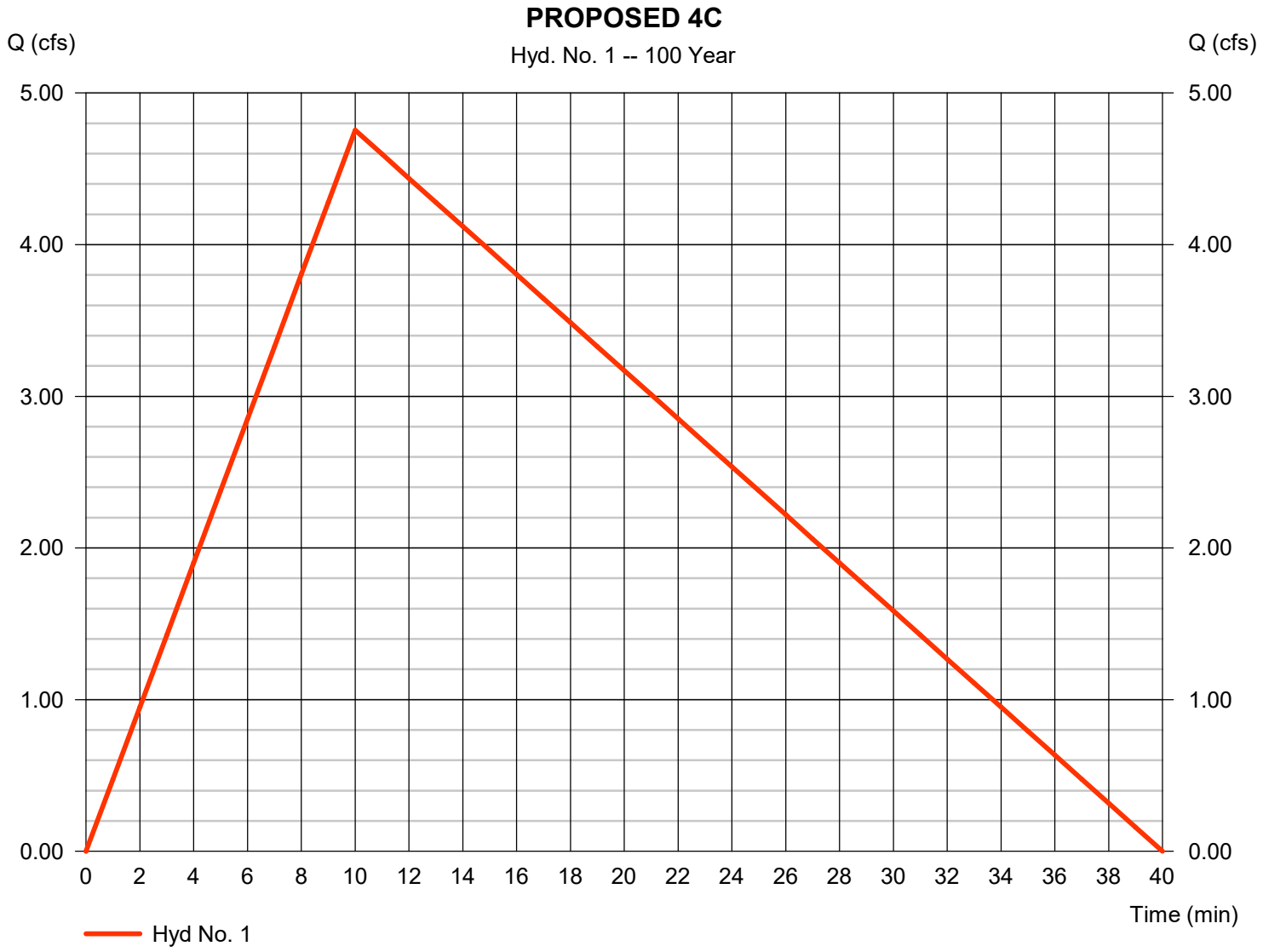
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Thursday, 10 / 21 / 2021

Hyd. No. 1

PROPOSED 4C

Hydrograph type	= Rational	Peak discharge	= 4.754 cfs
Storm frequency	= 100 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 5,705 cuft
Drainage area	= 1.760 ac	Runoff coeff.	= 0.65
Intensity	= 4.156 in/hr	Tc by User	= 10.00 min
IDF Curve	= 100-YR STORM.IDF	Asc/Rec limb fact	= 1/3



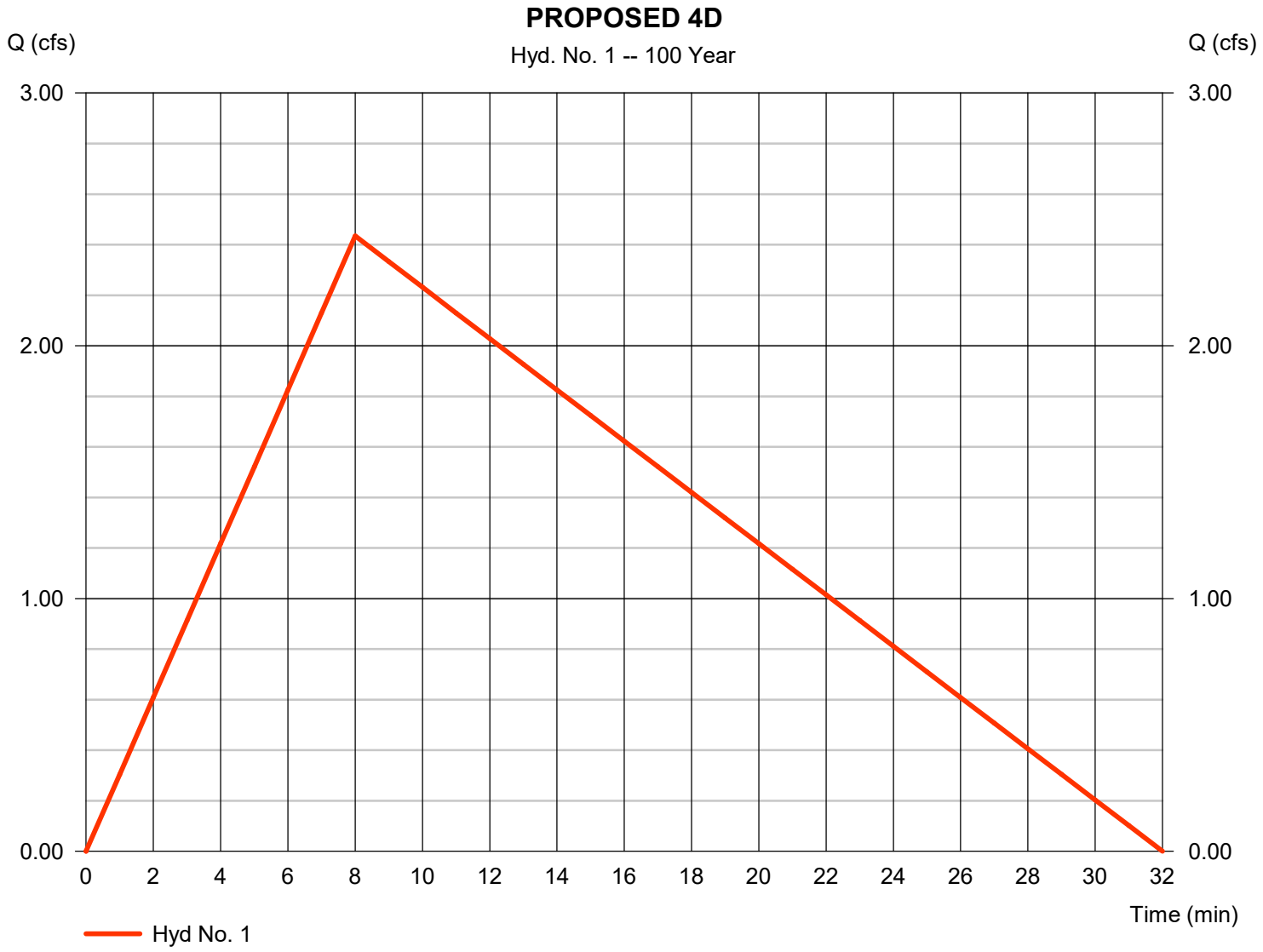
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

PROPOSED 4D

Hydrograph type	= Rational	Peak discharge	= 2.434 cfs
Storm frequency	= 100 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 2,337 cuft
Drainage area	= 0.770 ac	Runoff coeff.	= 0.68
Intensity	= 4.649 in/hr	Tc by User	= 8.00 min
IDF Curve	= 100-YR STORM.IDF	Asc/Rec limb fact	= 1/3



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Thursday, 10 / 21 / 2021

Hyd. No. 1

PROPOSED 4E

Hydrograph type	= Rational	Peak discharge	= 3.997 cfs
Storm frequency	= 100 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 4,796 cuft
Drainage area	= 1.630 ac	Runoff coeff.	= 0.59
Intensity	= 4.156 in/hr	Tc by User	= 10.00 min
IDF Curve	= 100-YR STORM.IDF	Asc/Rec limb fact	= 1/3

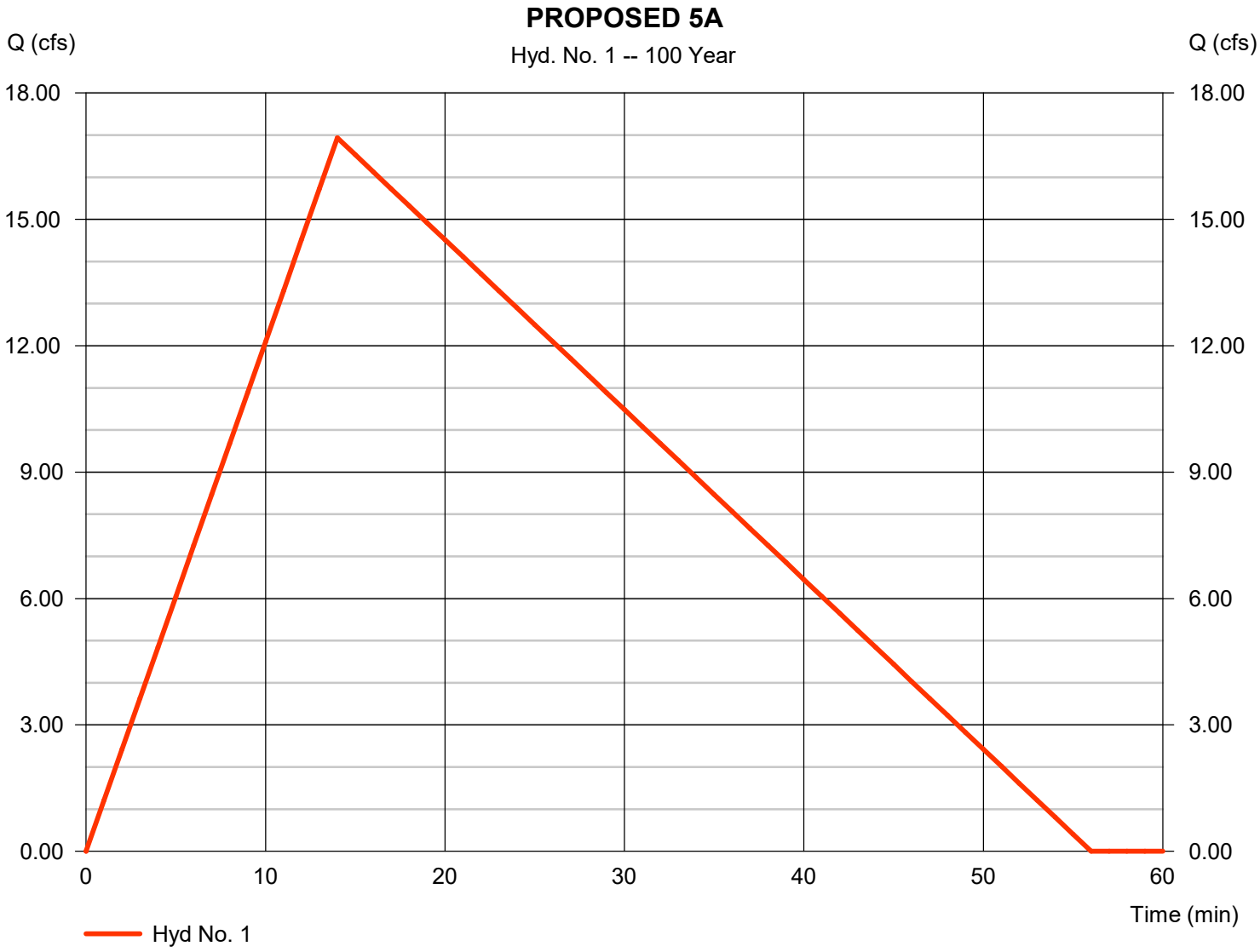
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 13 / 2021

Hyd. No. 1

PROPOSED 5A

Hydrograph type	= Rational	Peak discharge	= 16.94 cfs
Storm frequency	= 100 yrs	Time to peak	= 14 min
Time interval	= 1 min	Hyd. volume	= 28,454 cuft
Drainage area	= 6.440 ac	Runoff coeff.	= 0.75
Intensity	= 3.507 in/hr	Tc by User	= 14.00 min
IDF Curve	= 100-YR STORM.IDF	Asc/Rec limb fact	= 1/3



Appendix E – Hydrographs (For Detention Calculation)

Hydrograph Report

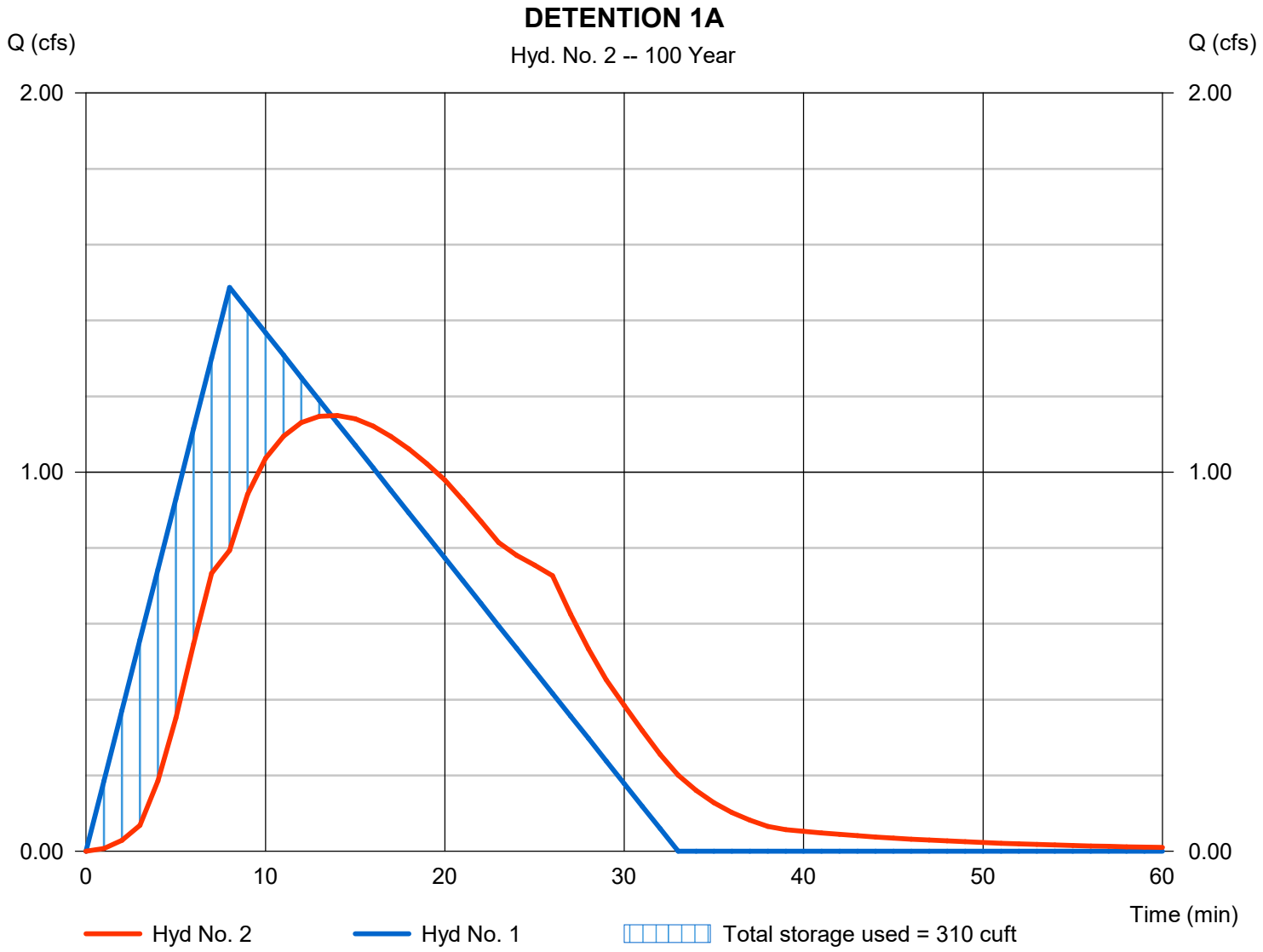
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 20 / 2021

Hyd. No. 2

DETENTION 1A

Hydrograph type	=	Reservoir	Peak discharge	=	1.149 cfs
Storm frequency	=	100 yrs	Time to peak	=	14 min
Time interval	=	1 min	Hyd. volume	=	1,471 cuft
Inflow hyd. No.	=	1 - PROPOSED 1A	Max. Elevation	=	1.71 ft
Reservoir name	=	DETENTION 1A	Max. Storage	=	310 cuft

Storage Indication method used.



Hydrograph Report

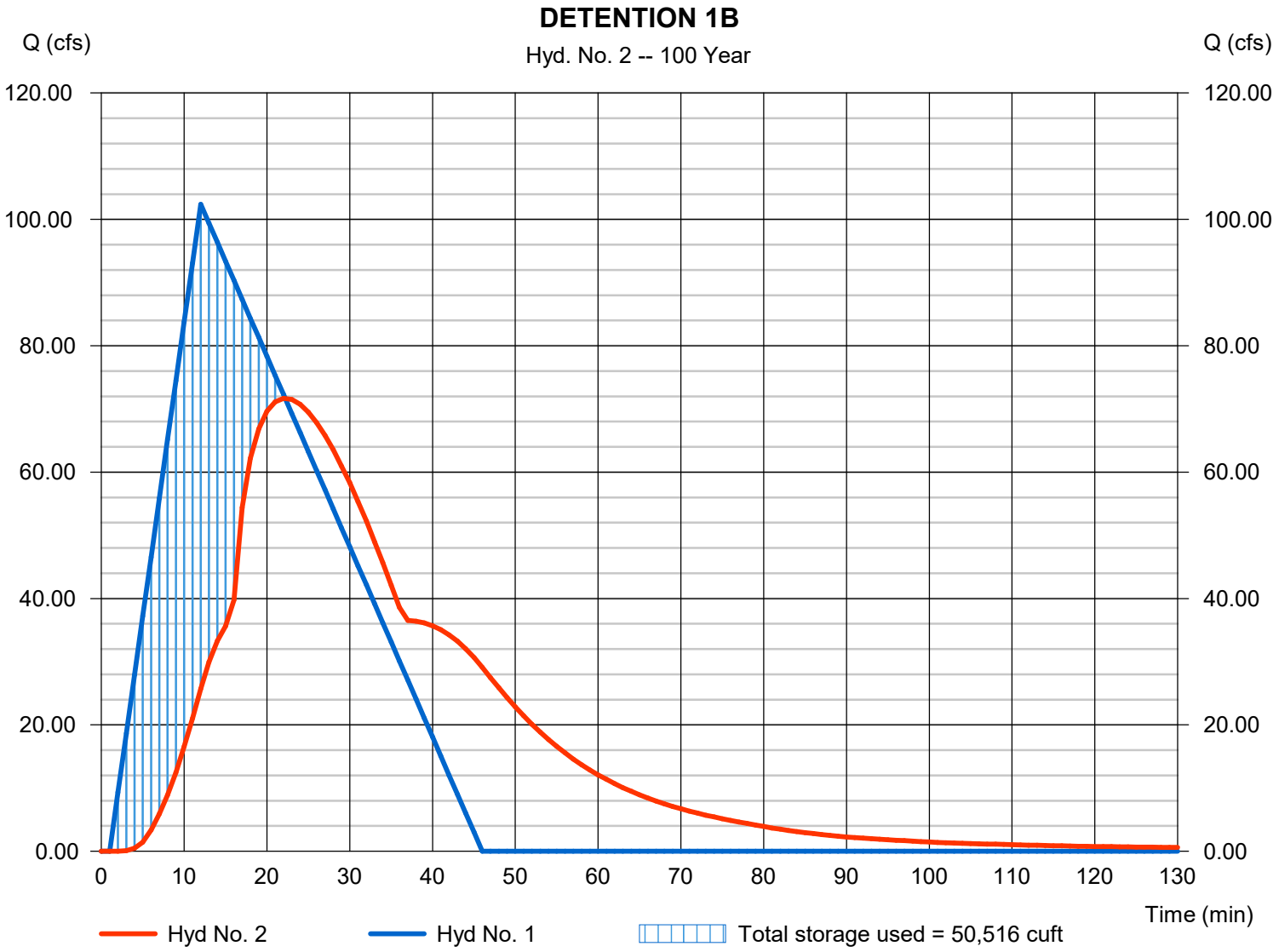
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 20 / 2021

Hyd. No. 2

DETENTION 1B

Hydrograph type	= Reservoir	Peak discharge	= 71.68 cfs
Storm frequency	= 100 yrs	Time to peak	= 22 min
Time interval	= 1 min	Hyd. volume	= 138,229 cuft
Inflow hyd. No.	= 1 - PROPOSED 1B	Max. Elevation	= 5.57 ft
Reservoir name	= DETENTION 1B	Max. Storage	= 50,516 cuft

Storage Indication method used.



Hydrograph Report

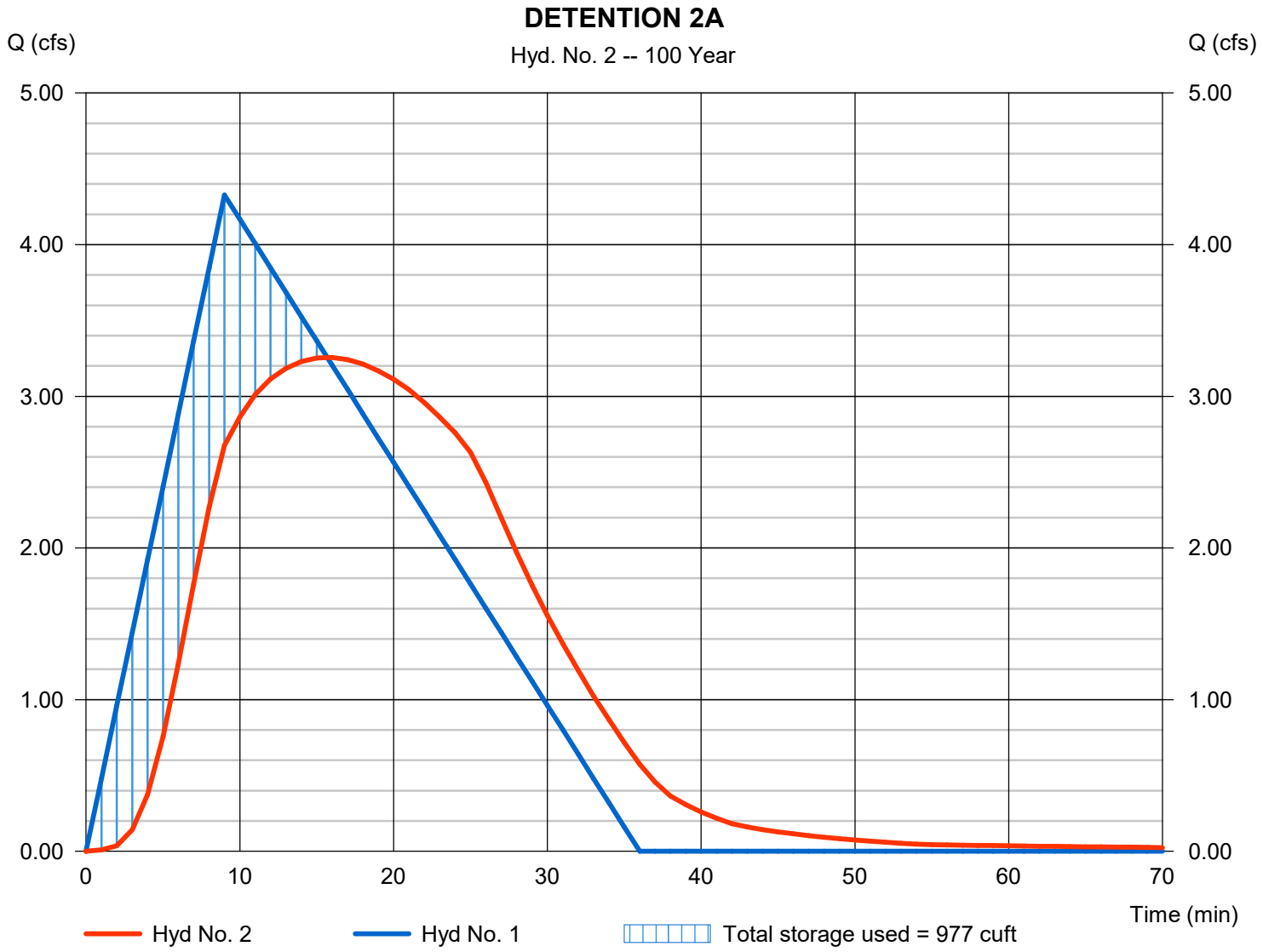
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 20 / 2021

Hyd. No. 2

DETENTION 2A

Hydrograph type	= Reservoir	Peak discharge	= 3.257 cfs
Storm frequency	= 100 yrs	Time to peak	= 16 min
Time interval	= 1 min	Hyd. volume	= 4,672 cuft
Inflow hyd. No.	= 1 - PROPOSED 2A	Max. Elevation	= 2.24 ft
Reservoir name	= DETENTION 2A	Max. Storage	= 977 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 20 / 2021

Hyd. No. 2

DETENTION 2B

Hydrograph type	=	Reservoir	Peak discharge	=	0.296 cfs
Storm frequency	=	100 yrs	Time to peak	=	8 min
Time interval	=	1 min	Hyd. volume	=	284 cuft
Inflow hyd. No.	=	1 - PROPOSED 2B	Max. Elevation	=	1.33 ft
Reservoir name	=	DETENTION 2B	Max. Storage	=	0 cuft

Storage Indication method used.

Hydrograph Report

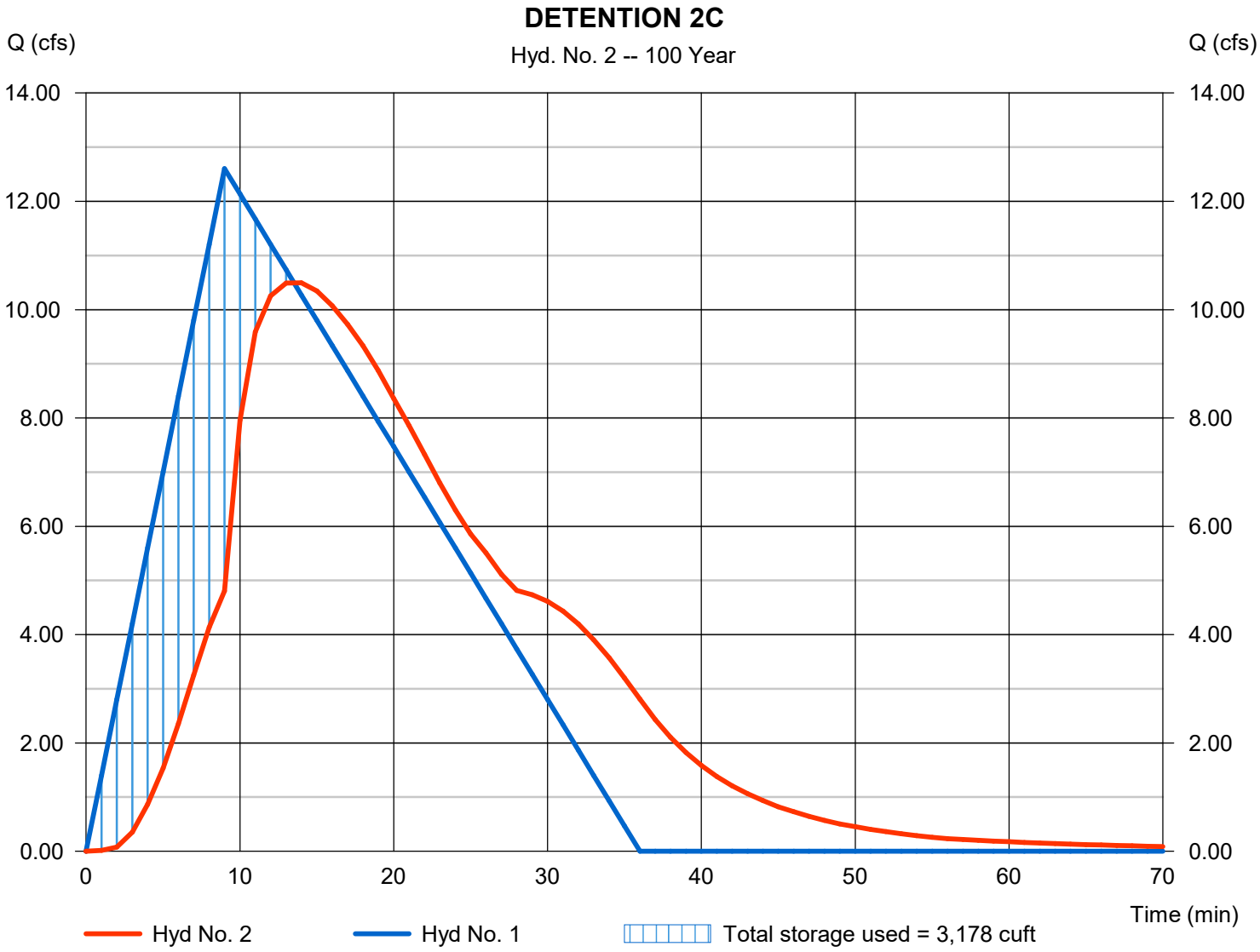
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 20 / 2021

Hyd. No. 2

DETENTION 2C

Hydrograph type	=	Reservoir	Peak discharge	=	10.50 cfs
Storm frequency	=	100 yrs	Time to peak	=	14 min
Time interval	=	1 min	Hyd. volume	=	13,611 cuft
Inflow hyd. No.	=	1 - PROPOSED 2C	Max. Elevation	=	3.12 ft
Reservoir name	=	DETENTION 2C	Max. Storage	=	3,178 cuft

Storage Indication method used.



Hydrograph Report

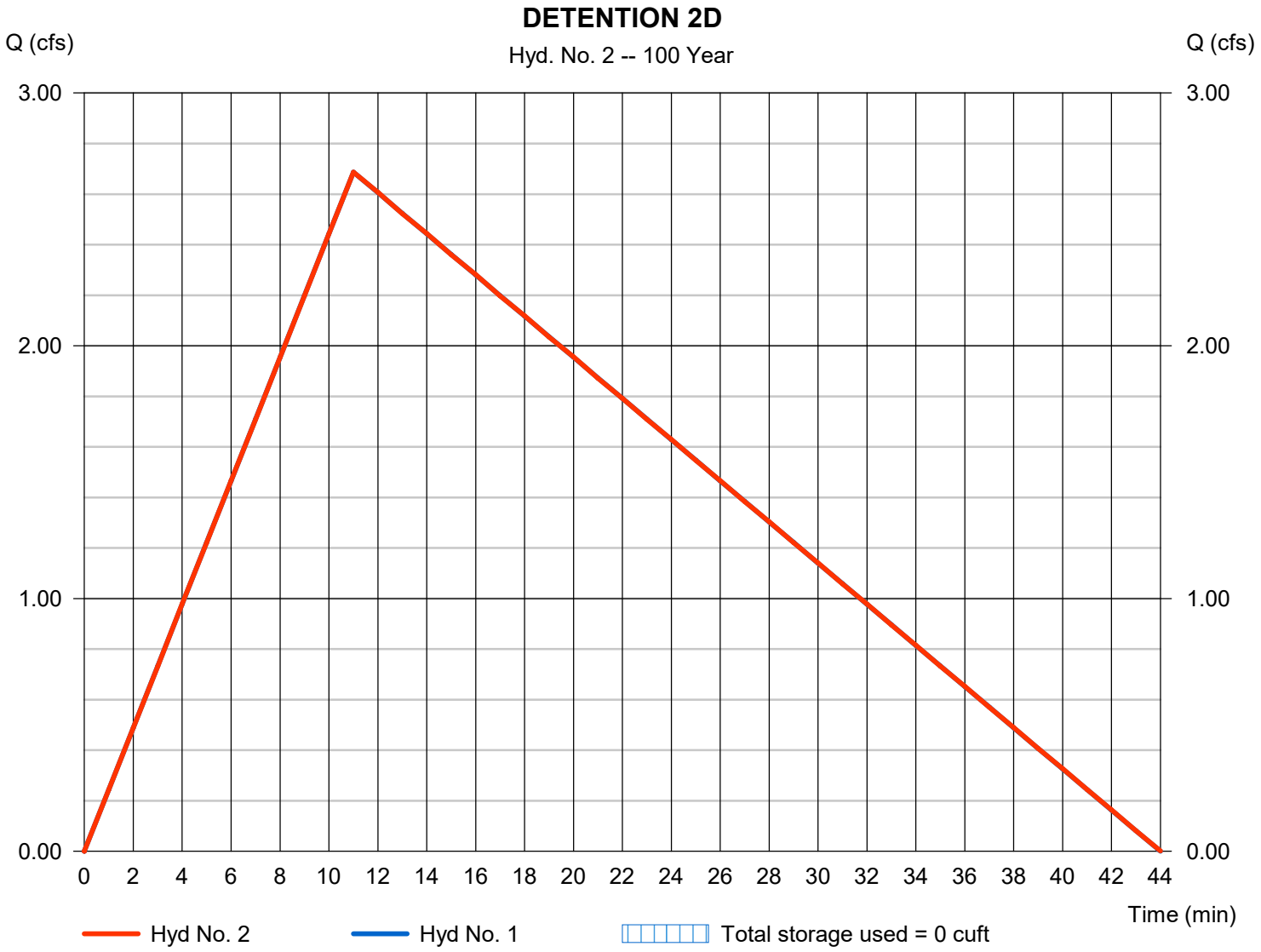
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 20 / 2021

Hyd. No. 2

DETENTION 2D

Hydrograph type	=	Reservoir	Peak discharge	=	2.686 cfs
Storm frequency	=	100 yrs	Time to peak	=	11 min
Time interval	=	1 min	Hyd. volume	=	3,547 cuft
Inflow hyd. No.	=	1 - PROPOSED 2D	Max. Elevation	=	2.74 ft
Reservoir name	=	DETENTION 2D	Max. Storage	=	0 cuft

Storage Indication method used.



Hydrograph Report

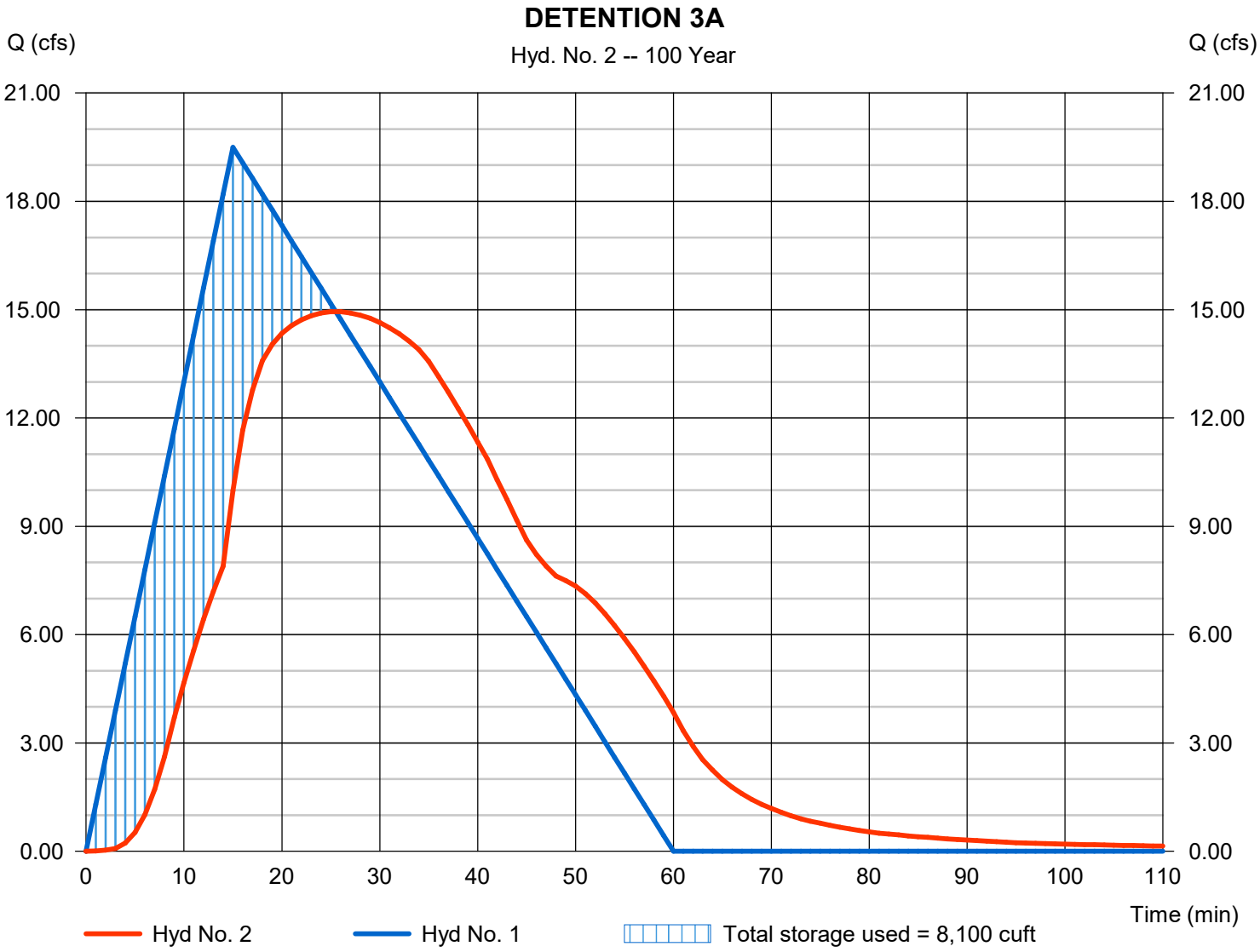
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 20 / 2021

Hyd. No. 2

DETENTION 3A

Hydrograph type	=	Reservoir	Peak discharge	=	14.94 cfs
Storm frequency	=	100 yrs	Time to peak	=	26 min
Time interval	=	1 min	Hyd. volume	=	35,091 cuft
Inflow hyd. No.	=	1 - PROPOSED 3A	Max. Elevation	=	3.54 ft
Reservoir name	=	DETENTION 3A	Max. Storage	=	8,100 cuft

Storage Indication method used.



Hydrograph Report

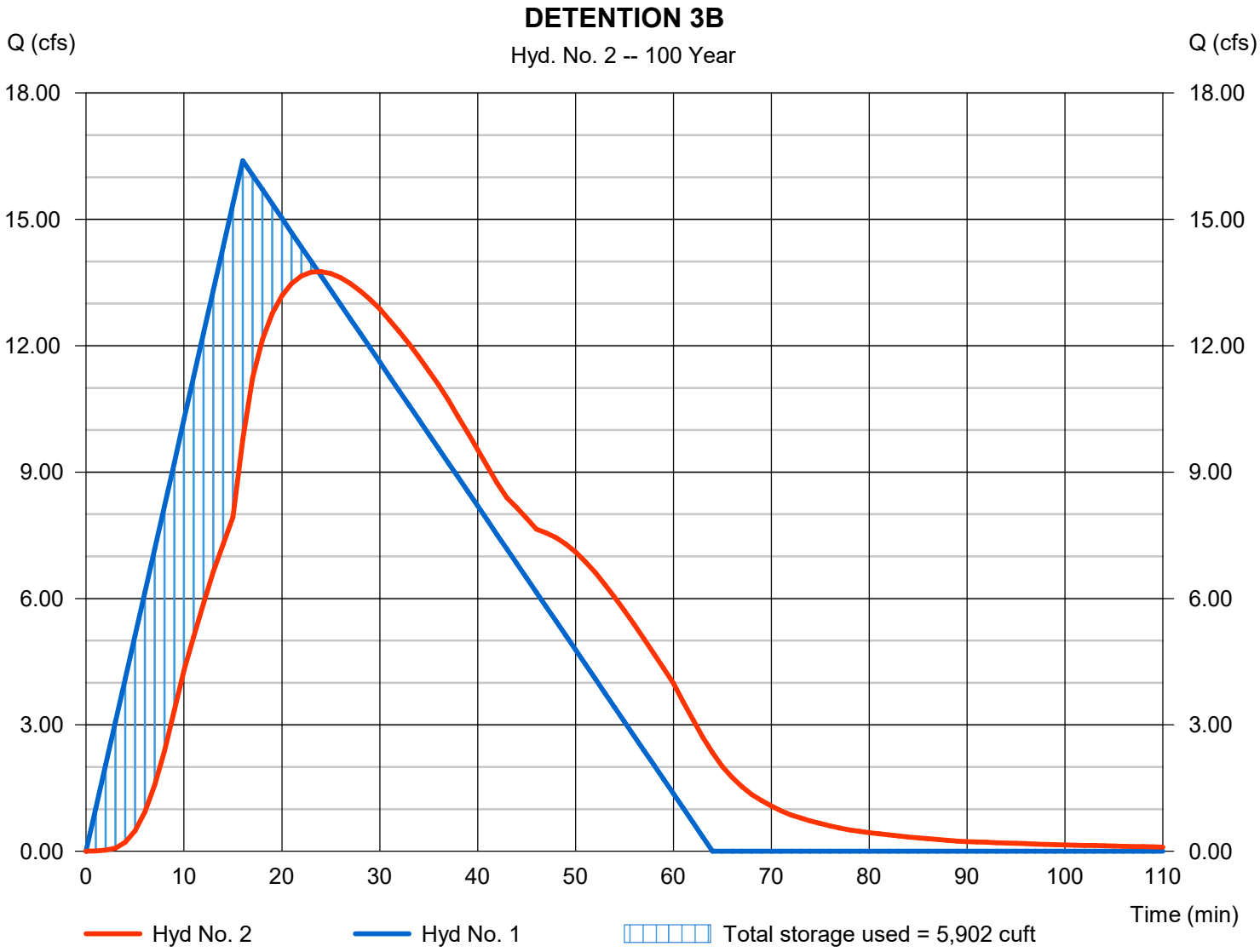
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 20 / 2021

Hyd. No. 2

DETENTION 3B

Hydrograph type	= Reservoir	Peak discharge	= 13.76 cfs
Storm frequency	= 100 yrs	Time to peak	= 24 min
Time interval	= 1 min	Hyd. volume	= 31,472 cuft
Inflow hyd. No.	= 1 - PROPOSED 3B	Max. Elevation	= 3.30 ft
Reservoir name	= DETENTION 3B	Max. Storage	= 5,902 cuft

Storage Indication method used.



Hydrograph Report

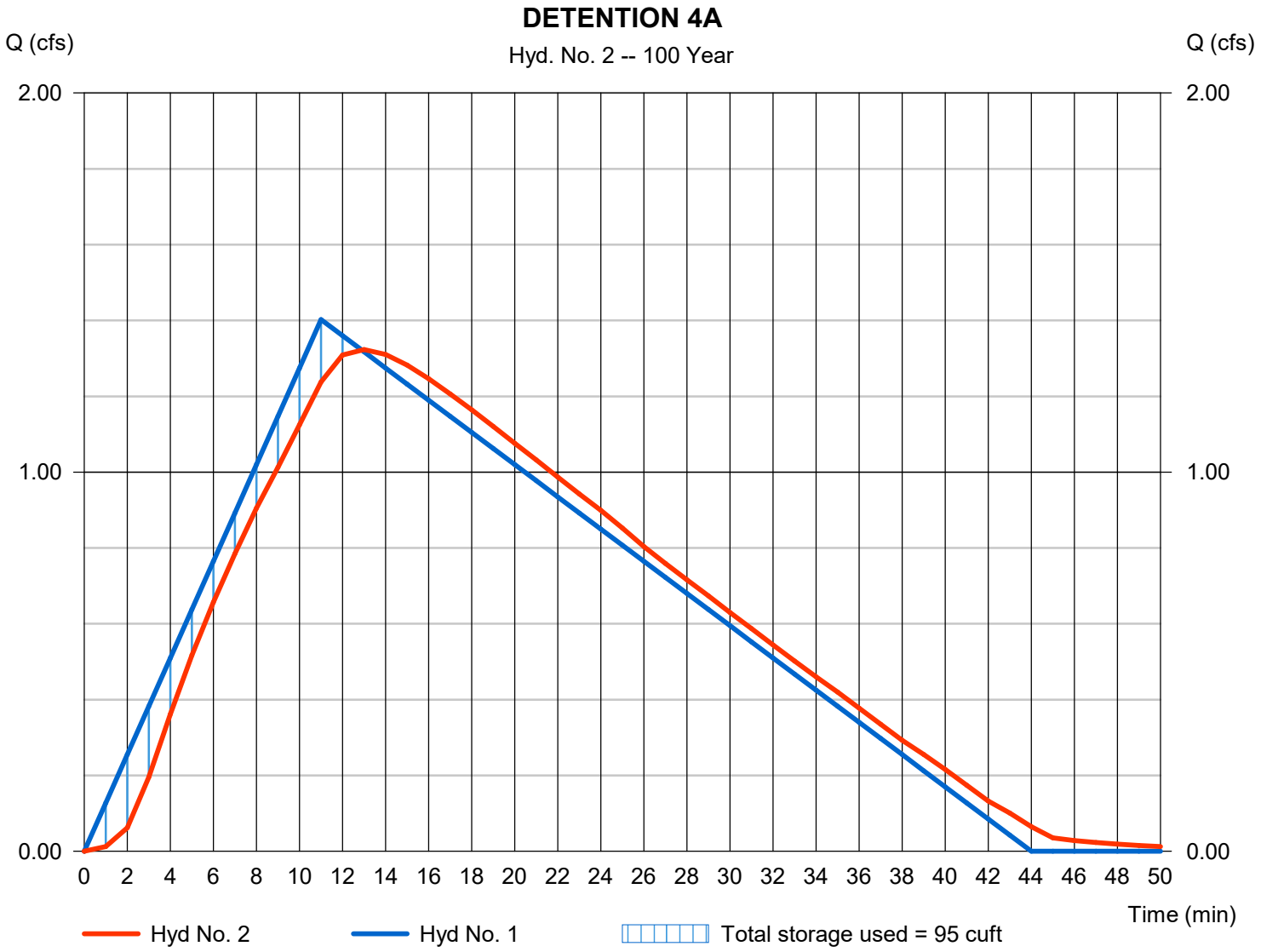
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 20 / 2021

Hyd. No. 2

DETENTION 4A

Hydrograph type	=	Reservoir	Peak discharge	=	1.323 cfs
Storm frequency	=	100 yrs	Time to peak	=	13 min
Time interval	=	1 min	Hyd. volume	=	1,851 cuft
Inflow hyd. No.	=	1 - PROPOSED 4A	Max. Elevation	=	1.96 ft
Reservoir name	=	DETENTION 4A	Max. Storage	=	95 cuft

Storage Indication method used.



Hydrograph Report

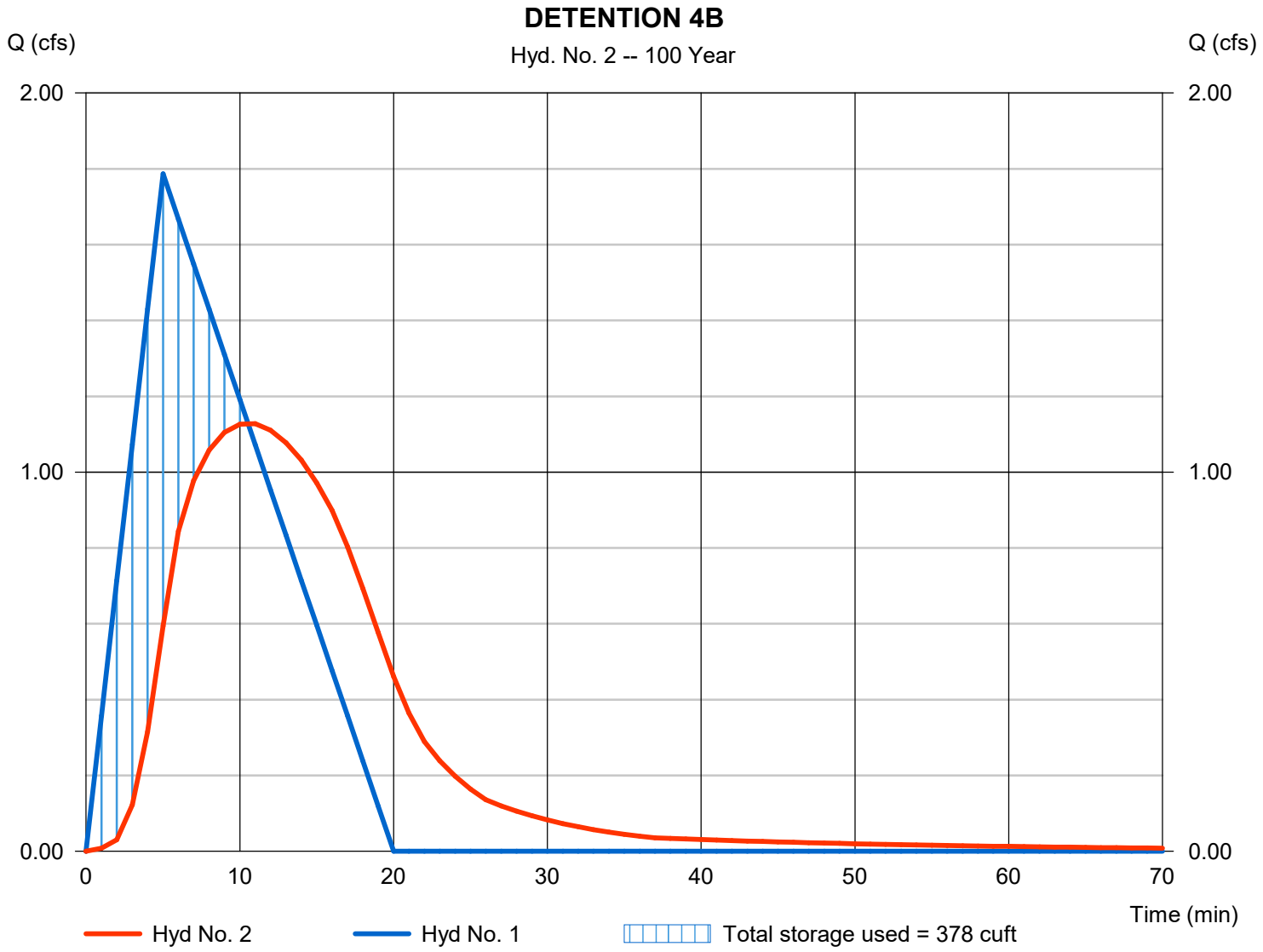
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 20 / 2021

Hyd. No. 2

DETENTION 4B

Hydrograph type	=	Reservoir	Peak discharge	=	1.127 cfs
Storm frequency	=	100 yrs	Time to peak	=	11 min
Time interval	=	1 min	Hyd. volume	=	1,071 cuft
Inflow hyd. No.	=	1 - PROPOSED 4B	Max. Elevation	=	1.79 ft
Reservoir name	=	DETENTION 4B	Max. Storage	=	378 cuft

Storage Indication method used.



Hydrograph Report

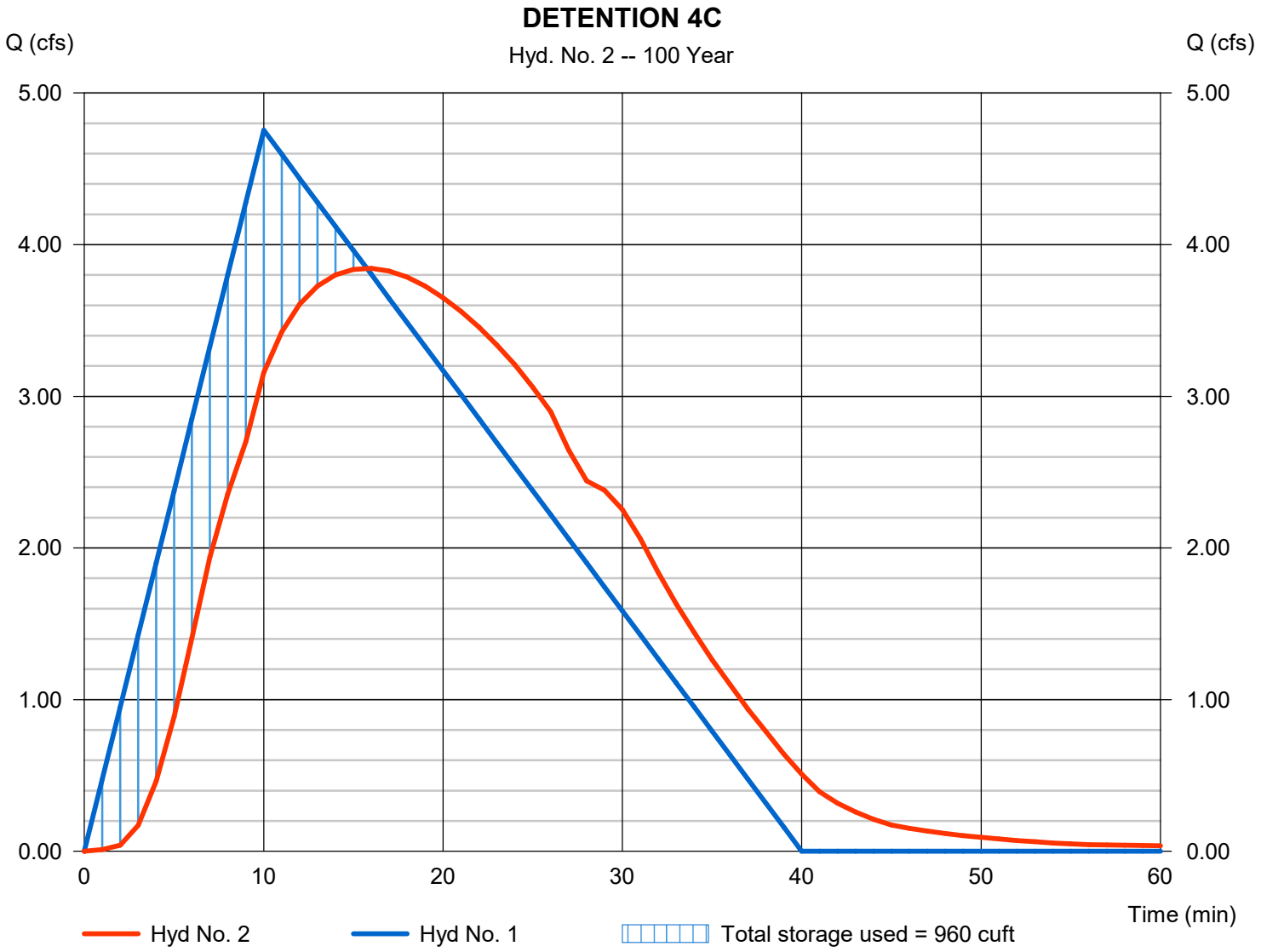
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Thursday, 10 / 21 / 2021

Hyd. No. 2

DETENTION 4C

Hydrograph type	=	Reservoir	Peak discharge	=	3.844 cfs
Storm frequency	=	100 yrs	Time to peak	=	16 min
Time interval	=	1 min	Hyd. volume	=	5,704 cuft
Inflow hyd. No.	=	1 - PROPOSED 4C	Max. Elevation	=	2.54 ft
Reservoir name	=	DETENTION 4C	Max. Storage	=	960 cuft

Storage Indication method used.



Hydrograph Report

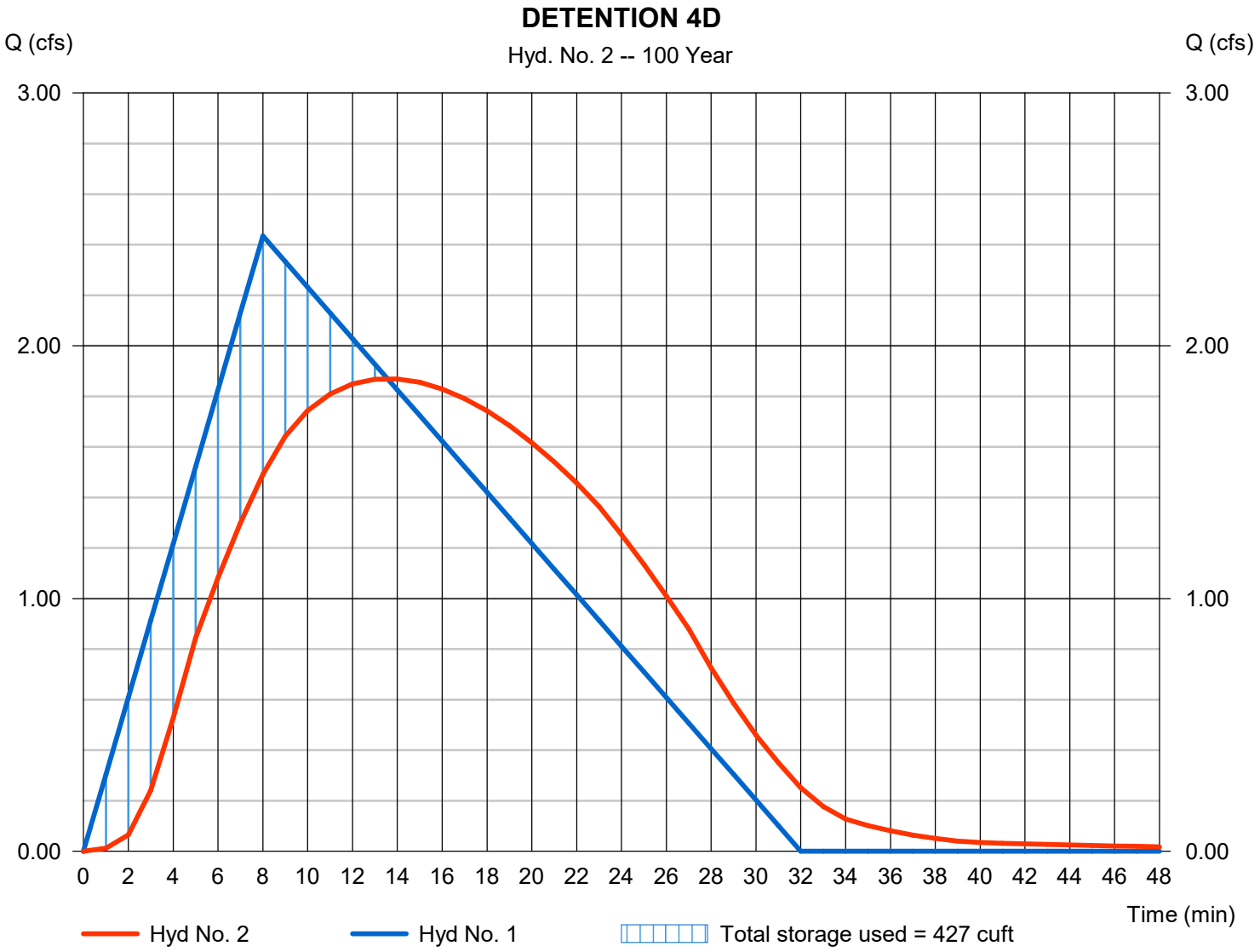
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 20 / 2021

Hyd. No. 2

DETENTION 4D

Hydrograph type	=	Reservoir	Peak discharge	=	1.869 cfs
Storm frequency	=	100 yrs	Time to peak	=	14 min
Time interval	=	1 min	Hyd. volume	=	2,336 cuft
Inflow hyd. No.	=	1 - PROPOSED 4D	Max. Elevation	=	2.58 ft
Reservoir name	=	DETENTION 4D	Max. Storage	=	427 cuft

Storage Indication method used.



Hydrograph Report

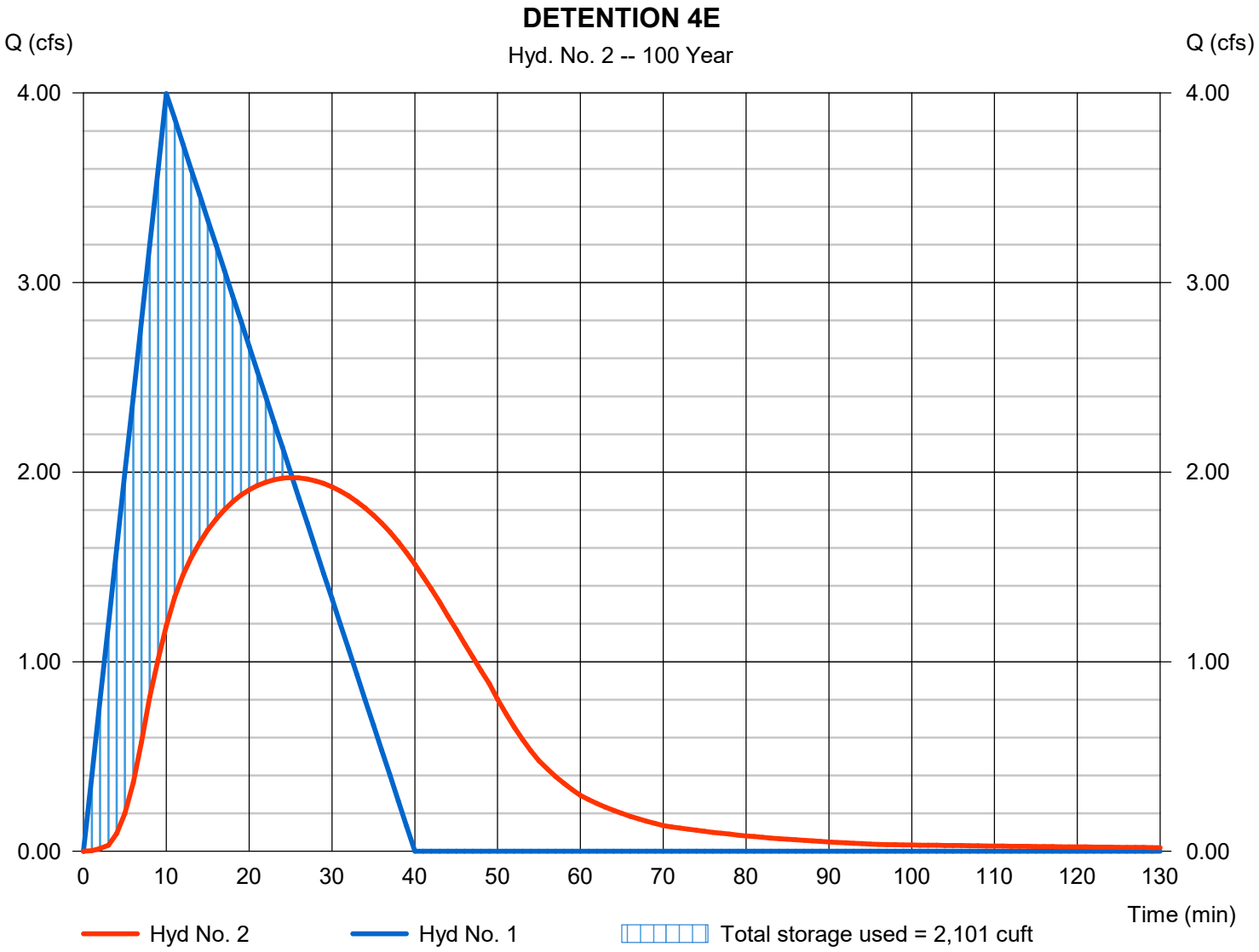
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Thursday, 10 / 21 / 2021

Hyd. No. 2

DETENTION 4E

Hydrograph type	= Reservoir	Peak discharge	= 1.971 cfs
Storm frequency	= 100 yrs	Time to peak	= 25 min
Time interval	= 1 min	Hyd. volume	= 4,793 cuft
Inflow hyd. No.	= 1 - PROPOSED 4E	Max. Elevation	= 2.71 ft
Reservoir name	= DETENTION 4E	Max. Storage	= 2,101 cuft

Storage Indication method used.



Hydrograph Report

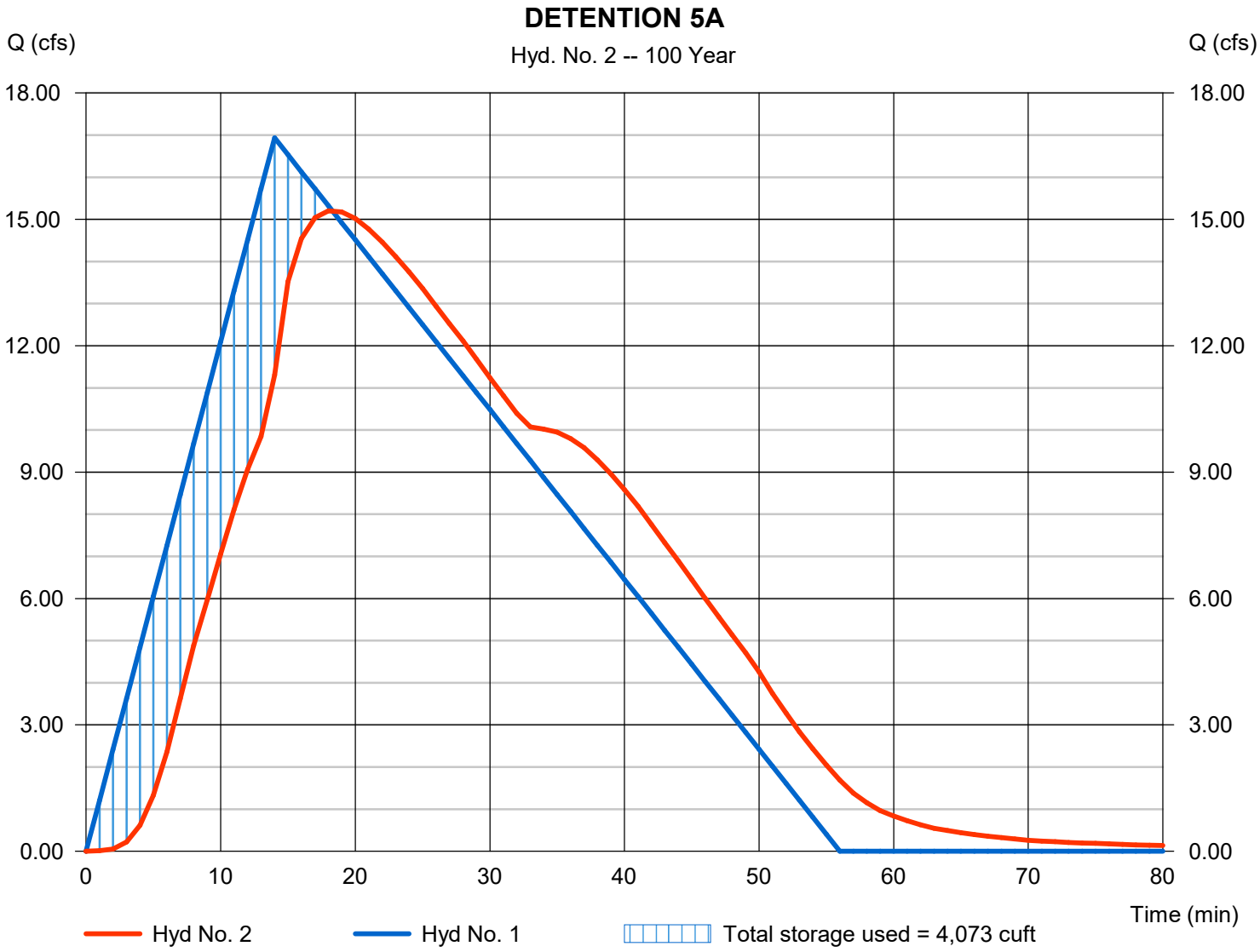
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2020 Wednesday, 10 / 20 / 2021

Hyd. No. 2

DETENTION 5A

Hydrograph type	= Reservoir	Peak discharge	= 15.20 cfs
Storm frequency	= 100 yrs	Time to peak	= 18 min
Time interval	= 1 min	Hyd. volume	= 28,451 cuft
Inflow hyd. No.	= 1 - PROPOSED 5A	Max. Elevation	= 3.32 ft
Reservoir name	= DETENTION 5A	Max. Storage	= 4,073 cuft

Storage Indication method used.



Appendix F – Sample Calculations

The Seminary
Date Prepared: 10/21/2021
Prepared By: JBD

45 Leveroni Ct
Novato, CA 94949

Existing Conditions										
Area I.D.	*Area*				*Runoff Coefficient*			Total t_C (min)	*Rainfall Intensity*	*Peak Discharge*
	Area (sf)	Area (ac)	$Area_{PERV}$ (sf)	$Area_{IMP}$ (sf)	C_{PERV}	C_{IMP}	C_{WT}		i_{100} (in/hr)	Q_{100} (cfs)
1A	24,956	0.57	14,550	10,406	0.53	0.90	0.68	9.57	4.35	1.71
1B	1,690,760	38.81	1,248,973	441,787	0.53	0.90	0.63	12.07	3.87	94.23
2A	67,505	1.55	67,505	0	0.53	0.90	0.53	10.86	4.07	3.34
2B	5,338	0.12	5,338	0	0.53	0.90	0.53	8.05	4.86	0.32
2C	218,635	5.02	190,650	27,985	0.53	0.90	0.58	9.64	4.33	12.55
2D	58,628	1.35	58,628	0	0.53	0.90	0.53	10.66	4.10	2.93
3A	321,579	7.38	223,401	98,178	0.53	0.90	0.64	12.68	3.78	17.92
3B	313,226	7.19	255,159	58,067	0.53	0.90	0.60	12.42	3.82	16.43
4A	49,388	1.13	39,110	10,278	0.53	0.90	0.61	10.09	4.20	2.89
4B	12,209	0.28	1,951	10,258	0.53	0.90	0.84	7.22	5.14	1.21
4C	71,740	1.65	61,825	9,915	0.53	0.90	0.58	9.33	4.43	4.24
4D	32,035	0.74	24,391	7,644	0.53	0.90	0.62	8.80	4.61	2.10
4E	48,195	1.11	48,195	0	0.53	0.90	0.53	13.86	3.58	2.10
5A	267,828	6.15	155,115	112,713	0.53	0.90	0.69	8.18	4.82	20.31

The Seminary
Date Prepared: 10/21/2021
Prepared By: JBD

45 Leveroni Ct
Novato, CA 94949

Proposed Conditions										
Area I.D.	*Area*				*Runoff Coefficient*			Total t_C (min)	*Rainfall Intensity*	*Peak Discharge*
	Area (sf)	Area (ac)	$Area_{PERV}$ (sf)	$Area_{IMP}$ (sf)	C_{PERV}	C_{IMP}	C_{WT}		i_{100} (in/hr)	Q_{100} (cfs)
1A	23,720	0.54	11,135	12,585	0.53	0.90	0.73	9.29	4.45	**1.76**
1B	1,694,805	38.91	1,232,085	462,720	0.53	0.90	0.63	12.28	3.84	**94.28**
2A	54,365	1.25	16,225	38,140	0.53	0.90	0.79	8.54	4.70	**4.63**
2B	5,915	0.14	5,915	0	0.53	0.90	0.53	6.99	5.22	**0.38**
2C	184,185	4.23	110,275	73,910	0.53	0.90	0.68	8.90	4.58	**13.13**
2D	55,560	1.28	55,560	0	0.53	0.90	0.53	10.66	4.10	**2.77**
3A	353,365	8.11	184,435	168,930	0.53	0.90	0.71	15.46	3.37	**19.31**
3B	315,945	7.25	176,415	139,530	0.53	0.90	0.69	16.42	3.30	**16.61**
4A	25,955	0.60	22,040	3,915	0.53	0.90	0.59	10.68	4.10	**1.43**
4B	16,910	0.39	5,610	11,300	0.53	0.90	0.78	0.71	5.88	**1.77**
4C	76,810	1.76	51,500	25,310	0.53	0.90	0.65	10.258	4.17	**4.79**
4D	33,750	0.77	19,810	13,940	0.53	0.90	0.68	8.21	4.81	**2.54**
4E	70,795	1.63	59,570	11,225	0.53	0.90	0.59	10.04	4.20	**4.02**
5A	280,660	6.44	111,795	168,865	0.53	0.90	0.75	13.85	3.59	**17.39**

COUNTY OF MARIN
DEPARTMENT OF PUBLIC WORKS

HYDROLOGY MANUAL
SIMPLIFIED INSTRUCTIONS

(Revision: 8/2/00)

The instructions:

1. Determine the Time of Concentration (t_c)

$$t_c = \frac{1.8(1.1-C)\sqrt{L}}{\sqrt[3]{S(100)}} + 5Min$$

C = Runoff Coefficient *

L = Longest run in feet

S = Average Slope in ft/ft $= \frac{\Delta H}{L}$

2. Determine Zone from Map V
3. Determine I_{60} from Map I
4. From appropriate Zone Chart (Chart K), find correct curve using the I_{60} and 1 hour intersect.
5. Follow this curve to the t_c intersect.
6. Read i on Y-axis.
7. Utilize this value into $Q=CiA$

   C = Runoff Coefficient *

   i = Intensity (I_{60})

   A = Drainage Area in Acres

   Q = Discharge/Capacity in Cubic Feet per Second (cfs)

* There is often much discussion as to what value to use for "C" for a specific site. What we are concerned with here, however, is the major event. These often occur in the mid to late season and after one or more days of light rainfall. Thus the ground is close to saturation and "C" is approaching 1.0. To cut to the chase, we recommend a "C" value of at least 0.7.

Figure 819.2A

Runoff Coefficients for Undeveloped Areas

Watershed Types

	Extreme	High	Normal	Low
Relief	.28 -.35 Steep, rugged terrain with average slopes above 30%	.20 -.28 Hilly, with average slopes of 10 to 30%	.14 -.20 Rolling, with average slopes of 5 to 10%	.08 -.14 Relatively flat land, with average slopes of 0 to 5%
Soil Infiltration	.12 -.16 No effective soil cover, either rock or thin soil mantle of negligible infiltration capacity	.08 -.12 Slow to take up water, clay or shallow loam soils of low infiltration capacity, imperfectly or poorly drained	.06 -.08 Normal; well drained light or medium textured soils, sandy loams, silt and silt loams	.04 -.06 High; deep sand or other soil that takes up water readily, very light well drained soils
Vegetal Cover	.12 -.16 No effective plant cover, bare or very sparse cover	.08 -.12 Poor to fair; clean cultivation crops, or poor natural cover, less than 20% of drainage area over good cover	.06 -.08 Fair to good; about 50% of area in good grassland or woodland, not more than 50% of area in cultivated crops	.04 -.06 Good to excellent; about 90% of drainage area in good grassland, woodland or equivalent cover
Surface Storage	.10 -.12 Negligible surface depression few and shallow; drainageways steep and small, no marshes	.08 -.10 Low; well defined system of small drainageways; no ponds or marshes	.06 -.08 Normal; considerable surface depression storage; lakes and pond marshes	.04 -.06 High; surface storage, high; drainage system not sharply defined; large flood plain storage or large number of ponds or marshes

Given An undeveloped watershed consisting of;
1) rolling terrain with average slopes of 5%,
2) clay type soils,
3) good grassland area, and
4) normal surface depressions.

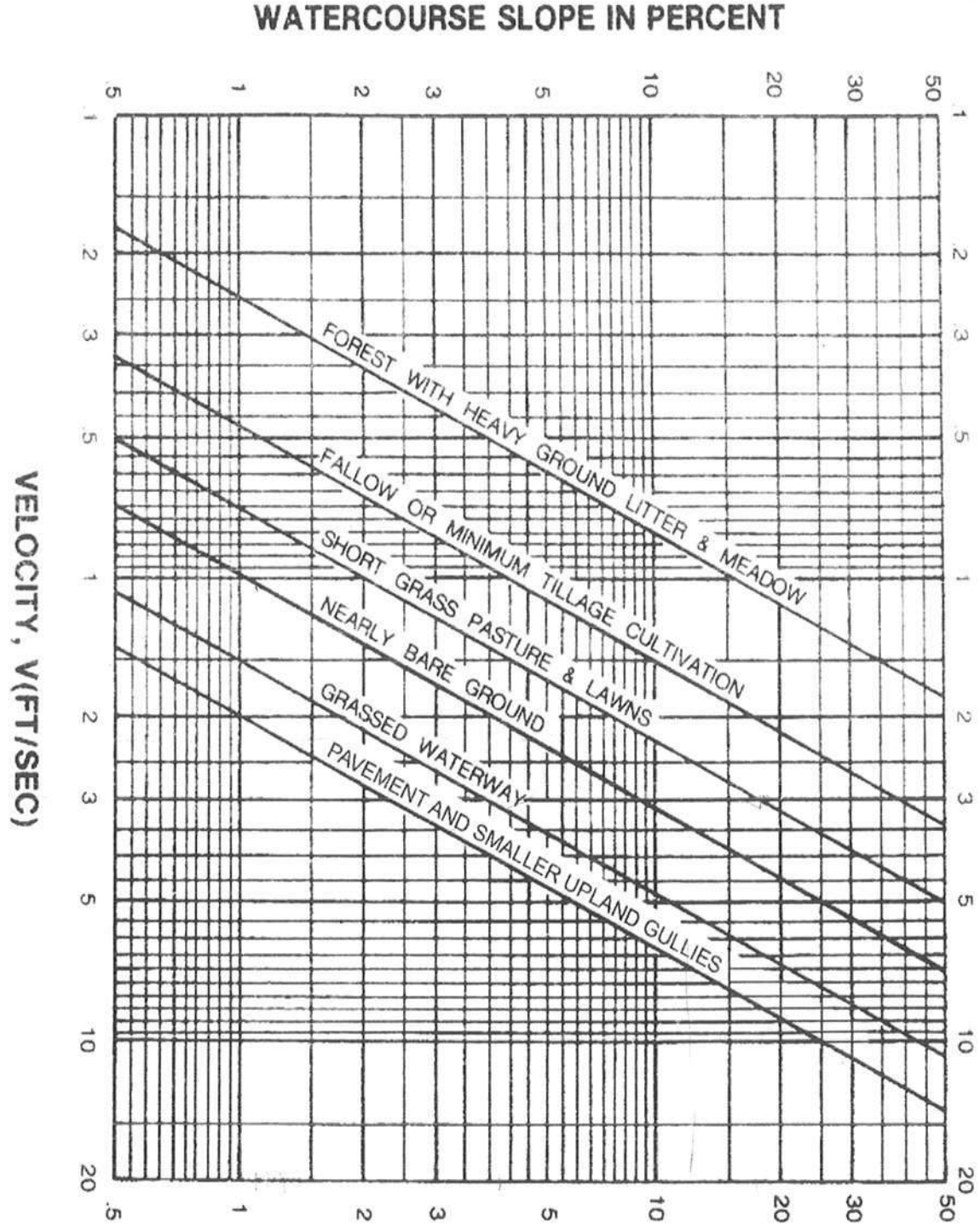
Solution:

Relief	0.14
Soil Infiltration	0.08
Vegetal Cover	0.04
Surface Storage	0.06
C=	0.32

Find The runoff coefficient, C, for the above watershed.

Figure 816.6

Velocities for Upland Method of Estimating Travel Time for Shallow Concentrated Flow



NOAA Atlas 14, Volume 6, Version 2
Location name: Mill Valley, California, USA*
Latitude: 37.8894°, Longitude: -122.5118°
Elevation: 13.73 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.91 (1.69-2.16)	2.38 (2.11-2.70)	3.04 (2.69-3.46)	3.61 (3.17-4.15)	4.45 (3.74-5.33)	5.14 (4.22-6.31)	5.88 (4.69-7.44)	6.68 (5.16-8.75)	7.86 (5.77-10.8)	8.84 (6.24-12.7)
10-min	1.36 (1.22-1.55)	1.70 (1.51-1.93)	2.18 (1.93-2.48)	2.59 (2.27-2.98)	3.19 (2.69-3.82)	3.68 (3.02-4.52)	4.21 (3.36-5.33)	4.79 (3.70-6.28)	5.63 (4.14-7.75)	6.34 (4.47-9.08)
15-min	1.10 (0.980-1.25)	1.37 (1.22-1.56)	1.76 (1.56-2.00)	2.08 (1.83-2.40)	2.57 (2.17-3.08)	2.97 (2.44-3.65)	3.40 (2.71-4.30)	3.86 (2.98-5.06)	4.54 (3.34-6.25)	5.11 (3.60-7.32)
30-min	0.770 (0.686-0.874)	0.960 (0.856-1.09)	1.23 (1.09-1.40)	1.46 (1.28-1.68)	1.80 (1.52-2.16)	2.08 (1.71-2.55)	2.38 (1.90-3.01)	2.71 (2.09-3.54)	3.18 (2.34-4.38)	3.58 (2.52-5.13)
60-min	0.541 (0.482-0.614)	0.675 (0.601-0.766)	0.863 (0.766-0.983)	1.03 (0.902-1.18)	1.26 (1.07-1.52)	1.46 (1.20-1.80)	1.67 (1.33-2.12)	1.90 (1.47-2.49)	2.24 (1.64-3.08)	2.52 (1.77-3.60)
2-hr	0.398 (0.354-0.451)	0.494 (0.440-0.561)	0.631 (0.560-0.718)	0.750 (0.659-0.863)	0.926 (0.780-1.11)	1.07 (0.881-1.32)	1.23 (0.982-1.56)	1.40 (1.08-1.84)	1.66 (1.22-2.28)	1.87 (1.32-2.68)
3-hr	0.337 (0.300-0.382)	0.418 (0.372-0.475)	0.533 (0.473-0.607)	0.634 (0.556-0.729)	0.782 (0.659-0.936)	0.904 (0.744-1.11)	1.04 (0.828-1.31)	1.18 (0.914-1.55)	1.40 (1.03-1.92)	1.58 (1.11-2.26)
6-hr	0.243 (0.217-0.276)	0.303 (0.270-0.344)	0.387 (0.344-0.441)	0.460 (0.404-0.530)	0.567 (0.478-0.679)	0.654 (0.538-0.804)	0.748 (0.597-0.947)	0.851 (0.657-1.11)	1.00 (0.734-1.38)	1.12 (0.792-1.61)
12-hr	0.164 (0.146-0.185)	0.208 (0.185-0.236)	0.270 (0.239-0.307)	0.322 (0.282-0.370)	0.395 (0.333-0.473)	0.454 (0.373-0.558)	0.516 (0.412-0.653)	0.582 (0.450-0.762)	0.676 (0.497-0.930)	0.752 (0.530-1.08)
24-hr	0.108 (0.097-0.122)	0.140 (0.126-0.159)	0.183 (0.164-0.208)	0.219 (0.195-0.251)	0.269 (0.232-0.317)	0.308 (0.261-0.370)	0.349 (0.289-0.429)	0.392 (0.316-0.494)	0.451 (0.351-0.592)	0.499 (0.376-0.675)
2-day	0.073 (0.066-0.083)	0.093 (0.084-0.106)	0.121 (0.108-0.137)	0.144 (0.128-0.164)	0.176 (0.152-0.208)	0.202 (0.171-0.243)	0.228 (0.189-0.281)	0.257 (0.208-0.324)	0.297 (0.231-0.389)	0.329 (0.248-0.445)
3-day	0.056 (0.051-0.064)	0.071 (0.064-0.081)	0.092 (0.082-0.104)	0.109 (0.097-0.125)	0.134 (0.115-0.158)	0.153 (0.130-0.184)	0.173 (0.144-0.213)	0.195 (0.158-0.246)	0.226 (0.176-0.296)	0.251 (0.189-0.339)
4-day	0.047 (0.042-0.053)	0.059 (0.053-0.067)	0.076 (0.068-0.087)	0.090 (0.081-0.104)	0.111 (0.096-0.130)	0.127 (0.107-0.152)	0.143 (0.119-0.176)	0.161 (0.130-0.204)	0.187 (0.145-0.245)	0.207 (0.156-0.281)
7-day	0.033 (0.030-0.037)	0.041 (0.037-0.047)	0.053 (0.048-0.060)	0.063 (0.056-0.072)	0.077 (0.066-0.091)	0.088 (0.074-0.105)	0.099 (0.082-0.122)	0.111 (0.090-0.140)	0.128 (0.100-0.168)	0.142 (0.107-0.192)
10-day	0.027 (0.024-0.030)	0.034 (0.031-0.039)	0.044 (0.039-0.050)	0.052 (0.046-0.059)	0.063 (0.054-0.074)	0.071 (0.061-0.086)	0.080 (0.067-0.099)	0.090 (0.073-0.114)	0.103 (0.080-0.135)	0.114 (0.086-0.154)
20-day	0.017 (0.016-0.020)	0.022 (0.020-0.025)	0.029 (0.026-0.033)	0.034 (0.030-0.039)	0.041 (0.035-0.048)	0.046 (0.039-0.055)	0.051 (0.042-0.063)	0.056 (0.046-0.071)	0.064 (0.050-0.084)	0.069 (0.052-0.094)
30-day	0.014 (0.013-0.016)	0.018 (0.016-0.021)	0.023 (0.021-0.026)	0.027 (0.024-0.031)	0.033 (0.028-0.038)	0.037 (0.031-0.044)	0.040 (0.034-0.050)	0.044 (0.036-0.056)	0.050 (0.039-0.065)	0.053 (0.040-0.072)
45-day	0.012 (0.011-0.013)	0.015 (0.014-0.017)	0.019 (0.017-0.022)	0.022 (0.020-0.026)	0.026 (0.023-0.031)	0.029 (0.025-0.035)	0.032 (0.027-0.040)	0.035 (0.028-0.044)	0.039 (0.030-0.051)	0.042 (0.031-0.056)
60-day	0.011 (0.010-0.012)	0.014 (0.012-0.015)	0.017 (0.015-0.019)	0.020 (0.018-0.023)	0.023 (0.020-0.028)	0.026 (0.022-0.031)	0.028 (0.023-0.035)	0.031 (0.025-0.039)	0.033 (0.026-0.044)	0.035 (0.027-0.048)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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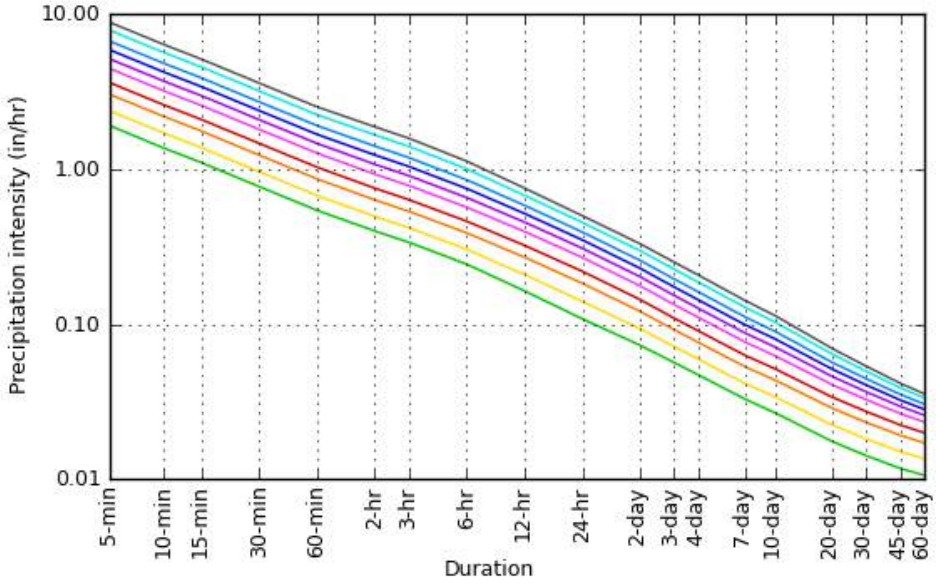
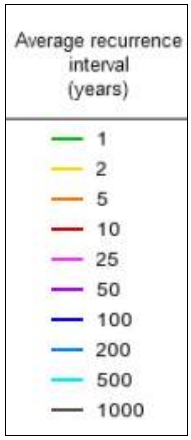
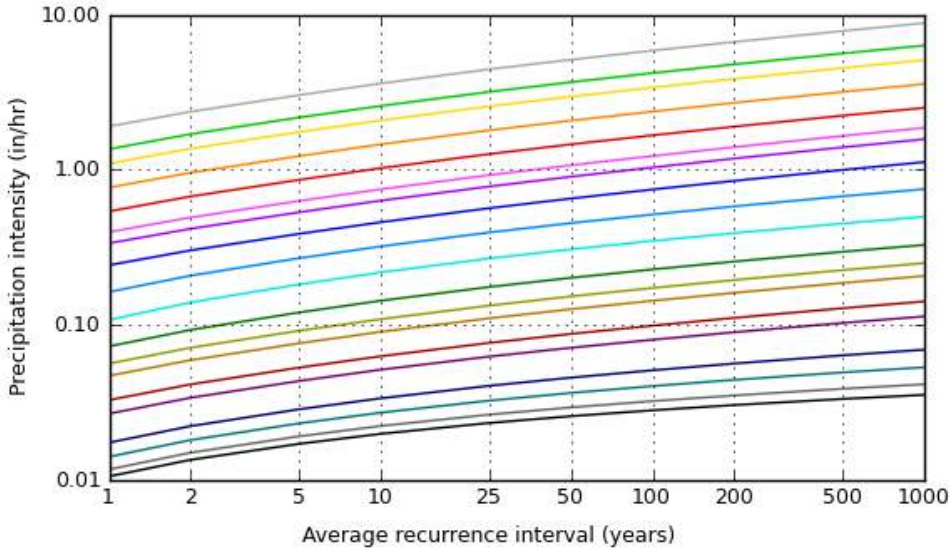
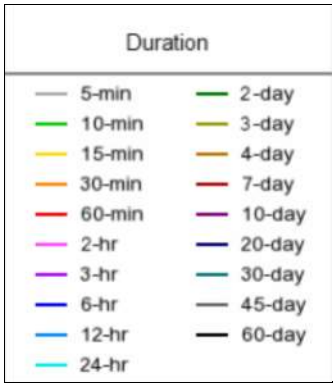
PF graphical

PDS-based intensity-duration-frequency (IDF) curves
Latitude: 37.8894°, Longitude: -122.5118°









NOAA Atlas 14, Volume 6, Version 2 Created (GMT): Mon Oct 4 20:20:07 2021

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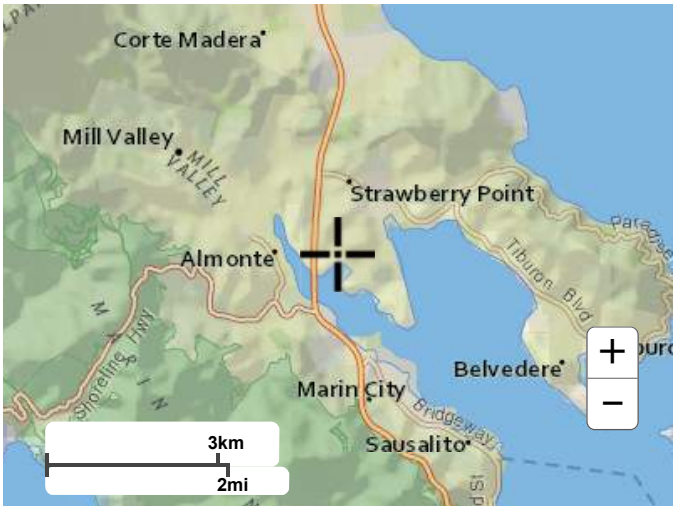
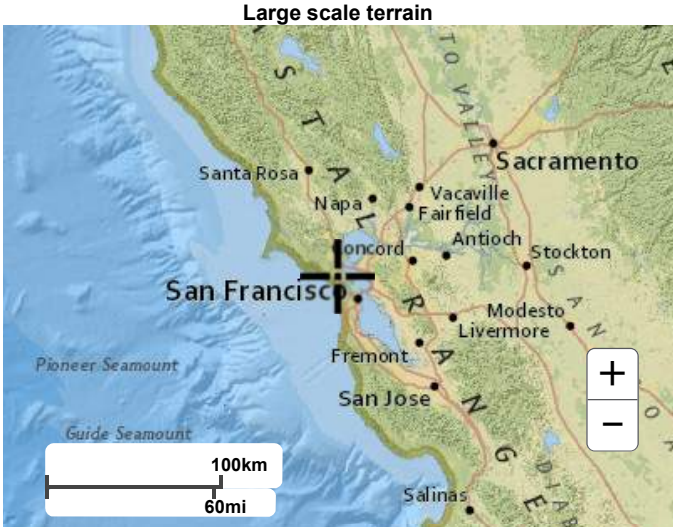
Maps & aerials

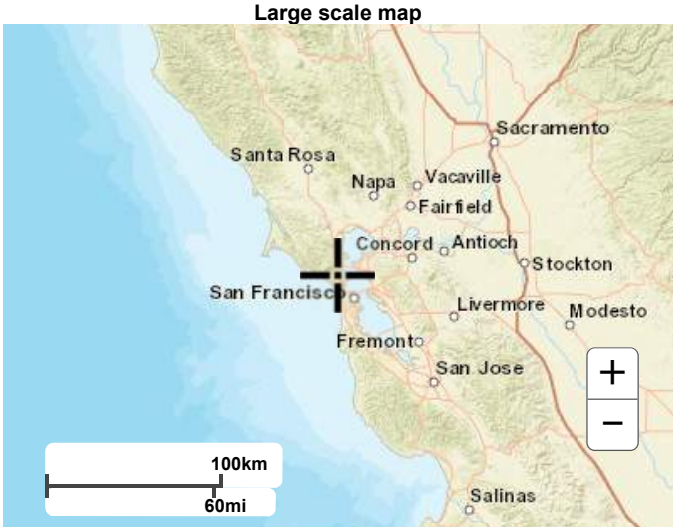
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial

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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Appendix G – FEMA Flood Insurance Maps

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was California State Plane zone III (FIPSZONE 0403). The **horizontal datum** was NAD83 HARN, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC–3, #9202
1315 East–West Highway
Silver Spring, MD 20910–3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713–3242,** or visit its website at http://www.ngs.noaa.gov/.

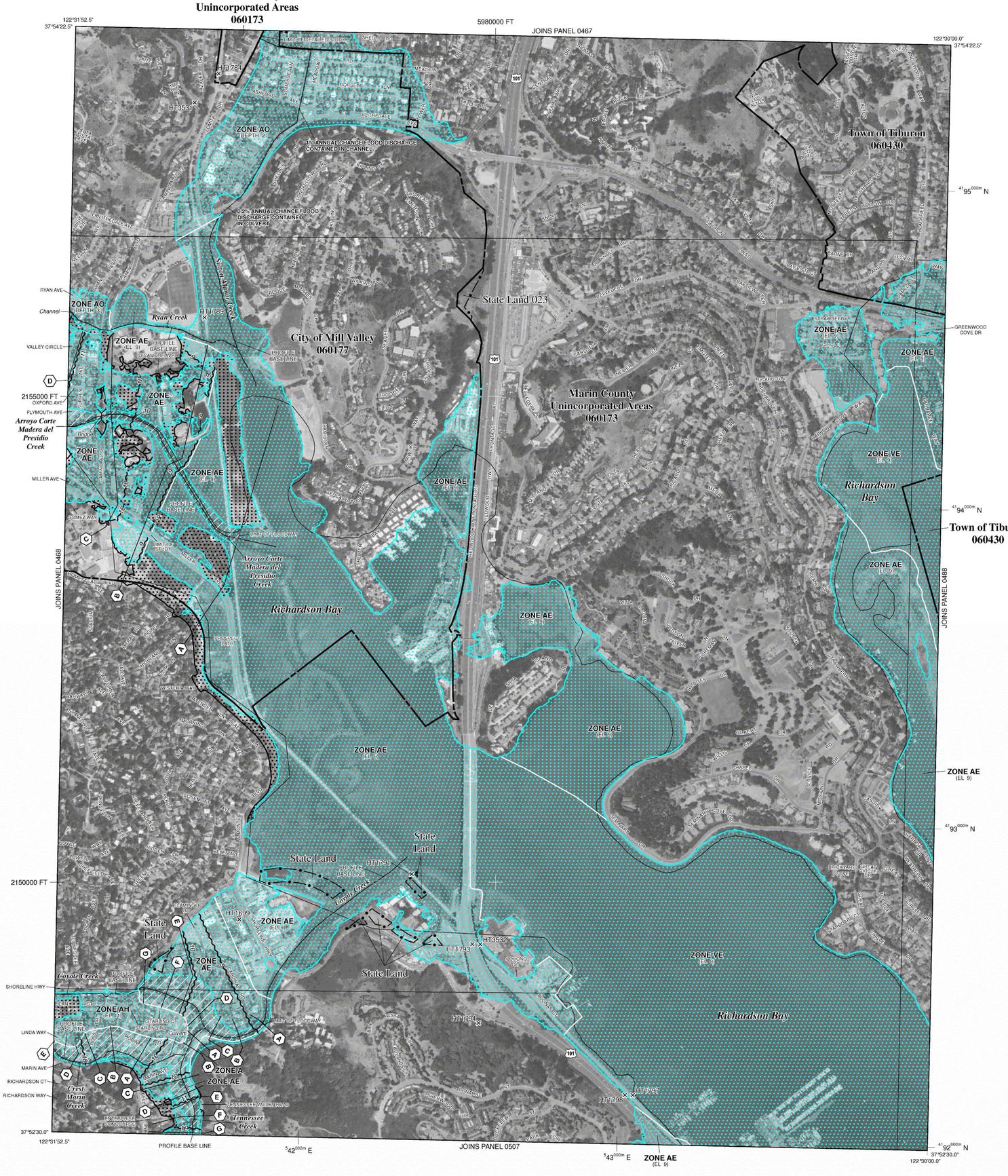
Base map information shown on this FIRM was provided in digital format by the USDA National Agriculture Imagery Program (NAIP). This information was photogrammetrically compiled at a scale of 1:24,000 from aerial photography dated 2009. Additional information was provided in digital format by Marin County.

This map may reflect more detailed or up to date stream channel configurations than those shown on the previous FIRM. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations and improved topographic data. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable, in the FIS report. As a result, the profile baselines may deviate significantly from the new base map channel representation and may appear outside of the floodplain.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the **FEMA Map Service Center** website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the **FEMA Map Service Center** website or by calling the FEMA Map Information eXchange.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referred to the North American Vertical Datum of 1988 (NAVD 88)

- A — A — Cross section line
- 23 — 23 — Transect line
- 97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4275000mN — 1000-meter Universal Transverse Mercator grid ticks, zone 10
- 6000000 FT — 5000-foot grid ticks: California State Plane coordinate system, zone III (FIPSZONE 0403), Lambert Conformal Conic
- DX5510 × — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
May 4, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
March 17, 2014 –to change zone designations, to add floodway, to add roads and road names, to reflect updated topographic information, to add Base Flood Elevations, to update corporate limits, to change Base Flood Elevations, and to change Special Flood Hazard Areas.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0469E

FIRM
FLOOD INSURANCE RATE MAP
MARIN COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 469 OF 531
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARIN COUNTY	060173	0469	E
MILL VALLEY, CITY OF	060177	0469	E
TIBURON, TOWN OF	060430	0469	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06041C0469E

MAP REVISED
MARCH 17, 2014

Federal Emergency Management Agency

Appendix H – Sea Level Rise Maps

METHODS

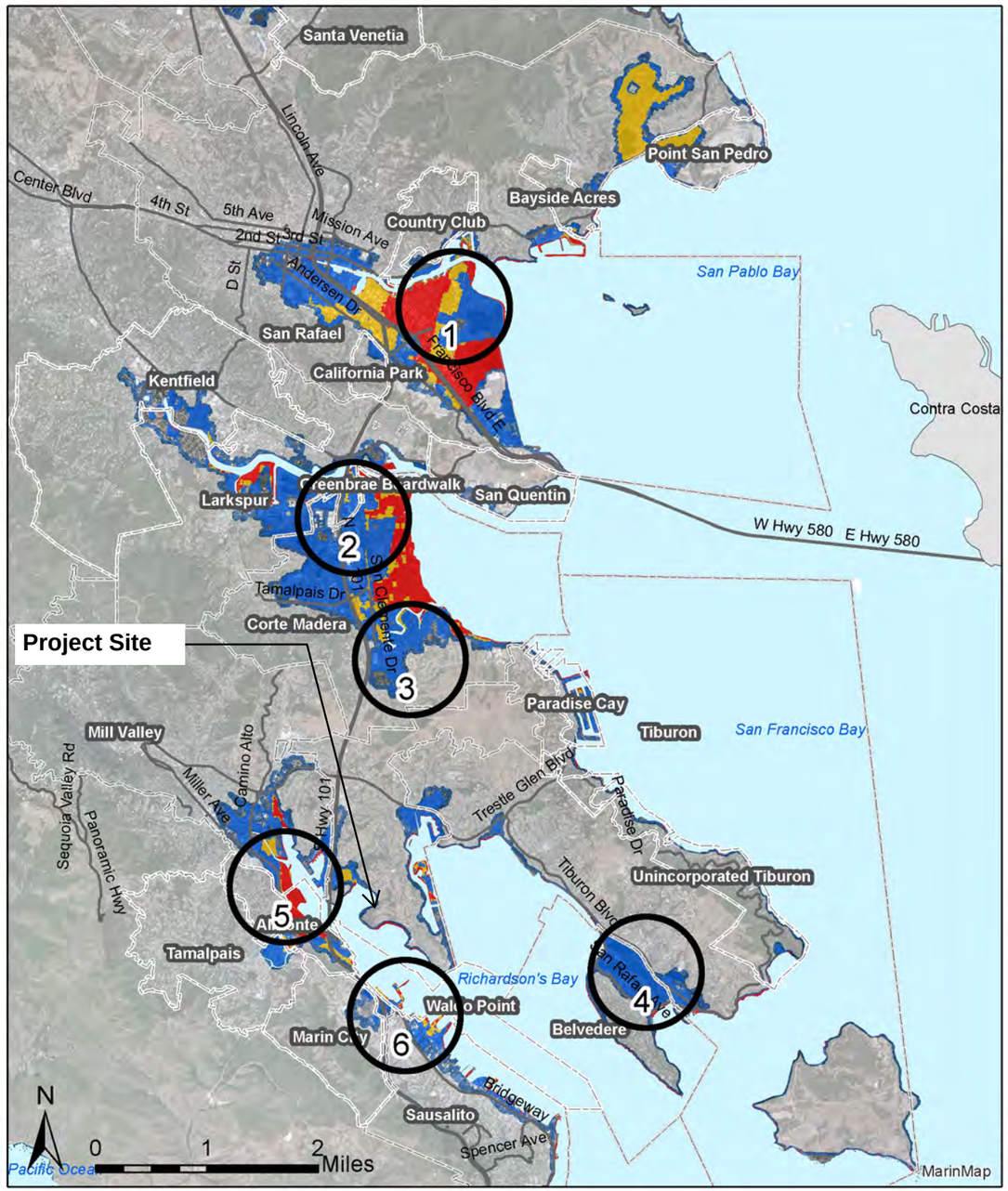
Map 5. Southern Study Area Sea Level Rise Scenarios

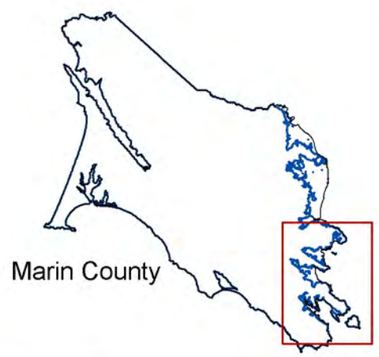
BayWAVE Sea Level Rise (SLR) Scenarios

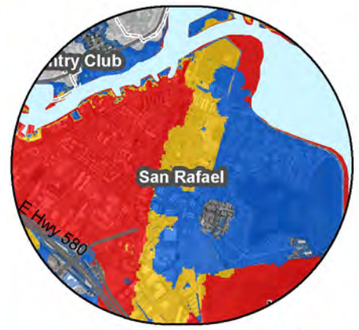
- Scen 1: 10" SLR
- Scen 3: 20" SLR
- Scen 5: 60" SLR

Location Indicators

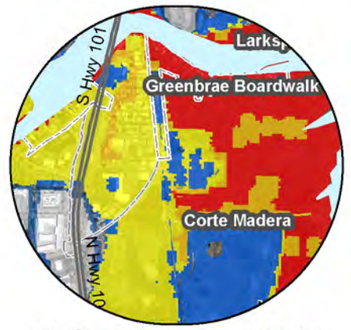
- Unincorporated
- Municipality
- Road
- Bay



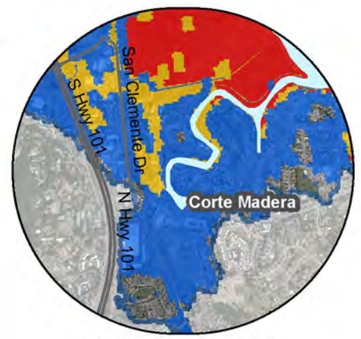




1: Canal Neighborhood

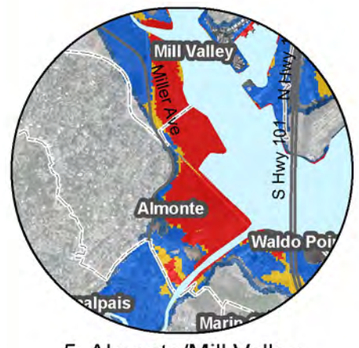


2: Greenbrae Boardwalk/ Larkspur/Corte Madera

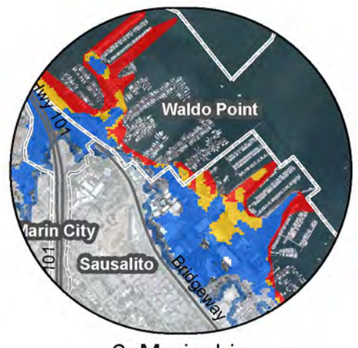


3: Corte Madera

4: Belvedere/Tiburon



5: Almonte/Mill Valley



6: Marinship

Date: 1/7/2017

Disclaimer: Vulnerability Assessment maps, tables, etc. can be used as a resource to help identify potential hazardous areas and vulnerable assets. Marin County, and data providers here in, make no warranties of the accuracy or completeness of maps and data. Maps are representational and subject to future revision. Local site conditions must be examined. Commercial use is prohibited.

METHODS

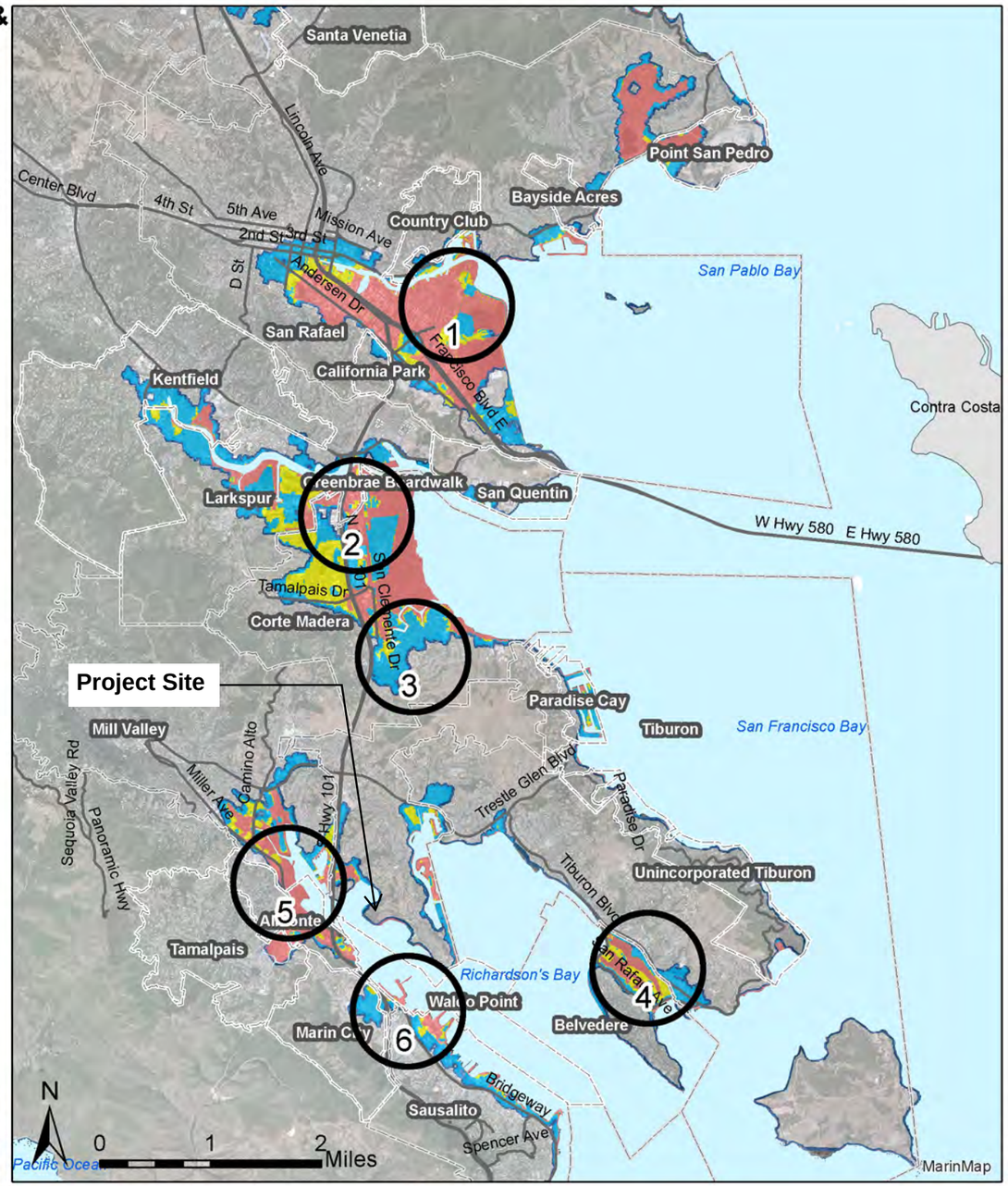
Map 7. Southern Study Area Sea Level Rise and 100-year Storm Surge Scenarios

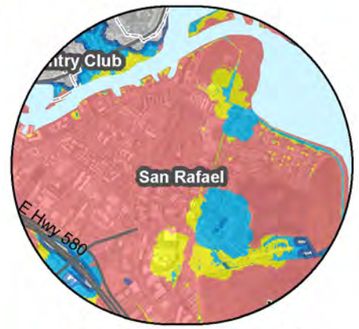
BayWAVE Sea Level Rise (SLR) & 100-year Storm Surge Scenarios

- Scen 2: 10"SLR+Storm Surge
- Scen 4: 20"SLR+Storm Surge
- Scen 6: 60"SLR+Storm Surge

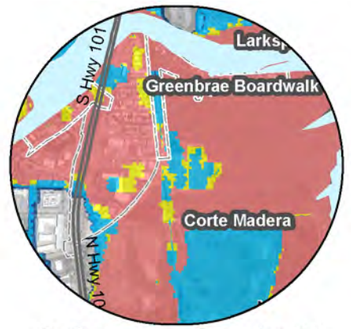
Location Indicators

- Unincorporated
- Municipality
- Road
- Bay

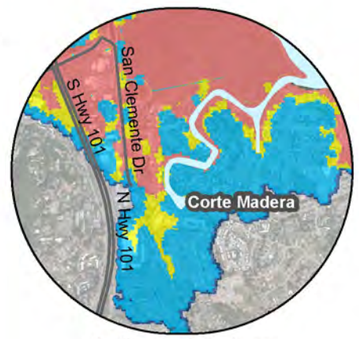




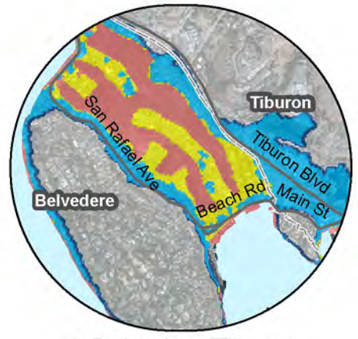
1: Canal Neighborhood



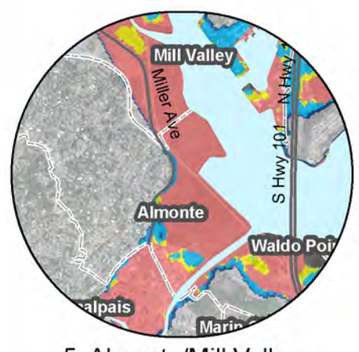
2: Greenbrae Boardwalk/ Larkspur/Corte Madera



3: Corte Madera



4: Belvedere/Tiburon



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6: Marinship

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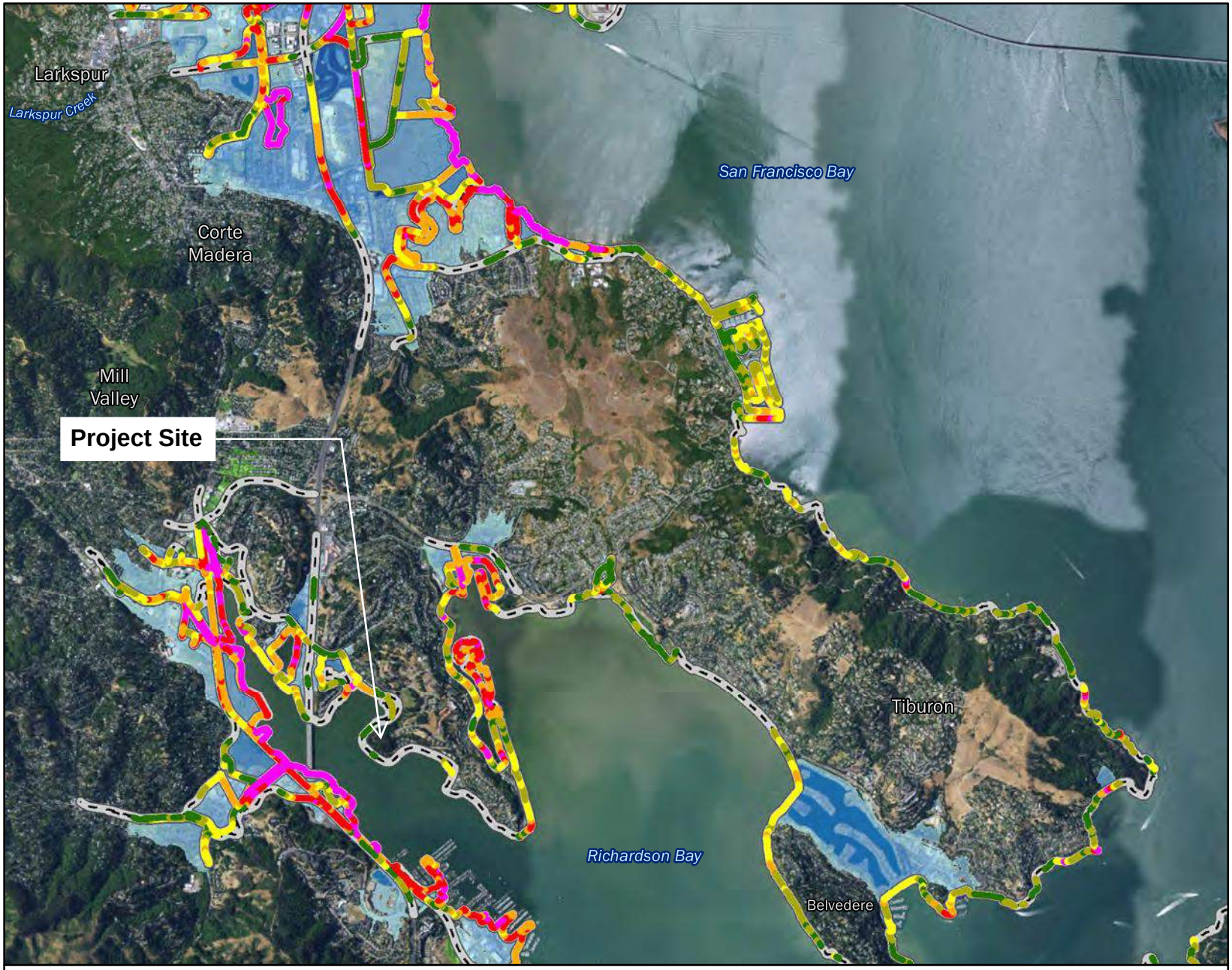
EVB CONSULTING

Date: 1/7/2017

OCOF CoSMoS



Bay Area Sea Level Rise Analysis and Mapping Project

MARIN COUNTY

MHHW + 66" SEA LEVEL RISE

SLR + STORM SURGE SCENARIOS LISTED BELOW COULD BE APPROXIMATED BY THE INUNDATION SHOWN ON THIS MAP.

- 24" SLR + 100-Year Storm Surge
- 30" SLR + 50-Year Storm Surge
- 36" SLR + 25-Year Storm Surge
- 42" SLR + 5-Year Storm Surge
- 48" SLR + 2-Year Storm Surge
- 52" SLR + 1-Year Storm Surge

Shoreline Overtopping Potential

Depth in Feet

- 0 - 1
- 1 - 2
- 2 - 3
- 3 - 4
- 4 - 5
- > 5
- No Overtopping

Sea Level Rise Inundation

Depth in Feet

- 0 - 2
- 2 - 4
- 4 - 6
- 6 - 8
- 8 - 10
- 10 - 12
- 12 - 14
- 14 - 16
- 16+
- Disconnected Areas > 1 Acre

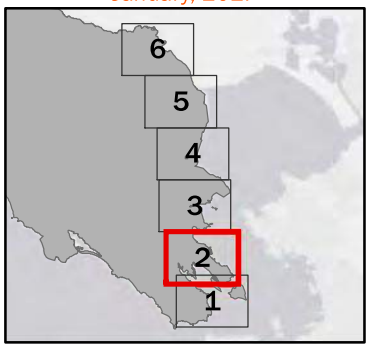
0 0.2 0.4 0.6 0.8 1 Miles

1:45,000

Projection:
Universal Transverse Mercator NAD83 Zone 10N

AECOM bcdc METROPOLITAN TRANSPORTATION COMMISSION

January, 2017



The inundation maps and the associated analyses provide a regional-scale illustration of inundation and coastal flooding due to specific sea level rise and storm surge scenarios, and are intended to improve sea level rise awareness and preparedness. The maps are not detailed to the parcel-scale and should not be used for navigation, permitting, regulatory, or other legal uses. Flooding due to sea level rise and storm surges is possible in areas outside of those predicted in these maps, and the maps do not guarantee the safety of an individual or structure. Nor do the maps model flooding from other sources, such as riverine or surface water flooding from rainfall-runoff events. The contributors and sponsors of this product do not assume liability for any injury, death, property damage, or other effects of flooding. The maps relied on a 1-meter digital elevation model created from LiDAR data collected in 2010 and additional survey data (where available). Although reasonable care was taken to capture all relevant topographic features and structures that may impact coastal inundation, it is possible that structures may not be fully represented, especially those that are narrower than the 1-meter horizontal map scale. The maps are based on model outputs and do not account for all of the complex and dynamic San Francisco Bay processes or future conditions such as erosion, subsidence, future construction or shoreline protection upgrades, or other changes to San Francisco Bay or the region that may occur in response to sea level rise. These inundation maps should not be used for detailed design or construction and users should consult a licensed engineer for information regarding existing and future flood risk at an individual site. For more context about the maps and analyses, including a description of the data and methods used, please see the Adapting to Rising Tides Bay Area Sea Level Rise Analysis and Mapping project report. The inundation maps and associated analyses are provided "as is." Neither BATA, the Metropolitan Transportation Commission, the Bay Conservation and Development Commission, the California Coastal Conservancy, the San Francisco Public Utilities Commission, nor their contractors, make any warranty whatsoever, whether expressed or implied, as to the accuracy, thoroughness, value, quality, validity, merchantability, suitability, condition, or fitness for a particular purpose of the inundation maps and associated analyses, nor as to whether the inundation maps and associated analyses are error-free, up-to-date, complete or based upon accurate or meaningful facts.

Appendix O

Draft Community Plan Amendment

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FEB 05 2020
COUNTY OF MARIN
COMMUNITY DEVELOPMENT AGENCY
PLANNING DIVISION

II. Goals.

A. Community Amenities

It is the desire of the Community to assure that future development provide for such amenities as visual backdrops, neighborhood separators, retention of ridgelines, and protection of environmentally important areas, through careful planning and clustering of structures. In addition, all means of open space acquisition should be pursued, including purchase and dedication.

B. Housing Balance

The Community desires to retain a character that identifies the Strawberry area as a family-oriented community. Such an identity is established by the visual, physical setting of the community, as well as by families who reside there. It is important that the social patterns, personal interaction, sights and sounds that typify single family neighborhoods be maintained and strengthened. If new development is to occur, it can strengthen this character by providing the traditional setting of detached single-family units within any new development proposed for the area. Development plan proposals should give the highest priority to incorporating detached single-family homes into the plan. Where physical constraints or opportunities dictate another housing type (i.e., attached units), the Community goal is to ei~~i~~nsure that unit size and project amenities are designed to provide the opportunity for and encourage occupancy by families with children. In this manner then the Community wishes to ei~~i~~nsure a housing balance that will continue to provide for families.

C. Transportation

The Community desires that the movement of traffic through the Strawberry area be safe for both pedestrians and vehicles. The Community further desires that existing traffic movement not be further interrupted by new development and that existing potentially hazardous conditions for pedestrians and vehicles be improved to an acceptable level of safety. Therefore, it is the goal of the Community that the overall density of new development in Strawberry be scaled to ensure future acceptable traffic levels of service. Where levels of service or safety are now currently unacceptable, or where service levels or safety conditions will deteriorate due to traffic generated by new development, improvements shall be required in conjunction with that new development. These improvements should be considered as appropriate mitigation measures to be applied to new development. Owners of the large undeveloped properties in the Strawberry area (DeSilva Island, Watertank Hill, ~~Golden Gate Baptist Theological Seminary~~ and Strawberry Spit/Point) will be required to contribute on a proportional basis to the funding necessary to construct required improvements. The proportion of the funding to be required from each property owner is to be determined by the traffic generated by each development and the impact of that traffic on the intersection or road to be improved. The formula for proportionality and method of collection requires further study and should be determined in the near future.

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III. Development Guidelines.

C. Former Golden Gate Baptist Theological Seminary site – (See Map 4)

Description	
A.P. #	~~43-261-03,05,20 & 22~~ 043-261-25; 043-261-26; 043-262-03, 043-262-06; 043-401-05; 043-401-10; 043-401-16; 043-402-03; 043-402-06
Area	~~125.19~~123.35 acres of land, 22.25 acres of land underwater.
Existing zoning/density	RMP ~~2.1~~2.47; MF2 (1-4 units/acre)
Existing development	211 residential dwellings ~~for students and faculty~~available to the public. Various buildings utilized for educational ~~and religious~~ purposes.

LAND USE – A ~~combination of student/faculty housing, educational and religious uses and activities~~college/university use with a student population of approximately 1,000 ~~were~~ was granted for this property by Use Permit in 1953 overlaid on the site's base zoning of RMP 2.47. Extensive facilities including housing, administrative and educational buildings were built subsequently. These uses continue to be appropriate for the property. However, since that Use Permit was issued, the plans of the Seminary and the character of the community and the zoning applied to the property have changed. Any further development of ~~all of~~ the ~~Seminary~~ property must be established in a Master Plan because it is now subject to a Planned District classification. In general, it is recommended that ~~Seminary religious,~~ educational buildings, and uses and ~~student~~ housing be located on the central portion of the property. The areas located at the periphery of the ~~Seminary~~ property would be appropriate for ~~a limited number of~~ single-family detached residences ~~which would not be part of the Seminary's student and faculty housing~~. Development in these areas should be planned and designed to blend into the existing community.

The development potential of the ~~Seminary~~ property was discussed with the Citizen's Advisory Committee, the property owners and their representatives, and reviewed in the field by walking the property. The exact development of the property will be established in the more detailed review of a Master Plan application. ~~However, the following development was determined to be the maximum desirable based on the projected traffic impact and the context of the property within the community.~~ The following was originally determined to be the maximum desirable development based on the projected traffic impact and the context property within the community.

(1) 24 single-family detached residences located on the periphery of the ~~Seminary~~ property.

(2) 36 attached units.

(3) ~~90-100~~200-250 ~~student~~ housing units

(4) Some additional development related to the educational ~~and religious~~ use of the ~~Seminary~~ property itself. However, the only such development specifically discussed as part of this Community Plan Amendment was a chapel. Other potential development includes a student union building and additional classrooms (shown in the 1955 Use Permit) and a gymnasium (new Use). Any such development should be located adjacent to the existing campus development. The extent of additions to the campus should be determined in a Master Plan which evaluates such development in the context of all development on the property.

The following discussion sets out specific guidelines for the development potential of the portion of the property surrounding the ~~Seminary~~ campus area in consideration of a Master Plan. The areas discussed are identified by numbers on Map 4. The guidelines include a range of development that may be appropriate. Not all of them can be exercised and be consistent with the maximum development identified for this property. Any Master Plan application should be evaluated against these guidelines and the other provisions of the Strawberry Community Plan. The maintenance or improvement of existing service levels at the Seminary/101/Frontage Road interchange should be a prime determinate of the development that is permitted at this location.

(Area 1) Storer Drive Extension. Approximately six (6) single-family detached dwellings behind existing development on East Strawberry Drive would be appropriate. Alternatively, approximately 10-15 attached dwellings behind the existing apartments on East Strawberry Drive and approximately 3 single-family detached dwellings would also be suitable.

(Area 2) Platt Court Existing ~~Faculty~~ units – Existing use should remain; however, if the ~~Seminary~~ landowner desires to redevelop this area, approximately three (3) single-family detached dwelling units could be built on site.

(Area 3) Seminary Drive area at intersection with Great Circle Drive – Two single-family detached dwelling units could be located in this area.

(Area 4) Seminary Drive area adjacent to Brickyard Park – Development in this area should be single-family detached dwelling units, approximately 3 to 4 in number. Single-family homes should be located on the level plateau area below the road and on top of the bluff above the shore. Dwellings should be sited so that views of Richardson Bay from existing dwellings are not blocked. Lots should be designed so that public access to the shoreline is wide and inviting and that the level area up to the bluff cannot be fenced off but will remain open to the public.

(Area 5) Slope between Chapel and Seminary Drive – Development in this area should be entirely single-family detached dwellings and approximately 10 in number. This land use is recommended to maintain the single-family character of the neighborhood. The access to the dwellings would be obtained from either Chapel or Seminary Drive. A band of open undeveloped land should extend from Chapel Drive to Seminary Drive. Alternative development in this area could be a combination of single-family detached dwellings below the ridge and small scale attached units in the bowl area adjacent to Seminary Drive.

(Area 6) Any expansion of the campus or ~~student~~ housing should be developed in this area. Hilltop adjacent to Chapel Drive is a prominent visual landmark within the Community and should remain undeveloped, if possible. However, if development of this site is to occur, it should be limited to either structures for ~~Seminary~~ campus activities or allocated for housing. ~~No housing should be placed on this site.~~ Structures should be designed and placed so that they are as unobtrusive as possible. This should be accomplished by placing structures in the northern quadrant of the site and by "benching" the slope to provide a lower building pad and profile. Landscaping should also be incorporated into the site plan to screen views of the structure from existing dwellings. The existing views from residences along Hillard Drive should not be blocked be development on this hilltop.

(Area 7) Reed Boulevard – Two single-family detached dwelling units should be located on ~~Seminary~~ the property with frontage on Reed Boulevard.

(Area 8) Area between Seminary, Gilbert, Willis, Chapel Drive and the Forested Knoll – This area does not include the athletic field nor the slopes adjacent to it. The field and slopes should be considered as part of the campus and neither the property owner nor the public consider market housing as an appropriate use for this area.

If the ~~seminary~~ landowner desires to develop attached dwelling units as apartments or to be sold as condominiums, such units could be located off of Chapel Drive at the top of the slope above Seminary Drive south of the Athletic Field and Gilbert Drive. Apartments or ~~C~~condominiums in this location could be compatible with the existing multiple development south of Seminary Drive next to Richardson Bay, and yet would be visually separated from the single-family detached dwellings located on the Point. A maximum of 36 units might be located in this area.

Alternatively, a smaller number, a maximum of 10, single-family detached units could be located in this area.

Zoning/Density – Maintain the existing Planned Development zoning designation of RMP. Densities to be established upon specific review of a master plan for the property. Allowable densities to be subject to the preceding land use recommendations and the following policies.

Location of Development – The shoreline area adjacent to Brickyard Park should remain undeveloped because it can provide public view of and access to the Bay. The Forested Knoll ~~(Area 6)~~ above Seminary Drive should remain undeveloped because it is a prominent visual landmark in the Community. Other portions of the property may be developed as outlined previously.

Traffic/Circulation – Driveways for individual lots should be kept to a minimum along Seminary Drive by combining entrances wherever possible.

Traffic generated by this development will add to the unacceptable level of congestion projected to occur at the intersection of Highway 101, Seminary Drive interchange ramps and the Redwood Frontage Road. To mitigate this impact, the developer shall be required to contribute, on a proportional basis, along with the other three major Strawberry developers, to the funding required to reconstruct this intersection, including the installation of a traffic signal. This problem is discussed in more detail in the Transportation portion of the Plan.

Traffic generated from this project will add to the safety problems for pedestrians walking on East Strawberry Drive. To mitigate this impact, the developer should be required to participate, proportionately, in the financing of a sidewalk or similar improvements which would separate pedestrian and vehicular traffic, on East Strawberry Drive from Great Circle Road to Strawberry Point School.

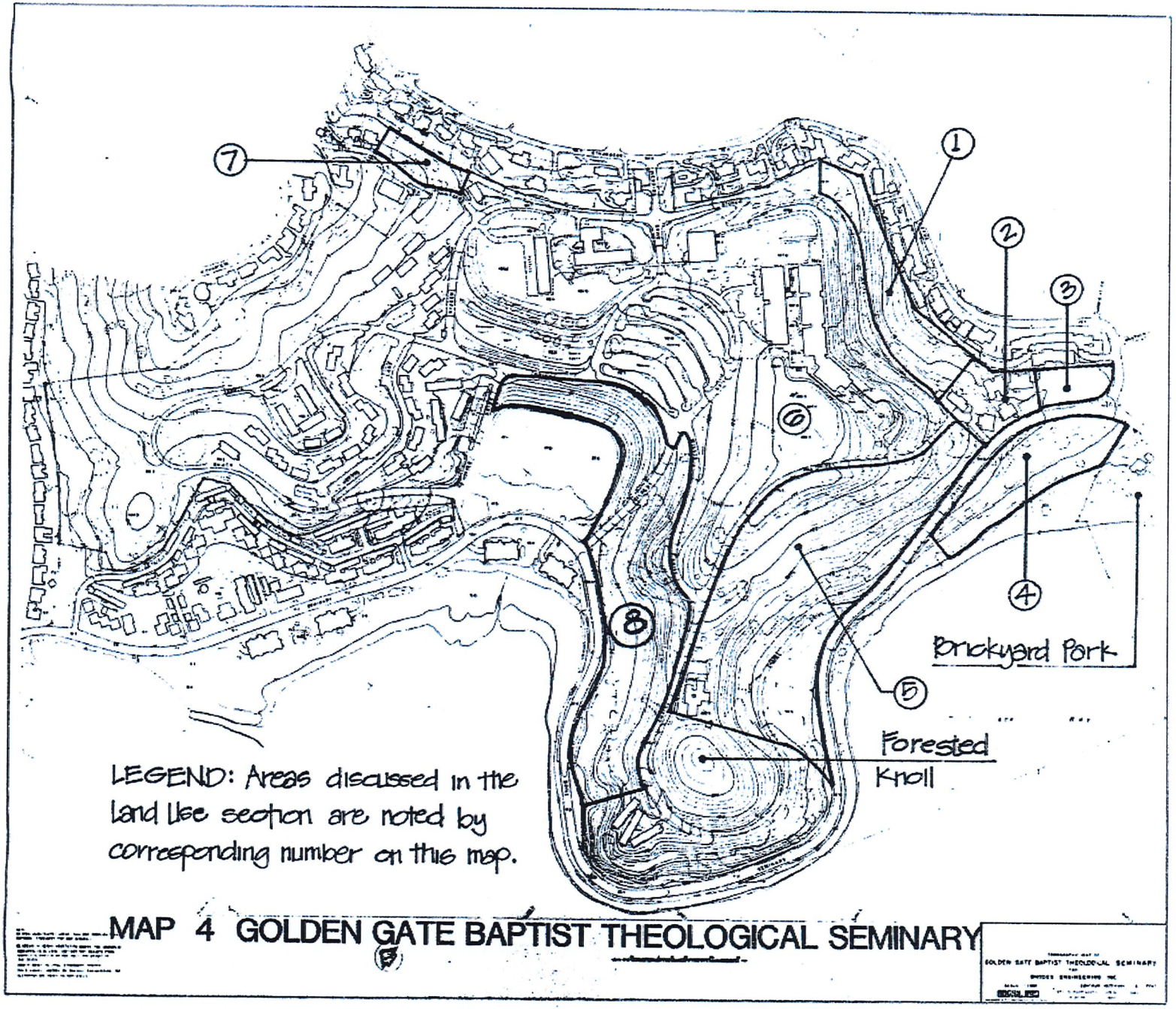
Design Guidelines – Development at the higher elevations between Chapel and Seminary Drives should be designed to retain an appearance of openness to the slopes, placing units below the ridge and grouping them toward the western and eastern portion of this area, so that the central portion of the slope and ridge remains open. This openness should be achieved by expanses of undeveloped areas rather than relying on space and landscaping between individual units; therefore, lots should not be uniformly placed across the ridge.

A complete landscaping plan should be incorporated into the site design. That plan should include placement and selection of landscaping materials to screen units on this site. Such landscaping should be installed as part of the site improvements and individual occupancy permits should be issued only after the landscaping is installed.

~~Student h~~Housing proposed for the knoll adjacent to Shuck Drive should be sited to minimize grading for structures and parking areas. The site plan should be designed so that direct views of ~~student~~ units from existing dwellings, especially those on Milland and Ricardo Drives, are screened. A landscape plan providing a "green belt" buffer of landscaping between ~~student~~ housing and existing dwellings should be incorporated

into the site plan. ~~Student h~~Housing should be sited so as to provide at a minimum the same distances between new structures as currently exists between existing structures.

The review of any proposed master plan for the ~~Seminary~~ property should include a discussion of the existing and potential public uses of and activities at the campus. Currently, the Community is not fully informed of the existing campus public activity programs. It would be beneficial if the ~~Seminary~~ landowner and Community could establish a formal understanding of the recreational opportunities and educational activities available. Possibly the Strawberry Recreation District could assist the ~~Seminary~~ landowner in establishing and publicizing these public uses and activities.



MAP 4 GOLDEN GATE BAPTIST THEOLOGICAL SEMINARY

Appendix P

Noise Measurement Data & Noise Modeling Calculations

Summary

File Name on Meter	LxT_Data.120.s
File Name on PC	LxT_0003285-20221110 112625-LxT_Data.120.ldbin
Serial Number	0003285
Model	SoundTrack LxT®
Firmware Version	2.302
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-11-10 11:26:25
Stop	2022-11-10 11:41:29
Duration	00:15:03.9
Run Time	00:15:03.0
Pause	00:00:00.9
Pre-Calibration	2022-11-10 11:22:22
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
Overload	121.8 dB

	A	**C**	**Z**	
Under Range Peak	**78.1**	75.1	80.1	dB
Under Range Limit	**26.1**	25.9	31.0	dB
Noise Floor	16.5	16.7	21.9	dB

	First	Second	Third
Instrument Identification			

Results

LA_{eq}	48.1 dB		
LAE	77.7 dB		
EA	6.478 µPa²h		
EA8	206.609 µPa²h		
EA40	1.033 mPa²h		
$LA_{peak\ (max)}$	2022-11-10 11:40:48	82.2 dB	
LAS_{max}	2022-11-10 11:29:10	61.7 dB	
LAS_{min}	2022-11-10 11:39:49	40.9 dB	
SEA	-99.9 dB		

	Exceedance Counts	Duration
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LA_{peak} > 135.0 dB	0	0.0 s
LA_{peak} > 137.0 dB	0	0.0 s
LA_{peak} > 140.0 dB	0	0.0 s

LC_{eq}	67.2 dB	
LA_{eq}	48.1 dB	
LC_{eq} - LA_{eq}	19.1 dB	
LAI_{eq}	50.6 dB	
LA_{eq}	48.1 dB	
LAI_{eq} - LA_{eq}	2.5 dB	

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	48.1		67.2			
$L_{S(max)}$	61.7	2022/11/10 11:29:10				
$L_{S(min)}$	40.9	2022/11/10 11:39:49				
$L_{Peak(max)}$	82.2	2022/11/10 11:40:48				

Overload Count	0	
Overload Duration	0.0	s

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	3	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results

Dose	0.01	0.00	%
Projected Dose	0.25	0.01	%
TWA (Projected)	46.8	48.1	dB
TWA (t)	21.8	33.1	dB
Lep (t)	33.1	33.1	dB

Statistics

LA 5.00	53.6	dB
LA 8.33	50.6	dB
LA 33.30	45.5	dB
LA 50.00	44.6	dB
LA 66.60	44.0	dB
LA 90.00	42.9	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**
PRMLxT1L	2022-11-10 11:22:20	-28.12	77.05	69.05	66.03	56.89	59.62	55.32	53.59
PRMLxT1L	2022-11-09 17:09:48	-28.12	70.20	65.92	67.84	66.49	60.15	58.78	60.36
PRMLxT1L	2022-11-09 17:09:22	-28.13	60.67	56.91	56.20	55.90	54.23	50.53	50.46
PRMLxT1L	2022-10-20 10:39:14	-27.68	60.56	60.22	58.34	56.12	55.51	57.88	56.86
PRMLxT1L	2022-10-20 10:33:14	-28.12	67.19	52.05	52.09	60.61	57.57	52.68	55.40
PRMLxT1L	2022-06-06 15:20:40	-28.09	69.24	60.61	58.45	57.42	55.91	58.21	64.68

PRMLxT1L	2022-06-06 14:42:30	-27.94	78.51	75.14	75.48	73.77	79.28	70.34	71.40
PRMLxT1L	2022-06-06 12:37:27	-28.09	59.17	63.10	58.24	59.86	62.67	72.19	62.37
PRMLxT1L	2022-06-06 12:11:26	-27.99	66.28	50.59	65.48	66.79	63.32	52.73	58.03
PRMLxT1L	2022-06-06 07:58:15	-28.11	59.06	60.74	67.69	51.52	61.13	49.59	50.52
PRMLxT1L	2022-06-06 07:32:49	-28.08	51.32	50.20	39.39	48.10	54.51	55.83	46.88

Summary

File Name on Meter	LxT_Data.121.s
File Name on PC	LxT_0003285-20221110 114838-LxT_Data.121.ldbin
Serial Number	0003285
Model	SoundTrack LxT®
Firmware Version	2.302
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-11-10 11:48:38
Stop	2022-11-10 12:04:34
Duration	00:15:55.9
Run Time	00:10:50.9
Pause	00:05:05.0
Pre-Calibration	2022-11-10 11:22:20
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting	
Peak Weight	A Weighting	
Detector	Slow	
Preamplifier	PRMLxT1L	
Microphone Correction	Off	
Integration Method	Linear	
Overload	121.8	dB

	A	**C**	**Z**	
Under Range Peak	**78.1**	75.1	80.1	dB
Under Range Limit	**26.1**	25.9	31.0	dB
Noise Floor	16.5	16.7	21.9	dB

	First	Second	Third
Instrument Identification			

Results

LA_{eq}	57.2 dB		
LAE	85.3 dB		
EA	37.955 µPa²h		
EA8	1.679 mPa²h		
EA40	8.397 mPa²h		
$LA_{peak\ (max)}$	2022-11-10 12:03:34	84.5 dB	
LAS_{max}	2022-11-10 12:04:10	69.3 dB	
LAS_{min}	2022-11-10 11:58:48	40.0 dB	
SEA	-99.9 dB		

	Exceedance Counts	Duration
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LA_{peak} > 135.0 dB	0	0.0 s
LA_{peak} > 137.0 dB	0	0.0 s
LA_{peak} > 140.0 dB	0	0.0 s

LC_{eq}	69.8 dB	
LA_{eq}	57.2 dB	
LC_{eq} - LA_{eq}	12.6 dB	
LAI_{eq}	58.9 dB	
LA_{eq}	57.2 dB	
LAI_{eq} - LA_{eq}	1.7 dB	

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	57.2		69.8			
$L_{S(max)}$	69.3	2022/11/10 12:04:10				
$L_{S(min)}$	40.0	2022/11/10 11:58:48				
$L_{Peak(max)}$	84.5	2022/11/10 12:03:34				

Overload Count	0	
Overload Duration	0.0	s

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	3	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results

Dose	0.02	0.00	%
Projected Dose	0.69	0.05	%
TWA (Projected)	54.1	57.2	dB
TWA (t)	26.8	40.7	dB
Lep (t)	40.7	40.7	dB

Statistics

LA 5.00	64.8	dB
LA 8.33	62.2	dB
LA 33.30	48.0	dB
LA 50.00	45.4	dB
LA 66.60	44.0	dB
LA 90.00	42.4	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**
PRMLxT1L	2022-11-10 11:22:20	-28.12	77.05	69.05	66.03	56.89	59.62	55.32	53.59
PRMLxT1L	2022-11-09 17:09:48	-28.12	70.20	65.92	67.84	66.49	60.15	58.78	60.36
PRMLxT1L	2022-11-09 17:09:22	-28.13	60.67	56.91	56.20	55.90	54.23	50.53	50.46
PRMLxT1L	2022-10-20 10:39:14	-27.68	60.56	60.22	58.34	56.12	55.51	57.88	56.86
PRMLxT1L	2022-10-20 10:33:14	-28.12	67.19	52.05	52.09	60.61	57.57	52.68	55.40
PRMLxT1L	2022-06-06 15:20:40	-28.09	69.24	60.61	58.45	57.42	55.91	58.21	64.68

PRMLxT1L	2022-06-06 14:42:30	-27.94	78.51	75.14	75.48	73.77	79.28	70.34	71.40
PRMLxT1L	2022-06-06 12:37:27	-28.09	59.17	63.10	58.24	59.86	62.67	72.19	62.37
PRMLxT1L	2022-06-06 12:11:26	-27.99	66.28	50.59	65.48	66.79	63.32	52.73	58.03
PRMLxT1L	2022-06-06 07:58:15	-28.11	59.06	60.74	67.69	51.52	61.13	49.59	50.52
PRMLxT1L	2022-06-06 07:32:49	-28.08	51.32	50.20	39.39	48.10	54.51	55.83	46.88

31.5	40.0	50.0	63.0	80.0	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150
58.71	53.99	55.88	52.00	51.19	51.52	54.20	47.31	41.33	40.15	38.31	38.74	39.11	32.25	31.75	113.98	49.00	18.69	65.90	21.70	62.80
60.84	62.09	67.87	70.16	64.92	61.40	59.28	61.75	59.01	55.60	58.82	57.83	50.84	47.26	51.27	114.00	49.24	34.85	66.11	22.83	62.95
53.68	58.49	50.06	45.89	43.37	38.24	38.44	39.35	33.68	33.13	33.72	33.04	27.12	21.92	27.36	113.54	48.58	19.20	65.60	21.31	62.49
46.20	42.02	42.72	48.20	48.98	38.59	49.86	39.17	36.97	32.20	31.73	30.41	26.72	25.35	31.60	114.43	49.36	21.25	66.05	22.59	62.79
54.59	55.65	61.68	59.54	56.96	55.25	58.11	54.41	60.28	54.36	54.21	57.42	61.89	55.05	38.09	113.95	49.08	25.18	66.11	21.83	62.87
69.42	54.21	57.41	57.41	51.58	52.72	58.84	50.95	52.58	48.35	47.05	48.15	44.02	38.48	30.90	113.83	48.65	19.41	66.14	21.79	62.86

73.02	69.69	67.21	62.02	63.27	66.21	63.18	57.42	60.86	58.47	49.63	47.28	45.13	36.69	31.61	114.13	49.05	20.07	66.31	22.13	63.03
58.40	70.69	59.47	61.62	60.73	56.19	57.43	53.17	50.53	47.26	44.71	45.76	43.02	36.82	30.80	113.88	48.74	17.33	65.95	22.06	62.79
60.69	54.03	57.24	58.79	57.08	56.99	50.31	50.81	53.76	52.63	47.96	46.99	43.76	35.07	29.76	114.11	49.06	19.77	66.28	22.26	63.02
54.33	51.86	52.95	59.38	50.59	51.86	54.90	46.38	43.46	49.11	45.57	41.73	39.15	32.16	29.29	113.95	48.87	18.58	65.95	22.15	62.76
47.76	47.38	54.86	49.83	50.80	48.84	48.01	46.00	46.74	42.13	40.45	39.43	38.96	33.69	30.58	114.04	48.98	18.96	66.04	22.02	62.85

4000	5000	6300	8000	10000	12500	16000	20000
28.52	34.11	21.77	22.53	23.93	25.95	27.98	30.94
28.75	33.73	24.31	22.93	23.89	26.16	28.69	31.01
27.88	33.27	21.17	22.31	23.55	25.43	28.24	30.40
26.20	34.96	22.96	23.48	24.90	26.58	28.81	31.23
28.70	33.55	21.76	22.20	23.84	25.83	28.20	30.82
28.72	33.34	21.67	22.87	24.16	25.89	28.24	30.72

28.09	33.45	21.75	22.97	24.13	25.97	28.68	30.77
28.18	33.40	22.10	22.48	23.96	25.85	28.22	30.65
28.43	33.45	22.05	23.01	24.60	26.22	28.64	31.01
28.09	33.49	21.70	22.99	23.92	25.71	28.03	30.77
28.03	33.63	21.85	22.82	24.23	26.11	28.37	30.62

Summary

File Name on Meter	LxT_Data.122.s
File Name on PC	LxT_0003285-20221110 121545-LxT_Data.122.ldbin
Serial Number	0003285
Model	SoundTrack LxT®
Firmware Version	2.302
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-11-10 12:15:45
Stop	2022-11-10 12:31:13
Duration	00:15:27.2
Run Time	00:15:25.0
Pause	00:00:02.2
Pre-Calibration	2022-11-10 11:22:20
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	A Weighting			
Detector	Slow			
Preamplifier	PRMLxT1L			
Microphone Correction	Off			
Integration Method	Linear			
Overload	121.8 dB			
	A	**C**	**Z**	
Under Range Peak	**78.1**	75.1	80.1	dB
Under Range Limit	**26.1**	25.9	31.0	dB
Noise Floor	16.5	16.7	21.9	dB

	First	Second	Third
Instrument Identification			

Results

LA_{eq}	55.1 dB		
LAE	84.8 dB		
EA	33.258 µPa²h		
EA8	1.035 mPa²h		
EA40	5.177 mPa²h		
$LA_{peak\ (max)}$	2022-11-10 12:18:44	86.2 dB	
LAS_{max}	2022-11-10 12:19:55	67.2 dB	
LAS_{min}	2022-11-10 12:26:38	40.9 dB	
SEA	-99.9 dB		

	Exceedance Counts	Duration
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LA_{peak} > 135.0 dB	0	0.0 s
LA_{peak} > 137.0 dB	0	0.0 s
LA_{peak} > 140.0 dB	0	0.0 s

LC_{eq}	61.3 dB	
LA_{eq}	55.1 dB	
LC_{eq} - LA_{eq}	6.2 dB	
LAI_{eq}	58.1 dB	
LA_{eq}	55.1 dB	
LAI_{eq} - LA_{eq}	3.0 dB	

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	55.1		61.3			
$L_{S(max)}$	67.2	2022/11/10 12:19:55				
$L_{S(min)}$	40.9	2022/11/10 12:26:38				
$L_{Peak(max)}$	86.2	2022/11/10 12:18:44				

Overload Count	0	
Overload Duration	0.0	s

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	3	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results

Dose	0.02	0.00	%
Projected Dose	0.66	0.03	%
TWA (Projected)	53.8	55.1	dB
TWA (t)	29.0	40.2	dB
Lep (t)	40.2	40.2	dB

Statistics

LA 5.00	60.4	dB
LA 8.33	58.8	dB
LA 33.30	54.5	dB
LA 50.00	52.8	dB
LA 66.60	50.7	dB
LA 90.00	42.4	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**
PRMLxT1L	2022-11-10 11:22:20	-28.12	77.05	69.05	66.03	56.89	59.62	55.32	53.59
PRMLxT1L	2022-11-09 17:09:48	-28.12	70.20	65.92	67.84	66.49	60.15	58.78	60.36
PRMLxT1L	2022-11-09 17:09:22	-28.13	60.67	56.91	56.20	55.90	54.23	50.53	50.46
PRMLxT1L	2022-10-20 10:39:14	-27.68	60.56	60.22	58.34	56.12	55.51	57.88	56.86
PRMLxT1L	2022-10-20 10:33:14	-28.12	67.19	52.05	52.09	60.61	57.57	52.68	55.40
PRMLxT1L	2022-06-06 15:20:40	-28.09	69.24	60.61	58.45	57.42	55.91	58.21	64.68

PRMLxT1L	2022-06-06 14:42:30	-27.94	78.51	75.14	75.48	73.77	79.28	70.34	71.40
PRMLxT1L	2022-06-06 12:37:27	-28.09	59.17	63.10	58.24	59.86	62.67	72.19	62.37
PRMLxT1L	2022-06-06 12:11:26	-27.99	66.28	50.59	65.48	66.79	63.32	52.73	58.03
PRMLxT1L	2022-06-06 07:58:15	-28.11	59.06	60.74	67.69	51.52	61.13	49.59	50.52
PRMLxT1L	2022-06-06 07:32:49	-28.08	51.32	50.20	39.39	48.10	54.51	55.83	46.88

31.5	40.0	50.0	63.0	80.0	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150
58.71	53.99	55.88	52.00	51.19	51.52	54.20	47.31	41.33	40.15	38.31	38.74	39.11	32.25	31.75	113.98	49.00	18.69	65.90	21.70	62.80
60.84	62.09	67.87	70.16	64.92	61.40	59.28	61.75	59.01	55.60	58.82	57.83	50.84	47.26	51.27	114.00	49.24	34.85	66.11	22.83	62.95
53.68	58.49	50.06	45.89	43.37	38.24	38.44	39.35	33.68	33.13	33.72	33.04	27.12	21.92	27.36	113.54	48.58	19.20	65.60	21.31	62.49
46.20	42.02	42.72	48.20	48.98	38.59	49.86	39.17	36.97	32.20	31.73	30.41	26.72	25.35	31.60	114.43	49.36	21.25	66.05	22.59	62.79
54.59	55.65	61.68	59.54	56.96	55.25	58.11	54.41	60.28	54.36	54.21	57.42	61.89	55.05	38.09	113.95	49.08	25.18	66.11	21.83	62.87
69.42	54.21	57.41	57.41	51.58	52.72	58.84	50.95	52.58	48.35	47.05	48.15	44.02	38.48	30.90	113.83	48.65	19.41	66.14	21.79	62.86

73.02	69.69	67.21	62.02	63.27	66.21	63.18	57.42	60.86	58.47	49.63	47.28	45.13	36.69	31.61	114.13	49.05	20.07	66.31	22.13	63.03
58.40	70.69	59.47	61.62	60.73	56.19	57.43	53.17	50.53	47.26	44.71	45.76	43.02	36.82	30.80	113.88	48.74	17.33	65.95	22.06	62.79
60.69	54.03	57.24	58.79	57.08	56.99	50.31	50.81	53.76	52.63	47.96	46.99	43.76	35.07	29.76	114.11	49.06	19.77	66.28	22.26	63.02
54.33	51.86	52.95	59.38	50.59	51.86	54.90	46.38	43.46	49.11	45.57	41.73	39.15	32.16	29.29	113.95	48.87	18.58	65.95	22.15	62.76
47.76	47.38	54.86	49.83	50.80	48.84	48.01	46.00	46.74	42.13	40.45	39.43	38.96	33.69	30.58	114.04	48.98	18.96	66.04	22.02	62.85

4000	5000	6300	8000	10000	12500	16000	20000
28.52	34.11	21.77	22.53	23.93	25.95	27.98	30.94
28.75	33.73	24.31	22.93	23.89	26.16	28.69	31.01
27.88	33.27	21.17	22.31	23.55	25.43	28.24	30.40
26.20	34.96	22.96	23.48	24.90	26.58	28.81	31.23
28.70	33.55	21.76	22.20	23.84	25.83	28.20	30.82
28.72	33.34	21.67	22.87	24.16	25.89	28.24	30.72

28.09	33.45	21.75	22.97	24.13	25.97	28.68	30.77
28.18	33.40	22.10	22.48	23.96	25.85	28.22	30.65
28.43	33.45	22.05	23.01	24.60	26.22	28.64	31.01
28.09	33.49	21.70	22.99	23.92	25.71	28.03	30.77
28.03	33.63	21.85	22.82	24.23	26.11	28.37	30.62

Summary

File Name on Meter	LxT_Data.123.s
File Name on PC	LxT_0003285-20221110 124143-LxT_Data.123.ldbin
Serial Number	0003285
Model	SoundTrack LxT®
Firmware Version	2.302
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-11-10 12:41:43
Stop	2022-11-10 12:58:02
Duration	00:16:19.3
Run Time	00:16:17.5
Pause	00:00:01.8
Pre-Calibration	2022-11-10 11:22:20
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	A Weighting			
Detector	Slow			
Preamplifier	PRMLxT1L			
Microphone Correction	Off			
Integration Method	Linear			
Overload	121.8 dB			
	A	**C**	**Z**	
Under Range Peak	**78.1**	75.1	80.1	dB
Under Range Limit	**26.1**	25.9	31.0	dB
Noise Floor	16.5	16.7	21.9	dB

	First	Second	Third
Instrument Identification			

Results

LA_{eq}	47.1 dB		
LAE	77.0 dB		
EA	5.570 µPa²h		
EA8	164.116 µPa²h		
EA40	820.578 µPa²h		
$LA_{peak\ (max)}$	2022-11-10 12:53:21	80.7 dB	
LAS_{max}	2022-11-10 12:53:22	58.4 dB	
LAS_{min}	2022-11-10 12:52:39	40.9 dB	
SEA	-99.9 dB		

	Exceedance Counts	Duration
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LA_{peak} > 135.0 dB	0	0.0 s
LA_{peak} > 137.0 dB	0	0.0 s
LA_{peak} > 140.0 dB	0	0.0 s

LC_{eq}	69.9 dB	
LA_{eq}	47.1 dB	
LC_{eq} - LA_{eq}	22.8 dB	
LAI_{eq}	51.1 dB	
LA_{eq}	47.1 dB	
LAI_{eq} - LA_{eq}	4.0 dB	

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	47.1		69.9			
$L_{S(max)}$	58.4	2022/11/10 12:53:22				
$L_{S(min)}$	40.9	2022/11/10 12:52:39				
$L_{Peak(max)}$	80.7	2022/11/10 12:53:21				

Overload Count	0	
Overload Duration	0.0	s

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	3	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results

Dose	0.01	0.00	%
Projected Dose	0.24	0.01	%
TWA (Projected)	46.5	47.1	dB
TWA (t)	22.1	32.4	dB
Lep (t)	32.4	32.4	dB

Statistics

LA 5.00	51.8	dB
LA 8.33	50.7	dB
LA 33.30	46.7	dB
LA 50.00	44.9	dB
LA 66.60	43.9	dB
LA 90.00	42.6	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**
PRMLxT1L	2022-11-10 11:22:20	-28.12	77.05	69.05	66.03	56.89	59.62	55.32	53.59
PRMLxT1L	2022-11-09 17:09:48	-28.12	70.20	65.92	67.84	66.49	60.15	58.78	60.36
PRMLxT1L	2022-11-09 17:09:22	-28.13	60.67	56.91	56.20	55.90	54.23	50.53	50.46
PRMLxT1L	2022-10-20 10:39:14	-27.68	60.56	60.22	58.34	56.12	55.51	57.88	56.86
PRMLxT1L	2022-10-20 10:33:14	-28.12	67.19	52.05	52.09	60.61	57.57	52.68	55.40
PRMLxT1L	2022-06-06 15:20:40	-28.09	69.24	60.61	58.45	57.42	55.91	58.21	64.68

PRMLxT1L	2022-06-06 14:42:30	-27.94	78.51	75.14	75.48	73.77	79.28	70.34	71.40
PRMLxT1L	2022-06-06 12:37:27	-28.09	59.17	63.10	58.24	59.86	62.67	72.19	62.37
PRMLxT1L	2022-06-06 12:11:26	-27.99	66.28	50.59	65.48	66.79	63.32	52.73	58.03
PRMLxT1L	2022-06-06 07:58:15	-28.11	59.06	60.74	67.69	51.52	61.13	49.59	50.52
PRMLxT1L	2022-06-06 07:32:49	-28.08	51.32	50.20	39.39	48.10	54.51	55.83	46.88

31.5	40.0	50.0	63.0	80.0	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150
58.71	53.99	55.88	52.00	51.19	51.52	54.20	47.31	41.33	40.15	38.31	38.74	39.11	32.25	31.75	113.98	49.00	18.69	65.90	21.70	62.80
60.84	62.09	67.87	70.16	64.92	61.40	59.28	61.75	59.01	55.60	58.82	57.83	50.84	47.26	51.27	114.00	49.24	34.85	66.11	22.83	62.95
53.68	58.49	50.06	45.89	43.37	38.24	38.44	39.35	33.68	33.13	33.72	33.04	27.12	21.92	27.36	113.54	48.58	19.20	65.60	21.31	62.49
46.20	42.02	42.72	48.20	48.98	38.59	49.86	39.17	36.97	32.20	31.73	30.41	26.72	25.35	31.60	114.43	49.36	21.25	66.05	22.59	62.79
54.59	55.65	61.68	59.54	56.96	55.25	58.11	54.41	60.28	54.36	54.21	57.42	61.89	55.05	38.09	113.95	49.08	25.18	66.11	21.83	62.87
69.42	54.21	57.41	57.41	51.58	52.72	58.84	50.95	52.58	48.35	47.05	48.15	44.02	38.48	30.90	113.83	48.65	19.41	66.14	21.79	62.86

73.02	69.69	67.21	62.02	63.27	66.21	63.18	57.42	60.86	58.47	49.63	47.28	45.13	36.69	31.61	114.13	49.05	20.07	66.31	22.13	63.03
58.40	70.69	59.47	61.62	60.73	56.19	57.43	53.17	50.53	47.26	44.71	45.76	43.02	36.82	30.80	113.88	48.74	17.33	65.95	22.06	62.79
60.69	54.03	57.24	58.79	57.08	56.99	50.31	50.81	53.76	52.63	47.96	46.99	43.76	35.07	29.76	114.11	49.06	19.77	66.28	22.26	63.02
54.33	51.86	52.95	59.38	50.59	51.86	54.90	46.38	43.46	49.11	45.57	41.73	39.15	32.16	29.29	113.95	48.87	18.58	65.95	22.15	62.76
47.76	47.38	54.86	49.83	50.80	48.84	48.01	46.00	46.74	42.13	40.45	39.43	38.96	33.69	30.58	114.04	48.98	18.96	66.04	22.02	62.85

4000	5000	6300	8000	10000	12500	16000	20000
28.52	34.11	21.77	22.53	23.93	25.95	27.98	30.94
28.75	33.73	24.31	22.93	23.89	26.16	28.69	31.01
27.88	33.27	21.17	22.31	23.55	25.43	28.24	30.40
26.20	34.96	22.96	23.48	24.90	26.58	28.81	31.23
28.70	33.55	21.76	22.20	23.84	25.83	28.20	30.82
28.72	33.34	21.67	22.87	24.16	25.89	28.24	30.72

28.09	33.45	21.75	22.97	24.13	25.97	28.68	30.77
28.18	33.40	22.10	22.48	23.96	25.85	28.22	30.65
28.43	33.45	22.05	23.01	24.60	26.22	28.64	31.01
28.09	33.49	21.70	22.99	23.92	25.71	28.03	30.77
28.03	33.63	21.85	22.82	24.23	26.11	28.37	30.62

Summary

File Name on Meter	LxT_Data.126.s
File Name on PC	LxT_0003285-20221215 112934-LxT_Data.126.ldbin
Serial Number	0003285
Model	SoundTrack LxT®
Firmware Version	2.302
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-12-15 11:29:34
Stop	2022-12-16 16:22:02
Duration	28:52:28.203
Run Time	28:52:28.203
Pause	00:00:00.0
Pre-Calibration	2022-12-15 11:26:33
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting	
Peak Weight	A Weighting	
Detector	Slow	
Preamplifier	PRMLxT1L	
Microphone Correction	Off	
Integration Method	Linear	
Overload	121.8	dB

	A	**C**	**Z**	
Under Range Peak	**78.1**	75.1	80.1	dB
Under Range Limit	**26.1**	25.8	31.0	dB
Noise Floor	16.4	16.7	21.8	dB

	First	Second	Third
Instrument Identification			

Results

LA_{eq}	49.3 dB		
LAE	99.5 dB		
EA	983.047 µPa²h		
EA8	272.364 µPa²h		
EA40	1.362 mPa²h		
$LA_{peak\ (max)}$	2022-12-15 11:30:12	107.4 dB	
LAS_{max}	2022-12-15 11:30:12	72.2 dB	
LAS_{min}	2022-12-16 01:44:28	28.1 dB	
SEA	-99.9 dB		

	Exceedance Counts	Duration
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LA_{peak} > 135.0 dB	0	0.0 s
LA_{peak} > 137.0 dB	0	0.0 s
LA_{peak} > 140.0 dB	0	0.0 s

LC_{eq}	57.6 dB	
LA_{eq}	49.3 dB	
LC_{eq} - LA_{eq}	8.3 dB	
LAI_{eq}	50.9 dB	
LA_{eq}	49.3 dB	
LAI_{eq} - LA_{eq}	1.6 dB	

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	49.3		57.6			
$L_{S(max)}$	72.2	2022/12/15 11:30:12				
$L_{S(min)}$	28.1	2022/12/16 1:44:28				
$L_{Peak(max)}$	107.4	2022/12/15 11:30:12				

Overload Count	0	
Overload Duration	0.0	s

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	3	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results

Dose	1.02	0.03	%
Projected Dose	0.28	0.01	%
TWA (Projected)	47.7	49.3	dB
TWA (t)	57.0	54.9	dB
Lep (t)	54.9	54.9	dB

Statistics

LA 5.00	55.5	dB
LA 8.33	54.1	dB
LA 33.30	47.1	dB
LA 50.00	44.5	dB
LA 66.60	42.7	dB
LA 90.00	37.5	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**
PRMLxT1L	2022-12-15 11:26:33	-28.10	56.31	55.95	45.63	56.10	51.02	50.87	45.74
PRMLxT1L	2022-12-15 10:58:41	-28.14	68.50	58.66	55.60	57.18	52.29	53.93	55.67
PRMLxT1L	2022-12-15 10:58:26	-28.15	62.36	54.82	57.50	58.04	56.80	57.01	54.28
PRMLxT1L	2022-11-30 15:17:12	-28.12	64.72	59.93	57.39	62.51	54.46	55.62	52.04
PRMLxT1L	2022-11-10 13:20:53	-28.14	64.02	67.89	66.10	60.41	68.71	65.33	66.53
PRMLxT1L	2022-11-10 11:22:20	-28.12	77.05	69.05	66.03	56.89	59.62	55.32	53.59

PRMLxT1L	2022-11-09 17:09:48	-28.12	70.20	65.92	67.84	66.49	60.15	58.78	60.36
PRMLxT1L	2022-11-09 17:09:22	-28.13	60.67	56.91	56.20	55.90	54.23	50.53	50.46
PRMLxT1L	2022-10-20 10:39:14	-27.68	60.56	60.22	58.34	56.12	55.51	57.88	56.86
PRMLxT1L	2022-10-20 10:33:14	-28.12	67.19	52.05	52.09	60.61	57.57	52.68	55.40
PRMLxT1L	2022-06-06 15:20:40	-28.09	69.24	60.61	58.45	57.42	55.91	58.21	64.68

31.5	40.0	50.0	63.0	80.0	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150
48.38	49.56	44.88	45.81	47.14	46.40	43.08	38.96	39.60	35.32	33.93	32.41	30.25	22.50	28.40	114.03	48.99	19.56	66.38	21.48	62.87
51.94	46.27	49.87	46.82	42.80	44.95	39.43	35.63	30.77	36.46	34.08	29.92	29.36	24.21	28.75	113.99	49.09	18.26	65.94	22.07	62.76
44.51	51.66	49.76	49.54	46.65	44.02	39.43	33.36	30.04	32.24	32.05	33.26	33.39	23.52	29.22	113.95	49.06	19.17	65.84	21.74	62.72
54.51	54.75	45.29	47.99	45.67	39.73	48.86	44.22	47.60	58.78	46.14	46.87	48.87	44.24	29.76	114.01	49.04	19.41	65.97	21.73	62.86
73.19	60.98	64.78	58.46	60.19	59.67	60.28	58.05	54.64	53.41	48.68	51.82	44.31	38.83	45.12	113.96	49.47	21.02	65.94	23.16	62.82
58.71	53.99	55.88	52.00	51.19	51.52	54.20	47.31	41.33	40.15	38.31	38.74	39.11	32.25	31.75	113.98	49.00	18.69	65.90	21.70	62.80

60.84	62.09	67.87	70.16	64.92	61.40	59.28	61.75	59.01	55.60	58.82	57.83	50.84	47.26	51.27	114.00	49.24	34.85	66.11	22.83	62.95
53.68	58.49	50.06	45.89	43.37	38.24	38.44	39.35	33.68	33.13	33.72	33.04	27.12	21.92	27.36	113.54	48.58	19.20	65.60	21.31	62.49
46.20	42.02	42.72	48.20	48.98	38.59	49.86	39.17	36.97	32.20	31.73	30.41	26.72	25.35	31.60	114.43	49.36	21.25	66.05	22.59	62.79
54.59	55.65	61.68	59.54	56.96	55.25	58.11	54.41	60.28	54.36	54.21	57.42	61.89	55.05	38.09	113.95	49.08	25.18	66.11	21.83	62.87
69.42	54.21	57.41	57.41	51.58	52.72	58.84	50.95	52.58	48.35	47.05	48.15	44.02	38.48	30.90	113.83	48.65	19.41	66.14	21.79	62.86

4000	5000	6300	8000	10000	12500	16000	20000
29.10	33.61	21.93	22.91	24.13	26.13	28.78	30.89
29.11	34.32	22.03	22.94	23.88	25.87	28.19	31.23
28.90	34.36	21.65	22.42	23.78	25.73	28.11	31.42
28.25	33.67	21.88	22.52	24.13	25.94	28.77	31.35
28.61	33.90	24.15	23.37	24.78	25.97	28.42	30.78
28.52	34.11	21.77	22.53	23.93	25.95	27.98	30.94

28.75	33.73	24.31	22.93	23.89	26.16	28.69	31.01
27.88	33.27	21.17	22.31	23.55	25.43	28.24	30.40
26.20	34.96	22.96	23.48	24.90	26.58	28.81	31.23
28.70	33.55	21.76	22.20	23.84	25.83	28.20	30.82
28.72	33.34	21.67	22.87	24.16	25.89	28.24	30.72

Residential Program Demo (Leq)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	33	90.0
Residential	50	85.5

Equipment	Reference Emission Noise Levels (Leq) at 50 feet[1]	Usage Factor[1]
Excavator	85	0.4
Scraper	85	0.4
Dump Truck	84	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Excavator	81.0
Scraper	81.0
Dump Truck	80.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
85.5

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log (U.F.) - 20*\log (D/50) - 10*G*\log (D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Residential Program Site Preparation

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	34	90.0
Residence 1	50	85.9

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Front End Loader	80	0.4
Excavator	85	0.4
Scraper	85	0.4
Dump Truck	84	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Front End Loader	76.0
Excavator	81.0
Scraper	81.0
Dump Truck	80.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
85.9

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Residential Program Building Construction

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	28	90.0
Residence	50	83.8

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Front End Loader	80	0.4
Concrete Mixer Truck	85	0.4
Concrete Pump Truck	82	0.2
Crane	84	0.16

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Front End Loader	76.0
Concrete Mixer Truck	81.0
Concrete Pump Truck	75.0
Crane	76.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
83.8

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Residential Program Architectural Exterior Finishes

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	23	90.0
Residence	50	81.8

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Crane	85	0.16
Tractor	84	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Crane	77.0
Tractor	80.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
81.8

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log (U.F.) - 20*\log (D/50) - 10*G*\log (D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Residential Program Interior Finishes

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	20	90.0
Residence	50	80.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Tractor	84	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Tractor	80.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
80.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Academic Program Demo Leq

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	29	90.0
Residence	50	84.3

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Excavator	85	0.4
Front End Loader	80	0.4
Dump Truck	84	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Excavator	81.0
Front End Loader	76.0
Dump Truck	80.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
84.3

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Academic Program Site Preparation Leq

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	25	90.0
Residence	50	82.6

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Backhoe	80	0.4
Front End Loader	80	0.4
Dump Truck	84	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Backhoe	76.0
Front End Loader	76.0
Dump Truck	80.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
82.6

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Academic Program Construction Leq

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	26	90.0
Residence	50	83.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Concrete Mixer Truck	85	0.4
Front End Loader	80	0.4
Concrete Pump Truck	82	0.2

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Concrete Mixer Truck	81.0
Front End Loader	76.0
Concrete Pump Truck	75.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
83.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Academic Program Architectural Exterior Finishes Leq

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	23	90.0
Residence	50	81.8

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Crane	85	0.16
Tractor	84	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Crane	77.0
Tractor	80.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
81.8

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Academic Program Architectural Exterior Finishes Leq

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	20	90.0
Residence	50	80.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Tractor	84	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Tractor	80.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
80.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Landscape Program Site Preparation Leq

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	29	90.0
Residence	50	84.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Scraper	85	0.4
Excavator	85	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Scraper	81.0
Excavator	81.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
84.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log (U.F.) - 20*\log (D/50) - 10*G*\log (D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Landscape Program Construction Leq

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	30	90.0
Residence	50	84.5

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Concrete Mixer Truck	85	0.4
Paver	85	0.5

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Concrete Mixer Truck	81.0
Paver	82.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
84.5

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Landscape Program Construction Leq

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	15	90.0
Residence	50	77.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Crane	85	0.16

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Crane	77.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
77.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log (U.F.) - 20*\log (D/50) - 10*G*\log (D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Landscape Program Construction Leq

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	20	90.0
Residence	50	80.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Tractor	84	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Tractor	80.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
80.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Attenuation Calculations for Stationary Noise Sources

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

STEP 1: Identify the noise source and enter the reference noise level (dBA and distance).

STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.

STEP 3: Select the distance to the receiver.

Noise Source/ID	Reference Noise Level			Attenuation Characteristics				Attenuated Noise Level at Receptor		
	noise level (dBA)	@	distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor	noise level (dBA)	@	distance (ft)
Helicopter	79.5	@	50	soft	6	5	0.65	79.5	@	50
chipper	99.0	@	3	soft	6	5	0.65	67.7	@	50
blasting (night lmax)	94.0	@	50	soft	6	5	0.65	65.0	@	620
helicopter (night leq)	68.0	@	492.00	soft	6	5	0.65	45.1	@	3600
blasting (day lmax)	94.0	@	50	soft	6	5	0.65	70.1	@	400
helicopter (day leq)	68.0	@	492	soft	6	5	0.65	55.0	@	1520
Blasting (SF Res)	94.0	@	50	soft	6	5	0.65	79.6	@	175
blasting	94.0	@	50	soft	6	5	0.65	86.0	@	100
construction	85.0	@	50	soft	6	5	0.65	93.0	@	25
construction	95.0	@	50	soft	6	5	0.65	103.0	@	25
							0.66			
							0.66			
							0.66			
							0.66			

Notes:

Estimates of attenuated noise levels do not account for reductions from intervening barriers, including walls, trees, vegetation, or structures of any type.

Computation of the attenuated noise level is based on the equation presented on pg. 12-3 and 12-4 of FTA 2006.

Computation of the ground factor is based on the equation presentd in Figure 6-23 on pg. 6-23 of FTA 2006, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

Sources:

Federal Transit Association (FTA). 2006 (May). Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. Washington, D.C. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: September 24, 2010.

Equipment Description	Acoustical Usage Factor (%)	Spec 721.560 Lmax @ 50ft (dBA slow)	Actual Measured Lmax @ 50ft (dBA slow)	No. of Actual Data Samples (count)	Spec 721.560 LmaxCalc	Spec 721.560 Leq	Distance	Actual Measured LmaxCalc	Actual Measured Leq
Auger Drill Rig	20	85	84	36	79.0	72.0	100	78.0	71.0
Backhoe	40	80	78	372	74.0	70.0	100	72.0	68.0
Bar Bender	20	80	na	0	74.0	67.0	100		
Blasting	na	94	na	0	88.0		100		
Boring Jack Power Unit	50	80	83	1	74.0	71.0	100	77.0	74.0
Chain Saw	20	85	84	46	79.0	72.0	100	78.0	71.0
Clam Shovel (dropping)	20	93	87	4	87.0	80.0	100	81.0	74.0
Compactor (ground)	20	80	83	57	74.0	67.0	100	77.0	70.0
Compressor (air)	40	80	78	18	74.0	70.0	100	72.0	68.0
Concrete Batch Plant	15	83	na	0	77.0	68.7	100		
Concrete Mixer Truck	40	85	79	40	79.0	75.0	100	73.0	69.0
Concrete Pump Truck	20	82	81	30	76.0	69.0	100	75.0	68.0
Concrete Saw	20	90	90	55	84.0	77.0	100	84.0	77.0
Crane	16	85	81	405	79.0	71.0	100	75.0	67.0
Dozer	40	85	82	55	79.0	75.0	100	76.0	72.0
Drill Rig Truck	20	84	79	22	78.0	71.0	100	73.0	66.0
Drum Mixer	50	80	80	1	74.0	71.0	100	74.0	71.0
Dump Truck	40	84	76	31	78.0	74.0	100	70.0	66.0
Excavator	40	85	81	170	79.0	75.0	100	75.0	71.0
Flat Bed Truck	40	84	74	4	78.0	74.0	100	68.0	64.0
Front End Loader	40	80	79	96	74.0	70.0	100	73.0	69.0
Generator	50	82	81	19	76.0	73.0	100	75.0	72.0
Generator (<25KVA, VMS signs)	50	70	73	74	64.0	61.0	100	67.0	64.0
Gradall	40	85	83	70	79.0	75.0	100	77.0	73.0
Grader	40	85	na	0	79.0	75.0	100		
Grapple (on Backhoe)	40	85	87	1	79.0	75.0	100	81.0	77.0
Horizontal Boring Hydr. Jack	25	80	82	6	74.0	68.0	100	76.0	70.0
Hydra Break Ram	10	90	na	0	84.0	74.0	100		
Impact Pile Driver	20	95	101	11	89.0	82.0	100	95.0	88.0
Jackhammer	20	85	89	133	79.0	72.0	100	83.0	76.0
Man Lift	20	85	75	23	79.0	72.0	100	69.0	62.0
Mounted Impact Hammer (hoe ram)	20	90	90	212	84.0	77.0	100	84.0	77.0
Pavement Scarafier	20	85	90	2	79.0	72.0	100	84.0	77.0
Paver	50	85	77	9	79.0	76.0	100	71.0	68.0
Pickup Truck	40	55	75	1	49.0	45.0	100	69.0	65.0
Pneumatic Tools	50	85	85	90	79.0	76.0	100	79.0	76.0
Pumps	50	77	81	17	71.0	68.0	100	75.0	72.0
Refrigerator Unit	100	82	73	3	76.0	76.0	100	67.0	67.0
Rivit Buster/chipping gun	20	85	79	19	79.0	72.0	100	73.0	66.0
Rock Drill	20	85	81	3	79.0	72.0	100	75.0	68.0
Roller	20	85	80	16	79.0	72.0	100	74.0	67.0
Sand Blasting (Single Nozzle)	20	85	96	9	79.0	72.0	100	90.0	83.0
Scraper	40	85	84	12	79.0	75.0	100	78.0	74.0
Shears (on backhoe)	40	85	96	5	79.0	75.0	100	90.0	86.0
Slurry Plant	100	78	78	1	72.0	72.0	100	72.0	72.0
Slurry Trenching Machine	50	82	80	75	76.0	73.0	100	74.0	71.0
Soil Mix Drill Rig	50	80	na	0	74.0	71.0	100		
Tractor	40	84	na	0	78.0	74.0	100		
Vacuum Excavator (Vac-truck)	40	85	85	149	79.0	75.0	100	79.0	75.0
Vacuum Street Sweeper	10	80	82	19	74.0	64.0	100	76.0	66.0
Ventilation Fan	100	85	79	13	79.0	79.0	100	73.0	73.0
Vibrating Hopper	50	85	87	1	79.0	76.0	100	81.0	78.0
Vibratory Concrete Mixer	20	80	80	1	74.0	67.0	100	74.0	67.0
Vibratory Pile Driver	20	95	101	44	89.0	82.0	100	95.0	88.0
Warning Horn	5	85	83	12	79.0	66.0	100	77.0	64.0
Welder / Torch	40	73	74	5	67.0	63.0	100	68.0	64.0
chipper		75							

Source:
FHWA Roadway Construction Noise Model, January 2006. Table 9.1
U.S. Department of Transportation
CA/T Construction Spec. 721.560

Residential Program Demo (Lmax)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	48	90.0
Residential	50	89.5

Equipment	Reference Emission Noise Levels (Leq) at 50 feet[1]	Usage Factor[1]
Excavator	85	1
Scraper	85	1
Dump Truck	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Excavator	85.0
Scraper	85.0
Dump Truck	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
89.5

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Residential Program Site Preparation (Lmax)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	50	90.0
Residence 1	50	89.9

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Front End Loader	80	1
Excavator	85	1
Scraper	85	1
Dump Truck	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Front End Loader	80.0
Excavator	85.0
Scraper	85.0
Dump Truck	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
89.9

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Residential Program Building Construction (Lmax)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	46	90.0
Residence	50	89.2

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Front End Loader	80	1
Concrete Mixer Truck	85	1
Concrete Pump Truck	82	1
Crane	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Front End Loader	80.0
Concrete Mixer Truck	85.0
Concrete Pump Truck	82.0
Crane	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
89.2

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Residential Program Architectural Exterior Finishes (Lmax)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	40	90.0
Residence	50	87.5

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Crane	85	1
Tractor	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Crane	85.0
Tractor	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
87.5

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Residential Program Interior Finishes (Lmax)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	29	90.0
Residence	50	84.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Tractor	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Tractor	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
84.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Academic Program Demo Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	43	90.0
Residence	50	88.2

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Excavator	85	1
Front End Loader	80	1
Dump Truck	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Excavator	85.0
Front End Loader	80.0
Dump Truck	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
88.2

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Academic Program Site Preparation Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	36	90.0
Residence	50	86.5

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Backhoe	80	1
Front End Loader	80	1
Dump Truck	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Backhoe	80.0
Front End Loader	80.0
Dump Truck	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
86.5

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Academic Program Construction Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	40	90.0
Residence	50	87.6

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Concrete Mixer Truck	85	1
Front End Loader	80	1
Concrete Pump Truck	82	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Concrete Mixer Truck	85.0
Front End Loader	80.0
Concrete Pump Truck	82.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
87.6

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Academic Program Architectural Exterior Finishes Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	40	90.0
Residence	50	87.5

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Crane	85	1
Tractor	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Crane	85.0
Tractor	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
87.5

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Academic Program Architectural Exterior Finishes Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	29	90.0
Residence	50	84.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Tractor	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Tractor	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
84.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Landscape Program Site Preparation Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	42	90.0
Residence	50	88.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Scraper	85	1
Excavator	85	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Scraper	85.0
Excavator	85.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
88.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Landscape Program Construction Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	42	90.0
Residence	50	88.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Concrete Mixer Truck	85	1
Paver	85	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Concrete Mixer Truck	85.0
Paver	85.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
88.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Landscape Program Construction Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	32	90.0
Residence	50	85.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Crane	85	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Crane	85.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
85.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Landscape Program Construction Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	29	90.0
Residence	50	84.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Tractor	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Tractor	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
84.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Attenuation Calculations for Stationary Noise Sources

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

STEP 1: Identify the noise source and enter the reference noise level (dBA and distance).

STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.

STEP 3: Select the distance to the receiver.

Noise Source/ID	Reference Noise Level			Attenuation Characteristics				Attenuated Noise Level at Receptor		
	noise level (dBA)	@	distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor	noise level (dBA)	@	distance (ft)
Helicopter	79.5	@	50	soft	6	5	0.65	79.5	@	50
chipper	99.0	@	3	soft	6	5	0.65	67.7	@	50
blasting (night lmax)	94.0	@	50	soft	6	5	0.65	65.0	@	620
helicopter (night leq)	68.0	@	492.00	soft	6	5	0.65	45.1	@	3600
blasting (day lmax)	94.0	@	50	soft	6	5	0.65	70.1	@	400
helicopter (day leq)	68.0	@	492	soft	6	5	0.65	55.0	@	1520
Blasting (SF Res)	94.0	@	50	soft	6	5	0.65	79.6	@	175
blasting	94.0	@	50	soft	6	5	0.65	86.0	@	100
construction	85.0	@	50	soft	6	5	0.65	93.0	@	25
construction	95.0	@	50	soft	6	5	0.65	103.0	@	25
							0.66			
							0.66			
							0.66			
							0.66			

Notes:

Estimates of attenuated noise levels do not account for reductions from intervening barriers, including walls, trees, vegetation, or structures of any type.

Computation of the attenuated noise level is based on the equation presented on pg. 12-3 and 12-4 of FTA 2006.

Computation of the ground factor is based on the equation presentd in Figure 6-23 on pg. 6-23 of FTA 2006, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

Sources:

Federal Transit Association (FTA). 2006 (May). Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. Washington, D.C. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: September 24, 2010.

Equipment Description	Acoustical Usage Factor (%)	Spec 721.560 Lmax @ 50ft (dBA slow)	Actual Measured Lmax @ 50ft (dBA slow)	No. of Actual Data Samples (count)	Spec 721.560 LmaxCalc	Spec 721.560 Leq	Distance	Actual Measured LmaxCalc	Actual Measured Leq
Auger Drill Rig	20	85	84	36	79.0	72.0	100	78.0	71.0
Backhoe	40	80	78	372	74.0	70.0	100	72.0	68.0
Bar Bender	20	80	na	0	74.0	67.0	100		
Blasting	na	94	na	0	88.0		100		
Boring Jack Power Unit	50	80	83	1	74.0	71.0	100	77.0	74.0
Chain Saw	20	85	84	46	79.0	72.0	100	78.0	71.0
Clam Shovel (dropping)	20	93	87	4	87.0	80.0	100	81.0	74.0
Compactor (ground)	20	80	83	57	74.0	67.0	100	77.0	70.0
Compressor (air)	40	80	78	18	74.0	70.0	100	72.0	68.0
Concrete Batch Plant	15	83	na	0	77.0	68.7	100		
Concrete Mixer Truck	40	85	79	40	79.0	75.0	100	73.0	69.0
Concrete Pump Truck	20	82	81	30	76.0	69.0	100	75.0	68.0
Concrete Saw	20	90	90	55	84.0	77.0	100	84.0	77.0
Crane	16	85	81	405	79.0	71.0	100	75.0	67.0
Dozer	40	85	82	55	79.0	75.0	100	76.0	72.0
Drill Rig Truck	20	84	79	22	78.0	71.0	100	73.0	66.0
Drum Mixer	50	80	80	1	74.0	71.0	100	74.0	71.0
Dump Truck	40	84	76	31	78.0	74.0	100	70.0	66.0
Excavator	40	85	81	170	79.0	75.0	100	75.0	71.0
Flat Bed Truck	40	84	74	4	78.0	74.0	100	68.0	64.0
Front End Loader	40	80	79	96	74.0	70.0	100	73.0	69.0
Generator	50	82	81	19	76.0	73.0	100	75.0	72.0
Generator (<25KVA, VMS signs)	50	70	73	74	64.0	61.0	100	67.0	64.0
Gradall	40	85	83	70	79.0	75.0	100	77.0	73.0
Grader	40	85	na	0	79.0	75.0	100		
Grapple (on Backhoe)	40	85	87	1	79.0	75.0	100	81.0	77.0
Horizontal Boring Hydr. Jack	25	80	82	6	74.0	68.0	100	76.0	70.0
Hydra Break Ram	10	90	na	0	84.0	74.0	100		
Impact Pile Driver	20	95	101	11	89.0	82.0	100	95.0	88.0
Jackhammer	20	85	89	133	79.0	72.0	100	83.0	76.0
Man Lift	20	85	75	23	79.0	72.0	100	69.0	62.0
Mounted Impact Hammer (hoe ram)	20	90	90	212	84.0	77.0	100	84.0	77.0
Pavement Scarafier	20	85	90	2	79.0	72.0	100	84.0	77.0
Paver	50	85	77	9	79.0	76.0	100	71.0	68.0
Pickup Truck	40	55	75	1	49.0	45.0	100	69.0	65.0
Pneumatic Tools	50	85	85	90	79.0	76.0	100	79.0	76.0
Pumps	50	77	81	17	71.0	68.0	100	75.0	72.0
Refrigerator Unit	100	82	73	3	76.0	76.0	100	67.0	67.0
Rivit Buster/chipping gun	20	85	79	19	79.0	72.0	100	73.0	66.0
Rock Drill	20	85	81	3	79.0	72.0	100	75.0	68.0
Roller	20	85	80	16	79.0	72.0	100	74.0	67.0
Sand Blasting (Single Nozzle)	20	85	96	9	79.0	72.0	100	90.0	83.0
Scraper	40	85	84	12	79.0	75.0	100	78.0	74.0
Shears (on backhoe)	40	85	96	5	79.0	75.0	100	90.0	86.0
Slurry Plant	100	78	78	1	72.0	72.0	100	72.0	72.0
Slurry Trenching Machine	50	82	80	75	76.0	73.0	100	74.0	71.0
Soil Mix Drill Rig	50	80	na	0	74.0	71.0	100		
Tractor	40	84	na	0	78.0	74.0	100		
Vacuum Excavator (Vac-truck)	40	85	85	149	79.0	75.0	100	79.0	75.0
Vacuum Street Sweeper	10	80	82	19	74.0	64.0	100	76.0	66.0
Ventilation Fan	100	85	79	13	79.0	79.0	100	73.0	73.0
Vibrating Hopper	50	85	87	1	79.0	76.0	100	81.0	78.0
Vibratory Concrete Mixer	20	80	80	1	74.0	67.0	100	74.0	67.0
Vibratory Pile Driver	20	95	101	44	89.0	82.0	100	95.0	88.0
Warning Horn	5	85	83	12	79.0	66.0	100	77.0	64.0
Welder / Torch	40	73	74	5	67.0	63.0	100	68.0	64.0
chipper		75							

Source:
FHWA Roadway Construction Noise Model, January 2006. Table 9.1
U.S. Department of Transportation
CA/T Construction Spec. 721.560

Residential Program Demo (Lmax)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	48	90.0
Residential	50	89.5

Equipment	Reference Emission Noise Levels (Leq) at 50 feet[1]	Usage Factor[1]
Excavator	85	1
Scraper	85	1
Dump Truck	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Excavator	85.0
Scraper	85.0
Dump Truck	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
89.5

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Residential Program Site Preparation (Lmax)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	50	90.0
Residence 1	50	89.9

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Front End Loader	80	1
Excavator	85	1
Scraper	85	1
Dump Truck	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Front End Loader	80.0
Excavator	85.0
Scraper	85.0
Dump Truck	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
89.9

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Residential Program Building Construction (Lmax)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	46	90.0
Residence	50	89.2

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Front End Loader	80	1
Concrete Mixer Truck	85	1
Concrete Pump Truck	82	1
Crane	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Front End Loader	80.0
Concrete Mixer Truck	85.0
Concrete Pump Truck	82.0
Crane	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
89.2

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Residential Program Architectural Exterior Finishes (Lmax)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	40	90.0
Residence	50	87.5

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Crane	85	1
Tractor	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Crane	85.0
Tractor	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
87.5

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Residential Program Interior Finishes (Lmax)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	29	90.0
Residence	50	84.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Tractor	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Tractor	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
84.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Academic Program Demo Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	43	90.0
Residence	50	88.2

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Excavator	85	1
Front End Loader	80	1
Dump Truck	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Excavator	85.0
Front End Loader	80.0
Dump Truck	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
88.2

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Academic Program Site Preparation Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	36	90.0
Residence	50	86.5

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Backhoe	80	1
Front End Loader	80	1
Dump Truck	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Backhoe	80.0
Front End Loader	80.0
Dump Truck	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
86.5

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Academic Program Construction Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	40	90.0
Residence	50	87.6

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Concrete Mixer Truck	85	1
Front End Loader	80	1
Concrete Pump Truck	82	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Concrete Mixer Truck	85.0
Front End Loader	80.0
Concrete Pump Truck	82.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
87.6

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Academic Program Architectural Exterior Finishes Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	40	90.0
Residence	50	87.5

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Crane	85	1
Tractor	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Crane	85.0
Tractor	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
87.5

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Academic Program Architectural Exterior Finishes Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	29	90.0
Residence	50	84.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Tractor	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Tractor	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
84.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Landscape Program Site Preparation Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	42	90.0
Residence	50	88.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Scraper	85	1
Excavator	85	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Scraper	85.0
Excavator	85.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
88.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Landscape Program Construction Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	42	90.0
Residence	50	88.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Concrete Mixer Truck	85	1
Paver	85	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Concrete Mixer Truck	85.0
Paver	85.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
88.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Landscape Program Construction Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	32	90.0
Residence	50	85.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Crane	85	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Crane	85.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
85.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Landscape Program Construction Lmax

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold	29	90.0
Residence	50	84.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Tractor	84	1

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Tractor	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
84.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Attenuation Calculations for Stationary Noise Sources

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

STEP 1: Identify the noise source and enter the reference noise level (dBA and distance).

STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.

STEP 3: Select the distance to the receiver.

Noise Source/ID	Reference Noise Level			Attenuation Characteristics				Attenuated Noise Level at Receptor		
	noise level (dBA)	@	distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor	noise level (dBA)	@	distance (ft)
Helicopter	79.5	@	50	soft	6	5	0.65	79.5	@	50
chipper	99.0	@	3	soft	6	5	0.65	67.7	@	50
blasting (night lmax)	94.0	@	50	soft	6	5	0.65	65.0	@	620
helicopter (night leq)	68.0	@	492.00	soft	6	5	0.65	45.1	@	3600
blasting (day lmax)	94.0	@	50	soft	6	5	0.65	70.1	@	400
helicopter (day leq)	68.0	@	492	soft	6	5	0.65	55.0	@	1520
Blasting (SF Res)	94.0	@	50	soft	6	5	0.65	79.6	@	175
blasting	94.0	@	50	soft	6	5	0.65	86.0	@	100
construction	85.0	@	50	soft	6	5	0.65	93.0	@	25
construction	95.0	@	50	soft	6	5	0.65	103.0	@	25
							0.66			
							0.66			
							0.66			
							0.66			

Notes:
Estimates of attenuated noise levels do not account for reductions from intervening barriers, including walls, trees, vegetation, or structures of any type.

Computation of the attenuated noise level is based on the equation presented on pg. 12-3 and 12-4 of FTA 2006.

Computation of the ground factor is based on the equation presentd in Figure 6-23 on pg. 6-23 of FTA 2006, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

Sources:
Federal Transit Association (FTA). 2006 (May). Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. Washington, D.C. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: September 24, 2010.

Equipment Description	Acoustical Usage Factor (%)	Spec 721.560 Lmax @ 50ft (dBA slow)	Actual Measured Lmax @ 50ft (dBA slow)	No. of Actual Data Samples (count)	Spec 721.560 LmaxCalc	Spec 721.560 Leq	Distance	Actual Measured LmaxCalc	Actual Measured Leq
Auger Drill Rig	20	85	84	36	79.0	72.0	100	78.0	71.0
Backhoe	40	80	78	372	74.0	70.0	100	72.0	68.0
Bar Bender	20	80	na	0	74.0	67.0	100		
Blasting	na	94	na	0	88.0		100		
Boring Jack Power Unit	50	80	83	1	74.0	71.0	100	77.0	74.0
Chain Saw	20	85	84	46	79.0	72.0	100	78.0	71.0
Clam Shovel (dropping)	20	93	87	4	87.0	80.0	100	81.0	74.0
Compactor (ground)	20	80	83	57	74.0	67.0	100	77.0	70.0
Compressor (air)	40	80	78	18	74.0	70.0	100	72.0	68.0
Concrete Batch Plant	15	83	na	0	77.0	68.7	100		
Concrete Mixer Truck	40	85	79	40	79.0	75.0	100	73.0	69.0
Concrete Pump Truck	20	82	81	30	76.0	69.0	100	75.0	68.0
Concrete Saw	20	90	90	55	84.0	77.0	100	84.0	77.0
Crane	16	85	81	405	79.0	71.0	100	75.0	67.0
Dozer	40	85	82	55	79.0	75.0	100	76.0	72.0
Drill Rig Truck	20	84	79	22	78.0	71.0	100	73.0	66.0
Drum Mixer	50	80	80	1	74.0	71.0	100	74.0	71.0
Dump Truck	40	84	76	31	78.0	74.0	100	70.0	66.0
Excavator	40	85	81	170	79.0	75.0	100	75.0	71.0
Flat Bed Truck	40	84	74	4	78.0	74.0	100	68.0	64.0
Front End Loader	40	80	79	96	74.0	70.0	100	73.0	69.0
Generator	50	82	81	19	76.0	73.0	100	75.0	72.0
Generator (<25KVA, VMS signs)	50	70	73	74	64.0	61.0	100	67.0	64.0
Gradall	40	85	83	70	79.0	75.0	100	77.0	73.0
Grader	40	85	na	0	79.0	75.0	100		
Grapple (on Backhoe)	40	85	87	1	79.0	75.0	100	81.0	77.0
Horizontal Boring Hydr. Jack	25	80	82	6	74.0	68.0	100	76.0	70.0
Hydra Break Ram	10	90	na	0	84.0	74.0	100		
Impact Pile Driver	20	95	101	11	89.0	82.0	100	95.0	88.0
Jackhammer	20	85	89	133	79.0	72.0	100	83.0	76.0
Man Lift	20	85	75	23	79.0	72.0	100	69.0	62.0
Mounted Impact Hammer (hoe ram)	20	90	90	212	84.0	77.0	100	84.0	77.0
Pavement Scarafier	20	85	90	2	79.0	72.0	100	84.0	77.0
Paver	50	85	77	9	79.0	76.0	100	71.0	68.0
Pickup Truck	40	55	75	1	49.0	45.0	100	69.0	65.0
Pneumatic Tools	50	85	85	90	79.0	76.0	100	79.0	76.0
Pumps	50	77	81	17	71.0	68.0	100	75.0	72.0
Refrigerator Unit	100	82	73	3	76.0	76.0	100	67.0	67.0
Rivit Buster/chipping gun	20	85	79	19	79.0	72.0	100	73.0	66.0
Rock Drill	20	85	81	3	79.0	72.0	100	75.0	68.0
Roller	20	85	80	16	79.0	72.0	100	74.0	67.0
Sand Blasting (Single Nozzle)	20	85	96	9	79.0	72.0	100	90.0	83.0
Scraper	40	85	84	12	79.0	75.0	100	78.0	74.0
Shears (on backhoe)	40	85	96	5	79.0	75.0	100	90.0	86.0
Slurry Plant	100	78	78	1	72.0	72.0	100	72.0	72.0
Slurry Trenching Machine	50	82	80	75	76.0	73.0	100	74.0	71.0
Soil Mix Drill Rig	50	80	na	0	74.0	71.0	100		
Tractor	40	84	na	0	78.0	74.0	100		
Vacuum Excavator (Vac-truck)	40	85	85	149	79.0	75.0	100	79.0	75.0
Vacuum Street Sweeper	10	80	82	19	74.0	64.0	100	76.0	66.0
Ventilation Fan	100	85	79	13	79.0	79.0	100	73.0	73.0
Vibrating Hopper	50	85	87	1	79.0	76.0	100	81.0	78.0
Vibratory Concrete Mixer	20	80	80	1	74.0	67.0	100	74.0	67.0
Vibratory Pile Driver	20	95	101	44	89.0	82.0	100	95.0	88.0
Warning Horn	5	85	83	12	79.0	66.0	100	77.0	64.0
Welder / Torch	40	73	74	5	67.0	63.0	100	68.0	64.0
chipper		75							

Source:
FHWA Roadway Construction Noise Model, January 2006. Table 9.1
U.S. Department of Transportation
CA/T Construction Spec. 721.560

Distance Propagation Calculations for Stationary Sources of Ground Vibration

KEY: Orange cells are for input.

Grey cells are intermediate calculations performed by the model.

Green cells are data to present in a written analysis (output).

STEP 1: Determine units in which to perform calculation.

— If vibration decibels (VdB), then use Table A and proceed to Steps 2A and 3A.

— If peak particle velocity (PPV), then use Table B and proceed to Steps 2B and 3B.

STEP 2A: Identify the vibration source and enter the reference vibration level (VdB) and distance.

STEP 3A: Select the distance to the receiver.

Table A. Propagation of vibration decibels (VdB) with distance

Noise Source/ID	Reference Noise Level			Attenuated Noise Level at Receptor		
MF to SE	vibration level (VdB)	@	distance (ft)	vibration level (VdB)	@	distance (ft)
Vibratory Roller	94	@	50	100.7	@	30

STEP 2B: Identify the vibration source and enter the reference peak particle velocity (PPV) and distance.

STEP 3B: Select the distance to the receiver.

Table B. Propagation of peak particle velocity (PPV) with distance

Noise Source/ID	Reference Noise Level			Attenuated Noise Level at Receptor		
MF to SE	vibration level (PPV)	@	distance (ft)	vibration level (PPV)	@	distance (ft)
Vibratory Roller	0.210	@	25	0.160	@	30

Notes:

Computation of propagated vibration levels is based on the equations presented on pg. 12-11 of FTA 2006. Estimates of attenuated vibration levels do not account for reductions from intervening underground barriers or other underground structures of any type, or changes in soil type.

Sources:

Federal Transit Association (FTA). 2006 (May). Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. Washington, D.C. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: September 24, 2010.

Attenuation Calculations for Stationary Noise Sources

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

STEP 1: Identify the noise source and enter the reference noise level (dBA and distance).

STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.

STEP 3: Select the distance to the receiver.

Noise Source/ID	Reference Noise Level			Attenuation Characteristics				Attenuated Noise Level at Receptor			
	noise level (dBA)	@	distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor	noise level (dBA)	@	distance (ft)	
HVAC LEQ	75.0	@	3	soft	8	5	0.63	42.8	@	50	
HVAC LEQ	75.0	@	3	soft	8	5	0.63	45.4	@	40	
				hard	8	5	0.00	#DIV/0!	@	50	
				hard	8	5	0.00	#DIV/0!	@	50	
				hard	8	5	0.00	#DIV/0!	@	71	
				soft	8	5	0.63	#DIV/0!	@	80	
				soft	8	5	0.63	#DIV/0!	@	80	
				soft	8	5	0.63	#DIV/0!	@	1000	
							0.66				
							0.66				
							0.66				
							0.66				
							0.66				
							0.66				

Notes:

Estimates of attenuated noise levels do not account for reductions from intervening barriers, including walls, trees, vegetation, or structures of any type.

Computation of the attenuated noise level is based on the equation presented on pg. 176 and 177 of FTA 2018.

Computation of the ground factor is based on the equation presentd in Table 4-26 on pg. 86 of FTA 2018, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

Sources:

Federal Transit Association (FTA). 2018 (September). Transit Noise and Vibration Impact Assessment. Washington, D.C. Available: <http://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf>Accessed: March 5, 2020.

Traffic Noise Spreadsheet Calculator

Project: North Coast Land Holdings Project

Number	Name	Segment Description and Location From	To		Existing Conditions	Existing + Project Conditions	Δ Existing – Existing + Project	Cumulative Conditions	Cumulative +Project Conditions	Δ Cumulative – Cumulative + Project
Summary of Net Changes										
1	Seminary Dr.	south of Ricardo Rd		0	60.8	62.8	2.1	61.6	63.4	1.8
2	E. Strawberry Dr.	north of Herring St.		0	58.3	59.0	0.7	59.1	59.7	0.6
3	Reed Blvd.	north of Storer Dr.		0	50.7	53.3	2.6	51.6	53.8	2.2
4	#REF!	#REF!	#REF!		#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
5	#REF!	#REF!	#REF!		#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
6	#REF!	#REF!	#REF!		#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
7	#REF!	#REF!	#REF!		#REF!	#REF!	#REF!	#REF!	#REF!	#REF!

Traffic Noise Spreadsheet Calculator

Project: North Coast Land Holdings Project

Noise Level Descriptor: CNEL
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

Number	Segment Description and Location: Name	From	To	Input: ADT	Speed (mph)	Distance to Directional Centerline, (feet)[4] Near	Far	Traffic Distribution Characteristics: % Auto	% Medium	% Heavy	% Day	% Eve	% Night	Output: CNEL, (dBA)[5,6,7]	Distance to Contour, (feet)[3] 70 dBA	65 dBA	60 dBA	55 dBA
Existing Conditions																		
1	Seminary Dr.	south of Ricardo Rd		3,500	25	20	20	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	60.8	2	8	24	76
2	E. Strawberry Dr.	north of Herring St.		1,970	25	20	20	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	58.3	1	4	13	43
3	Reed Blvd.	north of Storer Dr.		170	25	10	10	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	50.7			1	4

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: North Coast Land Holdings Project

Noise Level Descriptor: CNEL
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

Segment Description and Location				Input										Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics							Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	CNEL, $(dBA)_{5,6,7}$	70 dBA	65 dBA	60 dBA	55 dBA
Existing + Project Conditions																		
1	Seminary Dr.	south of Ricardo Rd	0	5,630	25	20	20	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	62.8	4	12	39	122
2	E. Strawberry Dr.	north of Herring St.	0	2,320	25	20	20	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	59.0	2	5	16	50
3	Reed Blvd.	north of Storer Dr.	0	310	25	10	10	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	53.3		1	2	7

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: North Coast Land Holdings Project

Noise Level Descriptor: CNEL
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

Number	Segment Description and Location: Name	From	To	ADT	Speed (mph)	Distance to Directional Centerline, (feet)[4] Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	CNEL, (dBA)[5,6,7]	Distance to Contour, (feet)[3] 70 dBA	65 dBA	60 dBA	55 dBA
				Input				Traffic Distribution Characteristics						Output				
	Cumulative Conditions																	
1	Seminary Dr.	south of Ricardo Rd	0	4,250	25	20	20	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	61.6	3	9	29	92
2	E. Strawberry Dr.	north of Herring St.	0	2,360	25	20	20	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	59.1	2	5	16	51
3	Reed Blvd.	north of Storer Dr.	0	210	25	10	10	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	51.6			1	5

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: North Coast Land Holdings Project

Noise Level Descriptor: CNEL
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

Number	Segment Description and Location: Name	From	To	ADT	Speed (mph)	Distance to Directional Centerline, (feet)[4] Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	CNEL, (dBA)[5,6,7]	Distance to Contour, (feet)[3] 70 dBA	65 dBA	60 dBA	55 dBA
				Input				Traffic Distribution Characteristics						Output				
Cumulative +Project Conditions																		
1	Seminary Dr.	south of Ricardo Rd	0	6,380	25	20	20	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	63.4	4	14	44	138
2	E. Strawberry Dr.	north of Herring St.	0	2,710	25	20	20	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	59.7	2	6	19	59
3	Reed Blvd.	north of Storer Dr.	0	350	25	10	10	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	53.8		1	2	8

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Citation #	Citations	
1	Caltrans Technical Noise Supplement. 2009 (November). Table (5-11), Pg 5-60.	Caltrans Technical Noise Supplement. 2013 (September). Table (4-2), Pg 4-17.
2	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-26), Pg 5-60.	Caltrans Technical Noise Supplement. 2013 (September). Equation (4-5), Pg 4-17.
3	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-16), Pg 2-32.	FHWA 2004 TNM Version 2.5
4	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-11), Pg 5-47, 48.	FHWA 2004 TNM Version 2.5
5	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-26), Pg 2-55, 56.	Caltrans Technical Noise Supplement. 2013 (September). Equation (2-23), Pg 2-51, 52.
6	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-27), Pg 2-57.	Caltrans Technical Noise Supplement. 2013 (September). Equation (2-24), Pg 2-53.
7	Caltrans Technical Noise Supplement. 2009 (November). Pg 2-53.	Caltrans Technical Noise Supplement. 2013 (September). Pg 2-57.
8	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-7), Pg 5-45.	FHWA 2004 TNM Version 2.5
9	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-8), Pg 5-45.	FHWA 2004 TNM Version 2.5
10	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-9), Pg 5-45.	FHWA 2004 TNM Version 2.5
11	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-13), Pg 5-49.	FHWA 2004 TNM Version 2.5
12	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-14), Pg 5-49.	FHWA 2004 TNM Version 2.5
13	Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (16), Pg 67	
14	Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (20), Pg 69	
15	Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (18), Pg 69	

References

California Department of Transportation (Caltrans). 2009 (November). Technical Noise Supplement. Available: http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf. Accessed August 17, 2017.

California Department of Transportation (Caltrans). 2013 (September). Technical Noise Supplement. Available: http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013A.pdf. Accessed August 17, 2017.

Federal Highway Administration. 2004. Traffic Noise Model Version 2.5. Available: https://www.fhwa.dot.gov/environment/noise/traffic_noise_model/tnm_v25/. Accessed August 17, 2017.

Appendix Q

Traffic Impact Study

FINAL

North Coast Land Holdings

Transportation Impact Study

Prepared for:
County of Marin

April 2024

SF21-1170

FEHR PEERS

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I. INTRODUCTION

This report addresses the impacts that transportation and land use changes related to the North Coast Land Holding Project would have on vehicle miles traveled (VMT), pedestrian and bicycle facilities, transit service, emergency access, and safety.

Project Study Area

The approximately 127-acre project site is located on the former Golden Gate Baptist Theological Seminary campus property in the community of Strawberry, a census-designated place in unincorporated Marin County. The campus is generally bounded by Seminary Drive, East Strawberry Drive, Ricardo Road, and Richardson Drive.

Regional access to the project site is available from US Highway 101 (US 101) and State Route 131 (SR 131; Tiburon Boulevard). From US 101 off-ramps, ingress to the project site is available through the Redwood Highway Frontage Road to Seminary Drive, and egress returning to the freeway on-ramps is available through Seminary Drive and the Highway Frontage Road to US 101 on-ramp. The project site is accessible from Seminary Drive at Hodges Drive and Gilbert Drive. Other access points to the project site include Mission Drive, East Strawberry Drive, Chapel Drive, and Reed Boulevard.

Project Description

The academic campus is currently tenant-occupied by Olivet University, a private Christian university. As of September 2020, at the time of the NOP, enrollment consisted of approximately 100 students on campus. Most of the students and their families live off-site and commute to the campus. The academic campus is staffed with approximately 24 employees. The existing 3,000-sf daycare facility occupies the southern portion of the Academic Campus Planning Area and is located in the academic building. The daycare serves the families of the academic campus, residents connected with the campus, and other southern Marin County community residents. Current enrollment is approximately 60 children, with approximately 16 total staff. Eight to 12 staff are working onsite on any given day, depending on the age of the children enrolled that particular day. In total, there are 145 existing residential units within the project site. This includes 16 market-rate studios, 54 one-bedroom housing units, 54 two-bedroom housing units, 18 three-bedroom housing units, and 3 single-family residences. There are also 66 dormitory rooms with 7 shared kitchens. The existing housing is occupied by approximately 320 residents,[1] including general public occupants as well as students, faculty, staff, and families affiliated with the academic campus.

The proposed project includes reconfiguration of the existing academic campus to improve accessibility and facilitate construction of new residential uses in the Chapel Hill and Shuck Drive Knoll Planning Areas.

[1] Based on occupancy estimates provided by applicant.

The existing academic building, cafeteria, and library would be retained in their current locations. The administration building would be renovated and would include the addition of a 15,800-sf structure along the northern façade of the existing building. The academic campus would continue to be occupied by a university or college, with a maximum enrollment of 1,000 higher education students.

The proposed project would retain some housing units, replace existing housing, and increase the total number of residences. The applicant proposes to retain 13 existing residential units within the project site and replace remaining residential units with new housing. Proposed new housing would include replacement of 139 residential units and construction of 184 new units consisting of single-family and multi-family residences, as well as a residential care facility (counted as one residential unit but supporting up to 155 residents). A total of 324 residential units would be constructed. A total of 50 residential units would be affordable housing for low-income residents. The affordable units will be inclusionary; dispersed throughout the project site; and comparable in location, size, and exterior design to the remaining units in the overall residential development. For the purposes of this traffic assessment, all the residential units would be available for lease to the broader community since there would be no restricted units.

The proposed project would include a new 267,354-sf residential care facility located in the eastern portion of the project site, within the Dormitory Hill Planning Area, situated northwest of the academic campus and north of the central tiered parking lot. The residential care facility would be designed to serve adults 55 and older with capacity to house up to 170 residents. The housing would consist of up to 100 independent living apartments and 50 assisted living and memory care residences. In addition to the proposed housing, the residential care facility would include public dining, wellness, and lounge areas, as well as support and back-of-house facilities for Certified Medical Technical personnel.

The proposed project includes a new facility that would contain a 3,000-sf daycare and a 17,000-sf fitness center. The daycare and fitness center would be located in a shared facility that would be situated in the central portion of the project site, east of the Seminary Playing Field and west of the three-tiered parking lot. The existing daycare would continue to operate on-site but would be relocated from the academic building into the new space within the proposed daycare and fitness center. Enrollment at the daycare would be limited to the current enrollment of 60 children, with preference given to families in the community. Fitness center membership would be limited to on-site residents, affiliates of the academic campus, and residents of the surrounding community that are within walking distance of the facility.

Buildout of the project would increase the total number of parking spaces from 608 existing spaces to 944 parking spaces. Of the existing residential parking spaces, 51 spaces would be retained, and an additional 652 residential parking spaces would be added for residential housing and the residential care facility, resulting in a total of 703 residential parking spaces on the project site.

Vehicular access to the project site from US 101 would not be altered for the project. The project does not include proposed off-site transportation infrastructure improvements between the project and the US 101 freeway.

The project would be designed to encourage pedestrian and bicycle transportation, including features such as complete streets elements, secure bicycle parking, trails and walkways, and Class III bike routes on interior streets. The existing circulation pattern would be maintained but would be enhanced with pedestrian and bicycle path connections. Off-site improvements include a road and walkway extension at Gilbert Drive, a walkway extension from Herring Drive to Strawberry Drive, and walkway improvements along Mission Drive.

Report Organization

The remainder of this report is divided into the following chapters:

Chapter 2 – Environmental Setting describes the existing transportation network in the proposed project study area, including the surrounding roadway network. Additionally, this section describes the pedestrian facilities, bicycle facilities, public transit network, emergency service access, and safety data.

Chapter 3 – Methodology describes the study analysis scenarios, the 2040 No Project transportation system, VMT forecasts, and standards of significance.

Chapter 4 – Impact Assessment describes the anticipated VMT for the Proposed Project and identifies the extent to which the Proposed Project would impact the transportation system.

II. ENVIRONMENTAL SETTING

Terminology

The following are definitions for terms used in this section.

- **Vehicle miles traveled (VMT)**. A measure of network use or efficiency that accounts for the number of daily vehicle trips generated times the length or distance of those trips. VMT is generally expressed as VMT per capita for a typical weekday. For instance, the 2013 average daily residential VMT per capita for the nine county Bay Area region was 15.3 miles per person per day.
- **Greenhouse gases (GHG)**. Gases in the atmosphere that absorb infrared light, thereby retaining heat in the atmosphere and contributing to a greenhouse effect.

Regulatory Framework

This section summarizes key federal, state, regional, and local regulations and programs related to transportation impacts resulting from the proposed project.

Federal Regulations

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) of 1990 prohibits discrimination against people with disabilities in several areas including employment, transportation, public accommodations, and access to state and local government' programs and services. The ADA applies to both public and private ground transportation providers. Key requirements include providing accessible access routes and paths of travel, accessible transit service and vehicles, accessible transit stops, accessible parking spaces, and accessible transport communication systems.

The U.S. Access Board publishes guidelines under ADA that address access to sidewalks and streets, crosswalks, curb ramps, pedestrian signals, on-street parking, and other components of public right-of-way. The guidelines also review shared use paths, which are designed primarily for use by bicyclists and pedestrians for transportation and recreation purposes.

Public Right-of-Way Accessibility Guidelines (PROWAG)

PROWAG are minimum guidelines issued under Title II of the ADA by the U.S. Access Board in September 2023 for the accessibility of pedestrian facilities in the public right-of-way. These guidelines ensure that facilities used by pedestrians, such as sidewalks and crosswalks, constructed or altered in the public right-of-way are readily accessible to and usable by pedestrians with disabilities.

State Regulations

Senate Bill (SB) 743

With the passage of SB 743 (September 27, 2013) and the subsequent adoption of revised California Environmental Quality Act (CEQA) Guidelines in 2019, level of service (LOS) can no longer be used as a criterion for identifying significant transportation impacts for most projects under CEQA. LOS measures the average amount of delay experienced by vehicle drivers at an intersection during the most congested time of day, while the new CEQA metric (vehicle miles traveled, or VMT) measures the total number of daily miles traveled by vehicles on the roadway network and the impacts on the environment from those miles traveled.

In other words, SB 743 changes the focus of transportation impact analysis in CEQA from measuring impacts to drivers, to measuring the impact of driving. Land use projects with one or more of the following characteristics would have lesser VMT impacts:

- Higher land use densities
- Mix of project uses
- Support of a citywide jobs-housing balance (i.e., provide housing in a job rich area, or vice versa)
- Proximity to the core of a region
- Proximity to high quality transit service
- Located in highly walkable or bikeable areas

This shift in transportation impact criteria is expected to better align transportation impact analysis and mitigation outcomes with the state's goals to reduce GHG emissions, encourage infill development, and improve public health through more active transportation. Specific to SB 743, Section 15064.3(c) of the revised Guidelines states that, "a lead agency may elect to be governed by the provisions of this section immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide." However, CEQA Statute Section 21099(b)(2) states that, "upon certification of the guidelines by the Secretary of the Natural Resources Agency pursuant to this section, automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the Guidelines."

Although the State's Office of Planning and Research provides recommendations for adopting new VMT analysis guidelines, lead agencies have the final say in designing their methodology. Lead agencies must select their preferred method of estimating and forecasting VMT, their preferred significance thresholds for baseline and cumulative conditions, and the mitigation strategies they consider feasible. Lead agencies must prove that their selected analysis methodology aligns with SB 743's goals to promote infill development, reduce GHGs, and reduce VMT.

California Department of Transportation

Caltrans is responsible for operating and maintaining the State Highway System. In the project vicinity, US 101 falls under Caltrans jurisdiction. Caltrans provides administrative support for transportation programming decisions made by the California Transportation Commission for state funding programs. The State Transportation Improvement Program is a multiyear capital improvement program that sets priorities and funds transportation projects envisioned in long-range transportation plans.

Transportation Impact Study Guide (TISG)

The TISG replaced the Guide for the Preparation of Traffic Impact Studies (Caltrans, 2002) for use with local development projects and went into effect July 1, 2020. The TISG was prepared by Caltrans to provide guidance to lead agencies regarding Caltrans review of a land use project or plan's transportation analysis using a VMT metric. This guidance is not binding and is intended to be a reference and informational document.

Interim Local Development Intergovernmental Review (LDIGR) Safety Review Practitioners Guidance

The Interim Safety Review Practitioners Guidance (Caltrans, December 18, 2020) provides guidance to district staff and other Caltrans personnel, lead agencies, developers, and consultants conducting safety reviews for proposed land use projects and plans affecting the State Highway System.

Deputy Directive DD-64-R1 – Complete Streets – Integrating the Transportation System

Caltrans provides for the needs of travelers of all ages and abilities in all programming, planning, design, construction, operations, and maintenance activities and products on the State Highway System. Caltrans views all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California and recognizes bicycles, pedestrians, and transit modes as integral elements of the transportation system.

Caltrans develops multimodal projects in balance with community goals, plans, and values. Implicit in these objectives is addressing the safety and mobility needs of bicyclists, pedestrians, and transit users in all projects, regardless of funding. Bicycle, pedestrian, and transit travel is facilitated by creating "complete streets," beginning early in the system planning process and continuing through project delivery and maintenance, and operations.

Regional Plans and Regulations

Plan Bay Area 2050

Plan Bay Area is the Bay Area's Regional Transportation Plan (RTP)/Sustainable Community Strategy (SCS). *Plan Bay Area* 2050, adopted jointly by the Association of Bay Area Governments (ABAG) and MTC on October 21, 2021, is the current version of the plan. The 2050 *Plan Bay Area* is an update to the 2013 *Plan Bay Area*, with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last several years. This document describes how the San Francisco Bay Area will develop

over the next three decades and the SCS integrates transportation, land use, and housing to meet GHG reduction targets set by California Air Resources Board (CARB).

Bay Area Clean Air Plan

The Bay Area Air Quality Management District (BAAQMD) adopted the 2017 *Clean Air Plan, Spare the Air, Cool the Climate* (Clean Air Plan) on April 19, 2017. The 2017 Clean Air Plan also lays the groundwork for reducing GHG emissions in the Bay Area to meet the state's 2030 GHG reduction target and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following:

- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- A comprehensive multipollutant control strategy has been developed to be implemented in the next three to five years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, toxic air contaminants, and GHG from a full range of emission sources. These control measures cover eight sectors that contribute to GHG emissions including transportation. The control strategy includes the following relevant priorities that relate to the transportation sector:
    - Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
    - Increase efficiency of the energy and transportation systems.
    - Reduce demand for vehicle travel, and high-carbon goods and services.
    - Electrify the transportation and building sectors.

Bay Area Commuter Benefits Plan

Under Air District Regulation 14, Model Source Emissions Reduction Measures, Rule 1, Bay Area Commuter Benefits Program, employers with 50 or more full-time employees within the BAAQMD are required to register and offer commuter benefits to employees. In partnership with the BAAQMD and the MTC, the rule's purpose is to improve air quality, reduce GHG emissions, and decrease the Bay Area's traffic congestion by encouraging employees to use alternative commute modes, such as transit, vanpool, carpool, bicycling, and walking. The benefits program allows employees to choose from one of four commuter benefit options including a pre-tax benefit, employer-provided subsidy, employer-provided transit, and alternative commute benefit.

Local Regulations

Marin Countywide Plan

The Marin Countywide Plan was adopted on November 6, 2007 and last updated in 2015. It sets forth overarching goals and objectives related to transportation and circulation in the context of planned land use within the unincorporated county.

Relevant transportation goals and policy statements from the Transportation and Circulation Element of the General Plan are provided below.

- **TR-1.1: Manage Travel Demand**. Improve the operating efficiency of the transportation system by reducing vehicle travel demand and provide opportunities for other modes of travel. Before funding transportation improvements consider alternatives—such as Transportation Demand Management (TDM)—and prioritize projects that will reduce fossil fuel use and reduce single-occupancy vehicle trips.
- **TR-1.4: Share the Costs for Improvements**. Require new development to pay for or otherwise improve its fair share of the transportation system impacts.
- **TR-1.5: Require Necessary Transportation Improvements**. Require necessary transportation improvements to be in place, or otherwise guaranteed to result in their timely installation, before or concurrent with new developments. In evaluating whether a transportation improvement is necessary, the county shall consider alternatives to the improvement consistent with Policy TR-1.1, Manage Travel Demand, and the extent to which the improvement will offset the traffic impacts generated by proposed and expected development and restore acceptable traffic levels of service.
- **TR-1.8: Reduce Vehicle Miles Traveled (VMT)**. Reduce the rate of increase for total vehicle miles traveled by single-occupant automobile to not exceed the population growth rate.
- **TR-2.1: Improve the Bicycle and Pedestrian Network**. Promote adequate bicycle and pedestrian links, to the extent feasible, throughout the county, including streetscape improvements and standards that are safe and pedestrian and bicycle friendly.
- **TR-2.2: Provide New Bicycle and Pedestrian Facilities**. Where appropriate, require new development to provide trails or roadways and paths for use by bicycles and/or on-street bicycle and pedestrian facilities. In-lieu fees may be accepted if warranted in certain cases.
- **TR-3.1: Encourage and Support the Expansion of Local Bus and Ferry Services**. Encourage expansion and improvement of local bus and ferry services to all areas of the county.

The Countywide Plan contains the following Implementation Program regarding vehicle miles traveled (VMT).

- **TR-1.*s*: VMT Reduction Monitoring and Implementation and Transportation Demand Management Program.** Develop and implement a countywide program for monitoring and reducing VMT consistent with state and regional efforts and based on information from state and regional planning agencies. Identify and require in new developments specific transportation demand management (TDM) strategies for reducing the VMT below levels that would otherwise

occur. Consider the following types of strategies for inclusion in the VMT Reduction Monitoring and Implementation and Transportation Demand Management Program:

- Increased transit.
- All new residential projects consisting of 25 units or more should be located within 1/2 mile of a transit node, shuttle service, or bus route with regularly scheduled, daily service.
- New multi-family projects consisting of 25 units or more should include TDM measures, such as reduced parking for affordable or senior projects, subsidized public transportation passes, or ride-matching programs, based on site-specific review. For market-rate projects, consider TDM programs such as charging parking fees separate from rent.
- Safe, convenient connections should be provided to existing pedestrian and bicycle facilities, and secure bicycle parking should be provided in new non-residential developments.
- TDM should be required for new or expanded projects with 50 employees or more, including programs such as parking cash out, subsidized transit passes, ride-sharing incentives, and bicycle storage facilities.

Marin County Municipal Code

The ordinances of the County of Marin are codified in the Marin County Code. Title 24 of the Marin County Code establishes standards of improvement and construction for the development of land within the unincorporated area of Marin County. Section 24.04.110 sets forth minimum widths and Section 24.04.120 sets forth maximum grades for streets. The minimum paved width for a limited residential road is 20 feet with shoulders or 24 feet with curbs; for a minor residential road it is 28 feet; for a residential road it is 36 feet; and for a collector road it is 40 feet. Maximum grades are 6% for arterial and collector roads, 12% for residential roads, and 18% for minor and limited residential roads.

County of Marin Bicycle and Pedestrian Master Plan

The Marin County Unincorporated Area Bicycle and Pedestrian Plan (Plan) was adopted on February 27, 2018. The update to the Plan was completed as part of a countywide effort to update all local bicycle and pedestrian master plans and focuses on specific recommendations for the unincorporated areas of Marin County. Relevant transportation goal and policy statements from the Plan are listed below.

- **Goal 1 Increased Bicyclists and Pedestrian Access** – Expand bicycle and pedestrian facilities and access in and between neighborhoods, employment centers, shopping areas, schools, and recreational sites, in pursuit of the Marin Countywide Plan goal of having 20% of all trips made by walking or biking by 2020 and add a 2030 goal of 25% bicycling and walking mode share. Provide facilities that are accessible to the greatest number of users.
- **Goal 2 Bicycle Transportation** – Make the bicycle an integral part of daily life in Marin County, particularly for trips of less than five miles, by implementing and maintaining a bikeway network, providing end-of-trip facilities, improving bicycle/transit integration, encouraging bicycle use, and making bicycling safer and more convenient for people of all ages and abilities.

- **Goal 3 Pedestrian Transportation** – Encourage walking as a daily form of transportation in Marin County by completing a pedestrian network that services short trips and transit, improving the quality of the pedestrian environment, improving the health of all citizens, and increasing safety, convenience, and access opportunities for all users.

Relevant proposed bicycle improvements from the Plan in the study area are listed below.

- Class II bike lane on Tiburon Boulevard from US 101 to Trestle Glen Boulevard
- Class II bike lane on the Redwood Highway Frontage Road on the east side of US 101 from Tiburon Boulevard to just south of the signalized intersection of US 101 northbound ramps/De Silva Island Drive
- Class II bike lane on Seminary Drive from the Redwood Highway Frontage Road to Gilbert Drive

Existing Conditions

Street System

The project area is mostly composed of local roads with single travel lanes in each direction, typically with unmarked lanes. A few notable collector roads (e.g., Seminary Drive, E Strawberry Drive) have more formal striping and connect to arterials such as Tiburon Boulevard and eventually Highway 101. Other properties of significant streets observed are summarized in **Table 1** below.

Table 1: Significant Streets in Study Area

Name	Class	Lanes
Highway 101	Freeway	5 NB travel lanes, 4 SB travel lanes
Tiburon Boulevard	Arterial (not county maintained)	2 in each direction
Redwood Highway Frontage Road (east)	Collector	1 travel lane in each direction, on-street parking on one side
Redwood Highway Frontage Road (west)	Collector (not county maintained)	1 travel lane in each direction, on-street parking on one side
Seminary Drive	Collector	1 travel lane in each direction, on-street parking on both sides
E Strawberry Drive	Collector	1 travel lane in each direction, on-street parking on one side
Belvedere Drive	Collector	1 travel lane in each direction, on-street parking on both sides
Reed Boulevard	Local	No marked lanes, on-street parking curb on one side
Ricardo Road	Local	1 travel lane in each direction, on-street parking on both sides
Vista del Sol	Local	No marked lanes
Chapel Drive	Local	No marked lanes
Mission Drive	Local	No marked lanes
Gilbert Drive	Local	No marked lanes
Herring Drive	Local (not county maintained)	No marked lanes
Hodges Drive	Local (not county maintained)	No marked lanes
Storer Drive	Local (not county maintained)	No marked lanes
Shuck Drive	Local (not county maintained)	No marked lanes

Figure 1 also maps these streets of significance within the study area.

Pedestrian Facilities

Most of the study area outside of the immediate project site does not have dedicated walkways for pedestrians in the form of sidewalks. Walkway segments along several primary pedestrian routes serving the project area were verified, including the following roads:

- Seminary Drive
- E Strawberry Drive
- Chapel Drive
- Mission Drive
- Belvedere Drive and Reed Boulevard adjacent to the Strawberry Village Shopping Center
- Knoll Lane
- Redwood Highway Frontage Road (east side)

Many sidewalks were found to have gaps that required pedestrians to temporarily enter vehicle travel lanes to proceed (e.g., Knoll Lane) or were replaced with dirt trails at geographically challenging points (e.g., Seminary Drive). In one example, there is no sidewalk in a segment of E Strawberry Drive between Harbor Cove Way and Island Drive where the roadway is split into two levels due to steep terrain, leaving little space between vehicle travel lanes and the adjacent homes. For other streets, sidewalks exist only on one side of the road for long stretches (e.g., Chapel Drive and Mission Drive).

Sidewalks also narrowed (to less than 4 feet wide) along some roads, such as along segments of E Strawberry Drive and Redwood Highway Frontage Road.

A map of observed pedestrian walkways and trails serving the project area is provided in **Figure 2**.

Bicycle Facilities

Caltrans recognizes four classifications of bicycle facilities.

- Class I – commonly referred to as bike paths, are facilities separated from automobile traffic for the exclusive use of bicyclists.
- Class II – commonly referred to as bike lanes, are dedicated facilities for bicyclists immediately adjacent to automobile traffic.
- Class III – commonly referred to as bike routes, are on-street routes where bicyclists and automobiles share the road.
- Class IV – commonly referred to as cycle tracks or protected bike lanes, are facilities that combine elements of Class I and Class II facilities to offer an exclusive bicycle route immediately adjacent to a roadway similar to a Class II facility, while providing a physical separation from traffic with raised curb, plastic delineators, or parked automobiles.

There are no documented Class I or Class IV bicycle facilities in the project study area, with most roads having no facilities at all. Four roads have noted significant (classed) facilities in county documents and official data sources such as Marin GeoHub as shown in **Table 2** below.

Table 2: Existing Bicycle Facilities

Road	Documented Class
Seminary Drive	Class II
E Strawberry Drive	Class III
Belvedere Drive	Class III
Redwood Highway Frontage Road	Class III

However, signage to suggest the roadways are meant to be shared between automobiles and bicyclists is lacking along most of the claimed Class III routes. The addition of pavement markings (such as sharrows) would increase the visibility and discoverability of these routes.

Along Seminary Drive, there is a segment of the road (roughly between Ricardo Road and Hodges Drive) that is signed as a shared bike route (Class III) in between two Class II segments. Most of the Class III facilities in the community do not have signs or striping designating them as such.

Another Class II segment is located along the north side of Belvedere Drive between Bayview Terrace and Ricardo Road.

Another short segment of a Class II facility is located on the north side of Tiburon Boulevard just east of Highway 101.

These findings are summarized in the map of all bicycling facilities (**Figure 3**).

Transit Facilities

Regional Bus Service by Golden Gate Transit

The Golden Gate Bridge and Highway Transportation District (GGBHTD) operates two fixed-route transit services: Golden Gate Transit (GGT) regional bus service and Golden Gate Ferry (GGF).

Regional bus service began in 1972 and is currently provided on 8 fixed routes as of June 2022 (a greatly reduced post-pandemic schedule from a prior peak of 28 routes). These routes fall into two categories:

- **Regional** routes provide daily service throughout the day and evening between San Francisco, Marin, Sonoma, and Contra Costa Counties. These include Routes 101, 130, 150, and 580.
- **Commute** routes provide service primarily during weekday morning and afternoon peak periods between San Francisco, Marin, and Sonoma Counties. These include Routes 114, 132, 154, and 172.

Golden Gate Transit serves the project area primarily via three routes that make stops at two bus pad stations along the side of Highway 101: the Seminary Drive Bus Pad and Tiburon Wye Bus Pad. The Seminary Drive Bus Pad also doubles as a park-and-ride station with a small, attached no-fee parking lot.

The three routes that stop at these bus pads are:

- Route 130 (Regional): San Rafael – Marin City – Sausalito – San Francisco
- Route 132 (Commute): San Anselmo – San Rafael – San Francisco
- Route 150 (Regional): San Rafael – Marin City – San Francisco

There is another set of pads to the south of the project area (the Pohono Street Park & Ride and the Manzanita Park & Ride) which also acts as stops for Route 132, 150, and Route 114—the last of which traverses through Mill Valley with a terminus at E Blithedale Avenue and Tower Drive / Kipling Drive, near the Tiburon Wye Bus Pad.

Local Bus Service by Marin Transit

Marin Transit provides a total of 19 fixed routes as of July 2022, including nine local routes, six community shuttle routes, two rural fixed routes (a.k.a. West Marin Stagecoach), and one Muir Woods shuttle service within Marin County. Marin Transit also offers Connect, an on-demand service available approximately 2.5 miles around each SMART station in Marin County. Marin Transit bus and shuttle services carried over 3.2 million passenger trips per year before 2020.

Marin Transit owns 113 transit vehicles including 13 community shuttles, 6 stagecoach vehicles, 35 paratransit vehicles, 4 Connect vans, 15 narrow-bodied rural buses, 28 hybrid diesel-electric buses, 10 articulated buses, and 2 battery electric buses as of 2020.

Marin Transit sells 1-day and 31-day passes, each good for unlimited rides during the valid period. The 31-day pass costs $40 for adults and youth and $20 for seniors and persons with disabilities. A 1-day pass,

purchasable on a bus, costs $5 for adults and $2.50 for seniors, youth, and persons with disabilities. A one-way cash fare costs $2 for adults and $1 for seniors, youth, and persons with disabilities. Transit is free for children five and under (up to two per adult).

Marin Transit also offers an annual Youth Pass through Marin County schools such as Strawberry Point School in the study area. With the pass, registered Marin County students and youth ages 18 and under ride on local routes in Marin without paying any additional fare. The Youth Pass costs $325 per year.

Local transit routes that serve the study area include the following:

- Route 17 (Local): San Rafael – Strawberry – Mill Valley – Marin City – Sausalito
- Route 22 (Local): San Rafael – San Anselmo – Ross – College of Marin – Larkspur – Corte Madera – Strawberry – Marin City
- Route 36 (Local): Canal – San Rafael – Hwy 101 – Marin City
- Route 71 (Local): Sausalito – Marin City – San Rafael – Ignacio – Novato
- Route 219 (Community Shuttle): Tiburon – Strawberry – Seminary

Routes 17, 22, 36, and 219 make notable stops around the Strawberry Village Shopping Center and also have stops that are walkable to the Seminary Drive and Tiburon Wye bus pads where riders can transfer to Route 71 or Golden Gate Transit regional routes.

The West Marin Stagecoach Route 61 also makes a stop at the Pohono Street Park & Ride and the Manzanita Park & Ride to the south of the project area.

Both Marin Transit and Golden Gate Transit routes and stops are summarized in **Figure 4**.

Mobility Services and Programs

Shared Mobility Options

According to the Shared-Use Mobility Center, shared mobility is defined as transportation services and resources that are shared among users, either concurrently or one after another. The services are grouped into five different shared mobility typologies:

- Bike-sharing/Scooter-sharing
- Carsharing
- Ride-sharing/Ride-hailing
- Public Transit
- Microtransit (e.g., shared scooters)/Shuttles

Bike-sharing, carsharing, scooter-sharing, or microtransit services are not currently provided in the study area. They are, however, provided in many other Bay Area cities.

Traditional ride-sharing includes carpooling, vanpooling, and real-time matching of drivers and passengers through mobile apps in which the passenger pays a share of the trip cost. Ride-hailing providers such as Uber and Lyft use online platforms to connect passengers with drivers who use personal, non-commercial, vehicles. UberPool and Lyft Line are ride-sharing options that allow drivers to carry multiple passengers who split the cost of a trip. Uber has also partnered with the Transportation Authority of Marin as part of the Connect2Transit program which includes the Marin Transit Connect on-demand service.

Taxis and limos are regulated for-hire vehicles. Numerous companies provide these services in the study area.

Emergency Vehicle Access

Southern Marin Fire Protection District (SMFD) Station 9 Strawberry is the fire station that serves the project site and the surrounding Strawberry community. The station is located at 308 Reed Boulevard, roughly in the center of the Strawberry community and a few hundred feet north of the intersection of Reed Boulevard/Storer Drive and the northern boundary of the project site. In addition to the Strawberry community, Station 9 Strawberry serves from Mill Valley to Tiburon to the Golden Gate Bridge. The station serves portions of the Golden Gate National Recreational Area (GGNRA) and US 101 north to the Paradise Drive interchange in Corte Madera.

Based on consultation with SMFD Chiefs,[2] the following are primary egress routes from the station based on the call destination.

- Project Site: south on Reed Boulevard.
- Redwood Highway Frontage Road/US 101 South/US 101 North: north on Reed Boulevard, west on Meda Lane, and west on Ricardo Road/Seminary Drive to Redwood Highway Frontage Road.
- Tiburon: north of Reed Boulevard, east on Ricardo Road/Ricardo Lane, and north on E Strawberry Drive to Tiburon Boulevard (SR 131).
- Seminary Drive: south on Reed Boulevard, west on Storer Drive, south on Shuck Drive, and west on Hodges Drive.
- South Strawberry Area: south on Reed Boulevard, east on Storer Drive, and east on Herring Drive to E Strawberry Drive.

[2] July 21, 2022, calls with Chief Ted Petersen and Adam Vollmer.

Transportation Safety

The 2018 Marin Travel Safety Plan was a collaborative effort between unincorporated Marin County and all 11 incorporated cities and towns. The purpose was to provide a systemic safety analysis for motorists, motorcyclists, bicyclists, and pedestrians on non-state arterial and collector roadways. The Plan was funded through a Systemic Safety Program grant provided by Caltrans. The intent was to provide a proactive collision analysis, identify high risk locations and collision patterns, develop a list of systemic low-cost and longer-term countermeasures, and help secure funding to address key safety issues.

During the five-year period in which crashes were evaluated, 22.6% of all crashes in the county occurred in Unincorporated Marin County, lower than the county's 26% share of the total county population. Notable collision profiles in Unincorporated Marin County include high rates of bicycle collisions, pedestrian collisions involving senior over the age of 65, speed related collisions, motorcycle collisions, and collisions with vehicles hitting fixed objects. According to the California Office of Traffic Safety, in 2019 Marin County ranked among the top 10 California counties for collisions where victims were killed and/or injured involving pedestrians, pedestrians 65 or older, and bicyclists.

The 2018 Marin Travel Safety Plan identified safety countermeasures for 12 corridors and 13 intersections in Unincorporated Marin County. This includes a corridor improvement to the Redwood Highway Frontage Road from the US 101 ramp to De Silva Island Road. The corridor improvements included improved signal timing and detection, enhanced pedestrian crossing improvements, guardrail, and bike lanes (green pain through the intersection to delineate conflict zones). Intersection improvements were identified at the East Blithedale Avenue/Tower Drive/Kipling Drive intersection including improved signal timing and detection and enhanced pedestrian crossing improvements. Subsequent to completion of the Plan, Marin County received $2.8 million in Highway Safety Improvement Program (HSIP) grant funds from Caltrans to implement safety countermeasures identified in the plan at 51 signalized intersections in unincorporated Marin County and within 11 incorporated cities.

Collision History

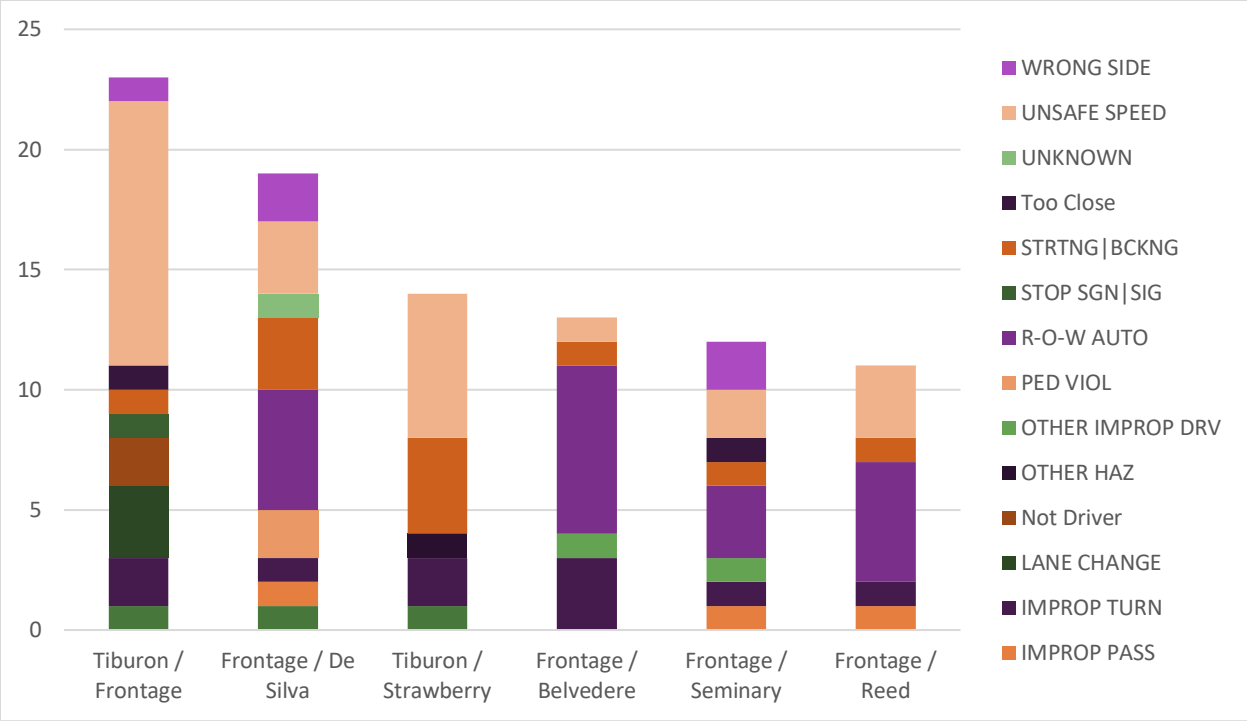
In the five years between 2015-2019, there were 168 collisions identified in the project study area from California SWITRS data. 67% of collisions (113) only involved property damage primarily to vehicles while 33% (55) resulted in injury to vehicle occupants (45), pedestrians (3), or bicyclists (7).

A review of crash data from 2015-2019 reveals that certain intersections in the study area are more prone to collisions and injuries than others. **Table 3** below provides details for all intersections with more than two collisions over that five-year period.

Table 3: Study Area Collision Data

Intersection	Collisions	w/Injury	Primary Collision Factor
Tiburon Blvd (SR-131) / Redwood Hwy Frontage Rd	23	7 (30%)	11 Unsafe Speed (48%)
Redwood Hwy Frontage Rd / De Silva Island	19	8 (42%)	5 R-O-W Auto (26%)
Tiburon Blvd (SR-131) / E Strawberry Dr	14	8 (57%)	6 Unsafe Speed (43%)
Redwood Hwy Frontage Rd / Belvedere Dr	13	1 (8%)	7 R-O-W Auto (54%)
Redwood Hwy Frontage Rd / Seminary Dr	12	2 (17%)	3 R-O-W Auto (25%)
Redwood Hwy Frontage Rd / Reed Blvd	11	3 (27%)	5 R-O-W Auto (27%)
E Strawberry Dr / Belvedere Dr	6	3 (50%)	2 Improper Turn, R-O-W Auto (33%)
Tiburon Blvd (SR-131) / Knoll Ln	6	1 (17%)	3 Unsafe Speed (50%)
Reed Blvd / Belvedere Dr	5	3 (60%)	2 Improper Pass (40%)
E Strawberry Dr / Strawberry Dr	5	2 (40%)	Various
E Strawberry Dr / Harbor Cove	4	1 (25%)	2 Improper Turn (50%)
Redwood Hwy Frontage Rd / US-101	4	1 (25%)	Various
E Strawberry Dr / Cassidy Ln	3	1 (33%)	Various
Reed Blvd / Knoll Ln	3	1 (33%)	2 Improper Turn (67%)
Tiburon Blvd (SR-131) / US-101	3	2 (67%)	2 Unsafe Speed (67%)
Ricardo Rd / Richardson Dr	3	0 (0%)	Various
Seminary Dr / Hodges Dr	3	0 (0%)	Various

Across all crashes, the most prominent collision factor was Unsafe Speed (41 out of the 168 total), followed by R-O-W Auto (28) and Improper Turn (27). A total of 17 collisions (10.1%) involved drivers under the influence of drugs or alcohol. The chart below shows the distribution of collision factors for the most crash-prone intersections.



Other relevant statistics from the collision data include the following:

- 120/168 (71%) of collisions occurred during the daytime
- 41/168 (24%) of collisions involved a parked vehicle or other fixed object
    - Two collisions involved an animal
- 54 (32%) collisions were rear-ends, 41 (24%) were sideswipes, and 30 (18%) were broadside collisions
    - Six collisions were head-on and two involved an overturned vehicle

Figure 1: Existing Street System

Figure 2: Pedestrian Facilities

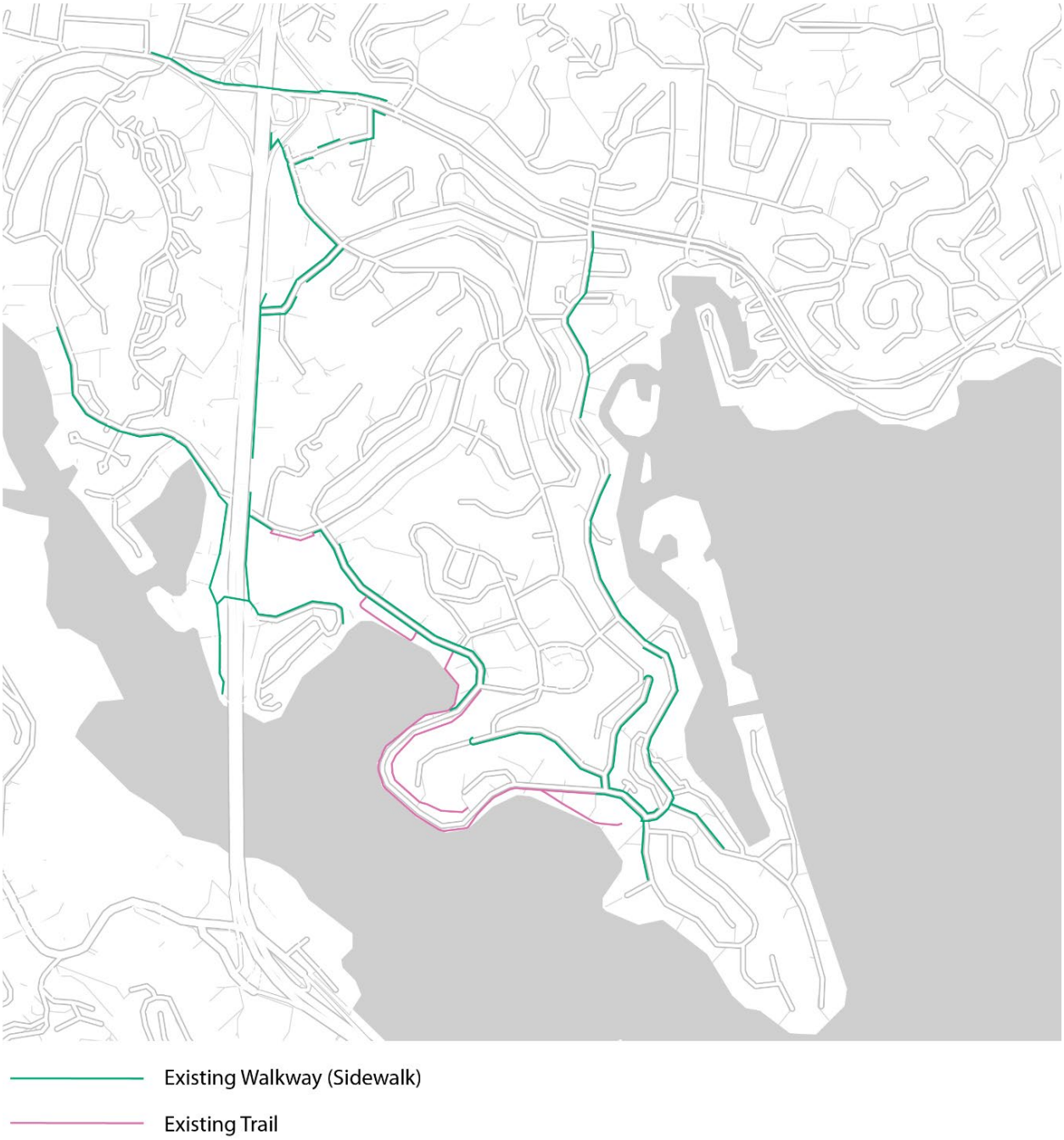


Figure 3: Bicycle Facilities

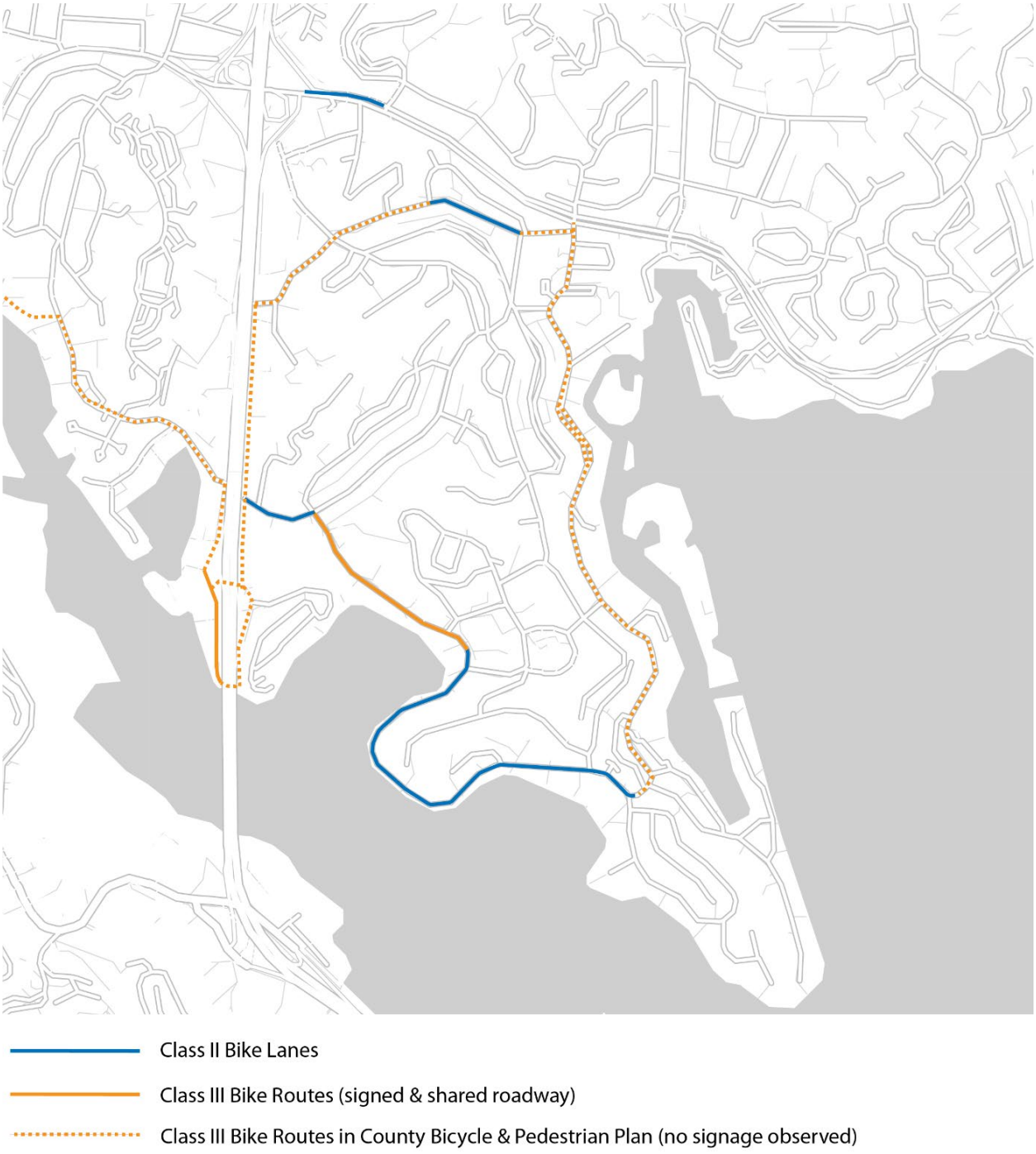
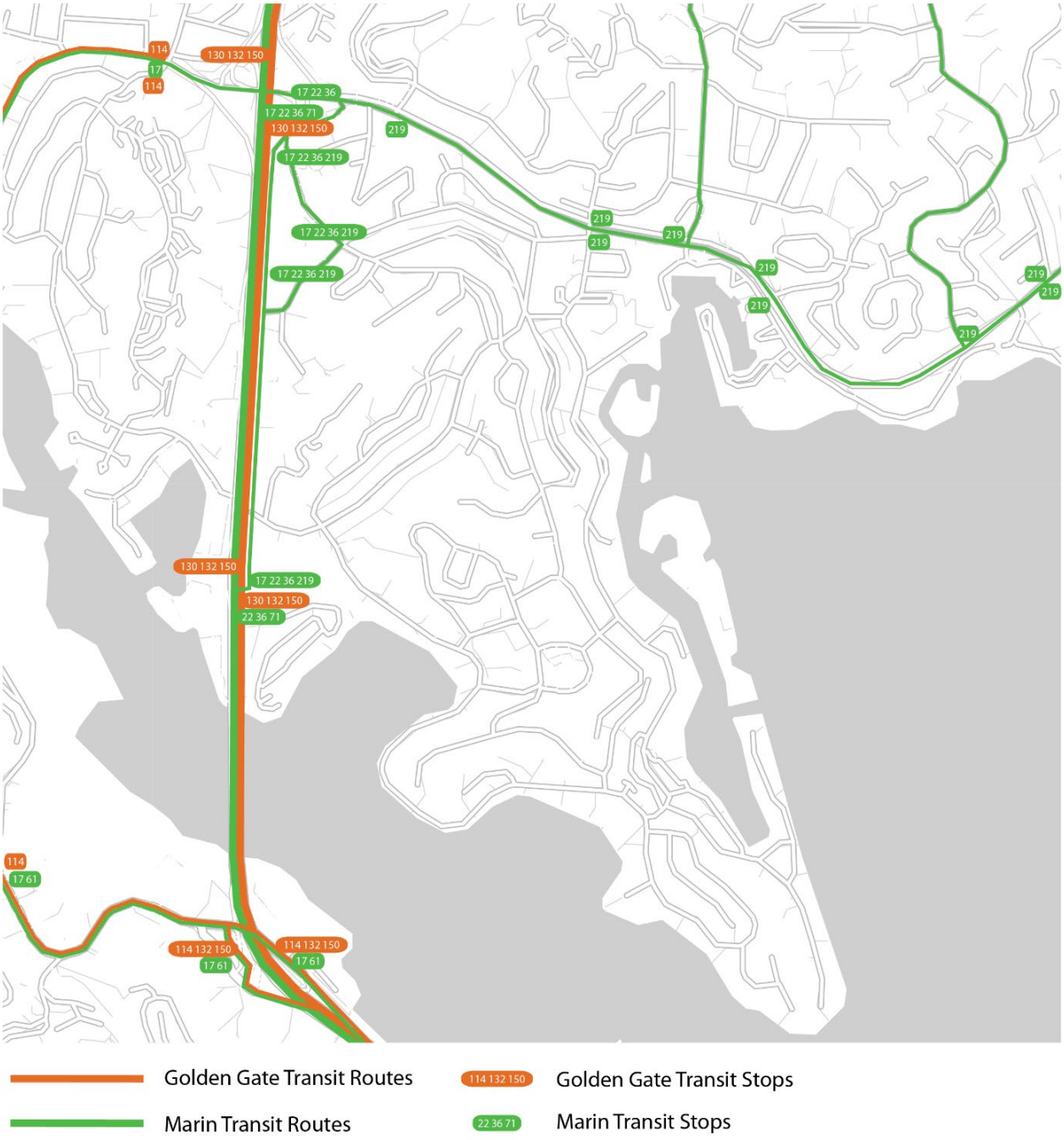


Figure 4: Existing Transit Facilities and Network



III. METHODOLOGY

Analysis Scenarios

The transportation modeling and analysis was conducted for the following scenarios.

- Existing Conditions – existing setting based on traffic counts collected in December 2021. This scenario serves as the baseline or point of comparison for environmental impact significance determinations related to the proposed project.
- 2040 No Project – conditions with 2040 land use forecasts and transportation infrastructure assumptions for Unincorporated Marin County based on Plan Bay Area 2040 as developed by MTC.
- 2040 Plus Project – conditions with 2040 land use forecasts and transportation infrastructure assumptions for the proposed project.

2040 No Project Transportation System

The following roadway improvements or transportation programs, as provided by Transportation Authority of Marin (TAM) staff, are incorporated in the 2040 No Project scenario.

- Minor Highway Improvements – Highway Interchange Improvements, Bicycle/Pedestrian Crossings, and Auxiliary Lanes
- Minor Roadway Projects – Highway Safety Improvement Program (HSIP) Projects and Sea Level Rise Improvements
- Minor Transit Improvements – Fleet expansion/facilities, Access to Transit, and Transit Service Expansion
- New Bicycle & Pedestrian Facilities including North South Greenway Projects, SMART Multi Use Path, Cross Marin Bikeway, Approaches to Richmond San Rafael Bridge, Safe Pathways Projects, Small Safety Projects, and Safe Route to Transit Projects
- Management Systems – Ramp Metering Phase 1 & 2, and Innovative Technology
- Safety and Security – Safe Routes to School Program and Crossing Guard Program
- Travel Demand Management – TDM Program, Alternative Fuels Program, and Traveler Information Programs
- Multimodal Streetscape Improvements – Local Road Improvements

Project Trip Generation

The purpose of the vehicular trip generation estimate is to approximate the number of new vehicle trips entering and exiting the site for various purposes (e.g., residential, employee, student, and visitor trips) during a selected time period. The proposed Project will contain a mix of land uses including a new

daycare and fitness center, new residential care facility, upgrades to existing housing and construction of new housing, and renovation of academic campus buildings. **Table 4** presents the net buildout development program as of June 14, 2022.

Table 4: Project Land Use Program

Land Use	Units	Total
Day Care Center	Square Feet / Children	3,000 / 60
Fitness Center	Square Feet	17,000
Residential Care Facility	Square Feet / Residents	267,354 / 170
Assisted Living and Memory Care Residences	Units / Residents	50 / 40
Independent Living Residences	Units / Residents	100 / 130
Academic Campus	Students / Faculty & Staff	1,000 / 240
Residential – Single Family Units	Dwelling Units (DU)	11
Residential – Multi-Family Units (market)	Dwelling Units (DU)	275
Residential – Multi-Family Units (affordable)	Dwelling Units (DU)	50

Source: Ascent Environmental, 2022.

Trip Generation Methodology

The project site is currently occupied by academic and residential uses. The trip generation assessment identifies the total number of external vehicle trips generated by the project site at build-out as well as the net number of trips generated by subtracting the number of trips generated by project build-out from trips generated by existing uses. The trip generation assessment also considers internal trip making between the academic uses, residential uses, day care, and fitness center. Because the project description does not include dedicated housing for the academic campus, the build-out trip generation assessment is based on traditional travel relationships between the adjacent uses.

Current accepted methodologies, such as the Institute of Transportation Engineers' (ITE) *Trip Generation* methodology, are primarily based on data collected at suburban, single-use, freestanding sites. These defining characteristics limit their applicability to mixed-use or multi-use development projects, such as this project, which, given its land use mix, design features, and setting, would include characteristics that influence travel behavior differently from typical single-use suburban developments. Thus, traditional data and methodologies, such as ITE, would not accurately estimate the project vehicle trip generation.

In response to the limitations in the ITE methodology, and to provide a straightforward and empirically validated method of estimating vehicle trip generation at mixed-use developments, the US Environmental Protection Agency (EPA) sponsored a national study of trip generation characteristics of multi-use sites. Travel survey data was gathered from 239 mixed-use developments (MXDs) in six major metropolitan regions and correlated with characteristics of the sites and their surroundings. The findings indicate that the amount of external traffic generated is affected by a wide variety of factors including the mix of employment and residents, the overall size and density of the development, the internal connectivity for walking or

driving among land uses, the availability of transit service, and the surrounding trip destinations within the immediate area outside the project site.

These characteristics were related to trip behavior observed at the study development sites using statistical techniques. These statistical relationships produced equations, known as the EPA MXD model, which allow predicting external vehicle trip reduction as a function of the MXD characteristics. Applying external vehicle trip reduction percentage to "raw trips," as predicted by ITE, produces an estimate for the number of vehicle trips traveling into or out of the site.

The MXD model has been approved for use by the EPA.[3] It has also been peer-reviewed in the ASCE Journal of Urban Planning and Development,[4] peer-reviewed in a 2012 TRB paper evaluating various smart growth trip generation methodologies,[5] recommended by SANDAG for use on mixed-use smart growth developments,[6] promoted in an American Planning Association (APA) Planning Advisory Service (PAS)[7] which recommended it for evaluating traffic generation of mixed-use and other forms of smart growth. It has also been used successfully in multiple certified EIRs in California.

Internal Capture

Internal trips are responsible for an 8% reduction of daily external vehicle trips, a 16% reduction of AM peak hour external vehicle trips, and a 17% reduction of PM peak hour external vehicle trips. Some examples of an internal trip would be a parent living in one of the project dwelling units dropping off a student at the day care center, a person living in one of the project dwelling units working at or attending classes at the campus, or a student exercising at the fitness center. Some of these trips would potentially still occur by vehicle, though they would remain internal to the larger project site.

In total, the MXD trip generation methodology is responsible for a 12% reduction of daily external vehicle trips, a 20% reduction of AM peak hour external vehicle trips, and a 20% reduction of PM peak hour external vehicle trips when compared to the unadjusted ITE methodology.

Input values were collected for the MXD model for use in application on the project trip generation. The MXD model uses internal project information such as land use mix, project area, intersection density, and transit stop placement as well as local and regional demographic data such as average household size and

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[3] Trip Generation Tool for Mixed-Use Developments (2012). www.epa.gov/dced/mxd_tripgeneration.html

[4] "Traffic Generated by Mixed-Use Developments—Six-Region Study Using Consistent Built Environmental Measures." Journal of Urban Planning and Development, 137(3), 248–261.

[5] Shafizadeh, Kevan et al. "Evaluation of the Operation and Accuracy of Available Smart Growth Trip Generation Methodologies for Use in California." Presented at 91st Annual Meeting of the Transportation Research Board, Washington, D.C., 2012.

[6] SANDAG Smart Growth Trip Generation and Parking Study. http://www.sandag.org/index.asp?projectid=378&fuseaction=projects.detail

[7] Walters, Jerry et al. "Getting Trip Generation Right – Eliminating the Bias Against Mixed Use Development." American Planning Association. May 2013.

vehicle ownership, employment within one mile of the site, and employment within a 30-minute transit trip.

Project Trip Generation

Input values were collected for the MXD model for use in application on the project trip generation. The MXD model uses internal project information such as land use mix, project area, intersection density, and transit stop placement as well as local and regional demographic data such as average household size and vehicle ownership, employment within one mile of the site, and employment within a 30-minute transit trip.

In addition, the MXD model was used to estimate the total number of trips generated by the existing land uses, which include a day care center, 145 residential dwelling units, and a 66-bed dormitory, and the existing academic campus. The total net trip generation for the project consists of the MXD estimated project trips minus the MXD estimated existing trips.

Table 5 summarizes the estimated trip generation for the project using the MXD methodology for a typical weekday. As shown in Table 5, the project is estimated to generate 2,608 net new daily vehicle trips, with 179 net new trips during the AM peak hour, and 227 net new trips during the PM peak hour.

Table 5: Project Trip Generation

Land Use	Daily Trips	Weekday Am Peak Hour			Weekday Pm Peak Hour		
		In	Out	Total	In	Out	Total
Build-out Trips Generated by Project Site							
Day Care Center	245	25	22	47	22	25	47
Fitness Center	490	21	11	32	35	40	75
Residential Care Facility							
Assisted Living/Memory Care Residences	130	5	4	9	5	7	12
Independent Living Residences	247	10	5	15	7	12	19
Academic Campus	1,560	117	33	150	48	102	150
Residential – Single Family Units	104	2	6	8	6	4	10
Residential – Multi-Family Units (market)	1,854	26	84	110	88	52	140
Residential – Multi-Family Units (affordable)	240	5	13	18	14	9	23
Total Gross Project Trips (Build-out)	**4,870**	**211**	**178**	**389**	**225**	**251**	**476**
Build-out Reductions							
Internal Capture	(396)	(34)	(28)	(62)	(38)	(42)	(80)
External (Walk, Bike, and Transit)	(198)	(8)	(7)	(15)	(6)	(8)	(14)
Build-out External Trip Reduction	**(594)**	**(42)**	**(35)**	**(77)**	**(44)**	**(50)**	**(94)**
Existing Trips Generated by Project Site							
Day Care Center	245	25	22	47	22	25	47
Academic Campus	156	12	3	15	5	10	15
Residential – Single Family Units	28	1	1	2	2	1	3
Residential – Multi-Family Units	986	16	51	67	52	30	82
Residential – Student Dormitory	408	7	12	19	14	14	27
Total Gross Project Trips (Existing)	**1,823**	**61**	**89**	**150**	**95**	**80**	**174**
Existing Reductions							
Internal Capture	(100)	(5)	(7)	(12)	(8)	(6)	(14)
External (Walk, Bike, and Transit)	(55)	(2)	(3)	(5)	(3)	(2)	(5)
Existing External Trip Reduction	**(155)**	**(7)**	**(10)**	**(17)**	**(11)**	**(8)**	**(19)**
EXTERNAL PROJECT TRIPS	**4,276**	**169**	**143**	**312**	**181**	**201**	**382**
NET NEW PROJECT TRIPS	**2,608**	**115**	**64**	**179**	**97**	**129**	**227**

Source: Fehr & Peers, Institute of Transportation Engineers Trip Generation (11th Edition), US EPA MXD Model.
ITE Codes: 565-Day Care, 495-Recreational Community Center, 254-Assisted Living, 255-Independent Living, 550-Academic Campus, 210-Single Family residential, 220-Multi-family residential, 223-Affordable residential.

Project Parking Generation

The required parking supply for development projects in Marin County is specified in Section 24.04.340 of the Marin County Municipal Code. The municipal code specifies parking requirements for the residential components of the project but does not provide parking requirements for a college campus. According to the municipal code, the project is required to provide a total of 539 parking spaces for the proposed residential uses, which would be accommodated by the proposal to provide 703 parking spaces. To supplement the above information on required parking supply per County municipal code, because the municipal codes does not include parking requirements for a college campus, the following is an assessment of estimated parking demand levels for the proposed project uses.

The purpose of the parking generation estimate is to approximate the peak parking demand levels for various purposes (e.g., residential, employee, student, and visitor trips) for a typical weekday. Parking demand levels are estimated based on peak parking rates identified in ITE *Parking Generation* manuals that are based on surveys conducted for individual land use categories throughout the US. This assessment does not assume shared parking of facilities between the residential and academic campus areas. **Table 6** summarizes the estimated build-out parking demand for the project for a typical weekday.

Table 6: Project Peak Weekday Parking Demand

Land Use	ITE Land Use Code	ITE Edition	Units	Total	Parking Rate	Parking Demand
Day Care Center	565	5th	KSF	3	2.45	7
Fitness Center	492	5th	KSF	17	4.73	80
Assisted Living	254	5th	UNITS	50	0.4	20
Independent Living	253	5th	UNITS	100	0.3	30
Academic Campus	550	5th	TOTAL POP	1240	0.28	347
Residential – Single Family	210	4th	UNITS	11	1.83	20
Residential – Multi-Family	221	5th	UNITS	275	1.31	360
Residential – Affordable	223	5th	UNITS	50	0.99	50
					TOTAL	**915**

Source: ITE Parking Generation (5th and 4th Editions); Fehr & Peers.
Notes: KSF=1,000 square feet; TOTAL POP=campus students, faculty, and staff.

The parking demand estimate of 915 spaces represents the number of parked vehicles during a weekday peak period. The desired parking supply is based on providing additional parking such that occupancy levels do not exceed a threshold such as 90%. Application of a 90% threshold would result in a total parking supply of about 1,016 parking spaces at build-out. This includes about 400 parking spaces for the 275 multi-family residential units, 385 parking spaces for the academic campus, 90 parking spaces for the fitness center, and 55 parking spaces for the affordable multi-family residential units.

VMT Forecasts

This section describes the methodology for VMT forecasts developed for this transportation assessment and as supporting data for other assessments in the CEQA document including the GHG assessment. The new CEQA Guidelines Section 15064.3(b)(4) establishes that the lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence.

The VMT forecasts generated for this CEQA assessment were produced using the Transportation Authority of Marin Demand Model (TAMDM). For this CEQA assessment, the 2015 base year for TAMDM was updated and validated for a new 2019 base year for the City of San Rafael General Plan Update. A key reason for applying the updated 2019 base year is that it includes the SMART rail system that was not in place in 2015. This analysis includes a 2040 No Project scenario that is based on the TAMDM horizon year and reflects land use changes and transportation improvements consistent with the San Rafael General Plan 2040 adopted in 2021. The 2019 base year model developed for the San Rafael General Plan Update was validated based on model confidence thresholds defined in the California Transportation Commission 2017 RTP guidelines.

For this project, the network and land use inputs for the study area for the model's 2019 base year were reviewed and enhanced to provide the level of detail necessary for the study. A model validation was performed for the study sub-area and model validation measures in the RTP guidelines were met for the 2019 base year for 73 study road segments in the study area as shown in **Table 7** below.

Table 7: Project Study Area Model Validation Results (2017 California RTP Guidelines)

Validation Measure	AM Peak Period (4-Hour)	PM Peak Period (4-Hour)	Daily	Threshold
Volume-to-Count Ratio (Sum of all locations)[1] =	0.96	1.07	0.98	None specified[2]
Percent of Links within Caltrans Deviation Allowance[1] =	79.5%	75.3%	79.5%	At Least 75%
Percent Root Mean Square Error (RMSE)[1] =	30.5%	23.0%	19.3%	Below 40%
Correlation Coefficient[1] =	0.98	0.99	0.99	At Least 0.88
Number of Links/Validation Locations =	73	73	73	

Source: Fehr & Peers.
Notes:
1. Static Validation Criteria and Thresholds, 2017 California Regional Transportation Plan Guidelines, California Transportation Commission.
2. Although no specific threshold is specified, a threshold of "within 10%" of the sum of all locations was applied.

The VMT estimates were produced using the updated 2019 TAMDM model for all 1,400 analysis zones within Marin County as well as for the entire Bay Area.

Standards of Significance

The general standard applied for determining transportation impacts is whether a project conflicts with or is inconsistent with CEQA Guidelines Section 15064.3(b) which provides the criteria for analyzing transportation impacts. For land use projects, this involves assessing whether VMT exceeds an applicable threshold of significance.

Vehicle Miles Traveled (VMT)

CEQA Guidelines section 15064.3, subdivision (b) identifies criteria for analyzing transportation impacts. For land use projects, the section indicates that vehicle miles traveled (VMT) exceeding an applicable threshold of significance may indicate a significant impact. The section indicates that projects that decrease VMT in a project area compared to existing conditions should be presumed to have a less than significant transportation impact. The section also indicates that projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should generally be presumed to cause a less than significant transportation impact.

CEQA section 15064.3 (b) also indicates that a lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence.

Marin County has not adopted CEQA thresholds of significance to determine the significance of transportation impacts of projects for VMT. As such, the VMT thresholds applied for this project are ad hoc VMT thresholds developed in consultation with Marin County staff based on goals and policies in the Marin Countywide Plan and informed by state and regional efforts.

The Marin Countywide Plan includes the following relevant goals and policy statements for VMT in the Transportation and Circulation Element.

- **TR-1.8: Reduce Vehicle Miles Traveled (VMT)**. Reduce the rate of increase for total vehicle miles traveled by single-occupant automobile to not exceed the population growth rate.

The Countywide Plan contains the following Implementation Program regarding vehicle miles traveled (VMT).

- **TR-1.s: VMT Reduction Monitoring and Implementation and Transportation Demand Management Program.** Develop and implement a countywide program for monitoring and reducing VMT consistent with state and regional efforts and based on information from state and regional planning agencies. Identify and require in new developments specific transportation demand management (TDM) strategies for reducing the VMT below levels that would otherwise occur. Consider the following types of strategies for inclusion in the VMT Reduction Monitoring and Implementation and Transportation Demand Management Program:

- Increased transit.
- All new residential projects consisting of 25 units or more should be located within 1/2 mile of a transit node, shuttle service, or bus route with regularly scheduled, daily service.
- New multi-family projects consisting of 25 units or more should include TDM measures, such as reduced parking for affordable or senior projects, subsidized public transportation passes, or ride-matching programs, based on site-specific review. For market-rate projects, consider TDM programs such as charging parking fees separate from rent.
- Safe, convenient connections should be provided to existing pedestrian and bicycle facilities, and secure bicycle parking should be provided in new non-residential developments.
- TDM should be required for new or expanded projects with 50 employees or more, including programs such as parking cash out, subsidized transit passes, ride-sharing incentives, and bicycle storage facilities.

The policies and programs identified in the Countywide Plan call for reducing the rate of VMT increase and implementation of a countywide program for monitoring and reducing VMT consistent with state and regional efforts and based on information from state and regional planning agencies. To help lead agencies with implementation of updated CEQA guidelines related to analyzing transportation impacts, the Governor's Office of Planning and Research (OPR) provides advice and recommendations in a *Technical Advisory*.[8] The 2018 OPR Technical Advisory indicates that "achieving a 15 percent lower per capita (residential) or per employee (office) VMT than existing development is both generally achievable and is supported by evidence that connects this level of reduction to the State's emissions goals". The 15 percent threshold was originally tied to the 2017 Scoping Plan prepared by the California Air Resources Board (ARB). That plan was updated by ARB in 2022 and now contains a 30 percent below 2019 level recommendation for statewide VMT to achieve the state's goal of carbon neutrality by 2045. The ad hoc VMT threshold applied for this assessment is 30 percent below 2019 VMT levels and evaluates the project's change in vehicle miles traveled on a per capita basis.

For mixed-use projects, the 2018 OPR Technical Advisory advises that lead agencies can evaluate each component of a mixed-use project independently and apply the significance threshold for each project type included (e.g., residential and retail). Because the project description does not include a permanent dedication of project housing for campus students or employees, VMT impacts for this project are determined separately for the residential uses and the academic campus uses.

For the assessment of residential uses, VMT impacts would be significant if the project exceeds the following threshold:

- Home-based VMT per resident exceeds 30% below average 2019 rate for full nine-county Bay Area.

[8] Governor's Office of Planning and Research, *Technical Advisory on Evaluating Transportation Impacts in CEQA*, 2018.

Neither the Marin Countywide Plan nor the 2018 OPR Technical Advisory provides guidance on developing a VMT significance threshold for academic campuses. Development of a VMT threshold for the academic campus use considered the intent of the Countywide Plan, CEQA Guidelines, and OPR guidance. The VMT significance threshold also considered thresholds applied for previous CEQA VMT assessments of land use projects by University of California (UC) and California State University (CSU) campuses. While the methodology and thresholds varied depending on the context of the land use project being evaluated, a common approach for UC and CSU campuses is that the proposed project VMT per service population (i.e., total students, faculty, and staff) rate was compared to a value of 15 percent below baseline conditions, which in most cases was the current campus VMT per service population rate but in a few cases were the overall regional or citywide VMT per service population rate. The 15 percent value was based on the OPR Technical Advisory that was relevant at the time of those studies. The VMT threshold applied for the proposed academic campus uses involves comparing the total VMT per service population for build-out of the proposed campus uses to the VMT per service population of existing campus uses and updating the threshold value to be consistent with the most current ARB VMT reduction recommendations.

For the assessment of academic campus uses, VMT impacts would be significant if the project exceeds the following threshold:

- Total Planned Campus VMT per service population (i.e., students, faculty, and staff) exceeds 30% below the 2019 Campus VMT per service population.

Bicycle/Pedestrian

Bicycle/pedestrian impacts would be significant if the project:

- Would conflict with a program, plan, ordinance, or policy addressing bicycle and pedestrian facilities
- Does not include provisions for pedestrian and bicycle circulation and bicycle and motorcycle parking and security

Transit

Transit impacts would be significant if the project:

- Would conflict with a program, plan, ordinance, or policy addressing transit services or facilities

Site Circulation

Site circulation impacts would be significant if the project:

- Conflicts with a program, project, ordinance, or policy addressing the circulation system
- Does not have adequate parking or internal circulation capacity to accommodate projected traffic so that off-site areas are not adversely impacted

Emergency Vehicle Access

Emergency access impacts would be significant if the project:

- Results in inadequate emergency access

Transportation Safety

Safety impacts would be significant if the project:

- Would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

IV. IMPACT ASSESSMENT

The section addresses potential transportation impacts related to vehicle miles traveled (VMT), pedestrian facilities, bicycle facilities, transit services, site circulation, emergency vehicle access, cumulative VMT, and construction traffic.

Vehicle Miles Traveled

IMPACT TRAN-1 Implementation of the proposed project would generate an increase in vehicle miles traveled (VMT) that may have a significant impact on the environment.

Implementation of the proposed project by 2040 would result in a total of up to about 850 residents (i.e., 680 residents of the 336 single family and multi-family units, 170 new residents for the residential care facility), 1,000 students, and 310 employees (240 campus employees, 36 new employees for the residential care facility, and 34 new employees for the fitness center).

The following impact assessment separately evaluates VMT impacts for the residential uses (single family, multi-family, and residential care facility residents) and the campus (students, faculty, and staff).

Existing plus Project VMT for Residential Uses

For this assessment of Existing plus Project VMT for residential uses, the 2015 baseline version and 2019 forecast year of the TAMDM countywide travel demand model were not applied to estimate existing plus project VMT for residential uses because travel conditions for residential uses have changed since 2015 due to a number of factors, most notably the effects of the Covid Pandemic and shifts in travel patterns including a significant increase in work from home levels, reduced commuting, and increased local travel. A "post-Covid" version of the TAMDM model is not currently available.

In recent years, big data companies have expanded their capabilities and are able to estimate vehicle trip rates and vehicle trip lengths for residents that can be used to estimate VMT per capita for discrete areas. Recent post-Covid data from these big data companies more accurately represents actual travel activity occurring today than the 2015 horizon year of the TAMDM model as it is based on contemporary data collected from a large database of mobile devices over the course of a year and the VMT rates are calculated based on trips from start to finish with no boundaries. Fehr & Peers developed specifications and obtained data from big data provider StreetLight, and subsequently developed VMT per capita estimates for residential uses by Census Block Group. StreetLight uses a large database of location-based service (LBS) data from GPS enabled devices and connected vehicle data to provide anonymized vehicle trip rate and vehicle trip length data by census block group for designated time periods by trip purpose and type of traveler. This data is available for 2019 and 2022.

The 2019 VMT per capita estimates are used to identify the baseline and applicable threshold, which is 30 percent below the regional average for 2019. The 2022 VMT per capita estimates were evaluated for four

census block groups that include the project site to identify estimates of project Home VMT per capita, as future residents of the proposed project housing are anticipated to have similar VMT per capita rates as existing residents in the surrounding neighborhoods. The following VMT per capita rates were identified.

- Existing plus Project Average Home VMT per capita (2022 data): 19.1
- Regional Average Home VMT per capita (2019 data): 19.6
- Threshold: 30 percent below Regional Average VMT per capita (2019 data): 13.7

The Existing plus Project Average Home-Based VMT per capita is estimated to be 19.1, which is 39 percent higher than the regional VMT threshold of 13.7.

IMPACT 1a – VMT for Residential Uses

The effect of VMT generated by the proposed residential uses, under Existing plus Project conditions, is considered a **significant impact** as the Home-Based VMT per capita for the residential units would not be 30 percent below the regional Home-Based VMT per capita threshold.

Mitigation Measure 1a: TDM Measures. As noted above, the Countywide Plan contains Implementation Program **TR-1.*s*: VMT Reduction Monitoring and Implementation and Transportation Demand Management Program** regarding vehicle miles traveled (VMT). The implementation program requires that the County develop and implement a VMT Reduction Monitoring and Implementation and Transportation Demand Management Program (TDM). This policy indicates that development of a TDM program is the preferred VMT reduction method for Marin County. A countywide TDM program has not yet been developed. Absent any countywide VMT reduction program, it likely would be infeasible for any new residential project in high VMT generating areas such as the Strawberry community to achieve VMT reductions of more than 30 percent through traditional transit, bike, or walk strategies, especially considering the uncertainty about how work from home (which is resulting in increased non-work vehicle trip making around residential areas) will play out over time.

Based on the remote location of the campus, the high incomes of residents of the market rate units, and the distance to transit stops, it is not anticipated that traditional Transportation Demand Management (TDM) measures to encourage increased use of transit, bicycle or pedestrian travel to the campus would be effective in significantly reducing VMT. The establishment of a dedicated level of remote course work and office hours may reduce VMT depending on how schedules are structured. It is anticipated that the most effective VMT reduction measure would be a permanent dedication of a substantial share of the market rate housing units for campus faculty and staff.

Prior to the issuance of the first building permit in the first phase of development, the project applicant shall develop a Transportation Demand Management (TDM) program for the proposed market residential units, including any anticipated phasing, and shall submit the TDM program to the County Planning Department for review and approval. The TDM program should strive to achieve a 39% reduction in

weekday home-based VMT per resident generated by the proposed market single family and multi-family residential uses to reduce impacts to a less-than-significant level.

The project applicant shall be responsible for preparing and implementing the TDM Program. The project applicant shall be responsible for funding and overseeing the delivery of trip reduction/TDM proposed programs and strategies to achieve the maximum feasible trip reduction as determined in collaboration with County staff, which may include, but are not limited to, the following:

1. Permanent dedication of market residential units for use by academic campus employees or students;
2. Dedicated shuttle for residents of market units and/or academic campus employees and/or students;
3. Establishment of carpool, buspool, or vanpool programs;
4. Vanpool purchase incentives;
5. Cash allowances, passes or other public transit subsidies and purchase incentives;
6. Parking fees set at levels sufficient to incentivize alternative modes;
7. Full or partial parking subsidies for ride-sharing vehicles;
8. Bicycle programs including bike purchase incentives, storage, maintenance program, and on-site education program;
9. On-site bike share program;
10. Dedicated employee or student housing for adjacent campus;
11. Designation of an on-site transportation coordinator for the project.

Even with implementation of Mitigation Measure 1a, because the effectiveness of VMT reduction strategies is not certain, the proposed residential uses may not achieve the overall VMT threshold reduction level. Disruptive changes to transportation such as transportation network companies (i.e., Uber, Lyft), increased delivery services (Amazon, UPS, FedEx, food, etc.), and autonomous vehicles may increase VMT beyond current levels.

Significance after Mitigation: A VMT reduction of 39 percent would be required to reduce Existing plus Project VMT rates to more than 30 percent below the existing regional average. The total estimated VMT reduction for the residential uses with traditional TDM measures is 5 percent, unless a significant level of housing is dedicated employee or student housing for the adjacent campus, based on the surrounding community context for the project. As such, after mitigation, the existing plus project VMT impact would be **Significant and Unavoidable** for the market residential uses.

Existing plus Project VMT for Campus Uses

For this assessment of Existing plus Project VMT for campus uses, a 2019 version of the TAMDM countywide travel demand model was applied to estimate existing plus project VMT per service population (i.e., faculty, staff, and students). Given the small size of the existing campus and the remote nature of classes in recent years, as well as the fact that mobile device travel data from providers such as Streetlight is aggregated to zones and not available at the parcel level for privacy reasons, this data cannot be used to estimate VMT for this project.

Table 8 provides a summary of the VMT forecasts for the campus elements of the proposed project including the fitness center and day care center uses. OPR does not provide a VMT threshold for university campuses. For the purposes of this assessment, Total VMT forecasts are prepared for both the existing campus and future campus. The Total VMT forecasts are then divided by the service population (i.e., students, faculty, and staff) to develop a VMT per capita value. The campus uses would be considered to result in a significant VMT impact if the Existing plus Project campus VMT per capita exceeds a level of 30% below the existing campus VMT per capita. The VMT forecasts indicate that the proposed campus uses would result in an Existing plus Project VMT per service population that is 30% below the VMT per service population for existing campus uses.

Table 8: Daily Vehicle Miles Traveled (VMT) for Campus Uses

Scenario	Total Campus VMT	Total Campus VMT Per Service Population
BASELINE (2019)	1,688	13.61
EXISTING PLUS PROJECT	11,883	9.58
PERCENT CHANGE – 2040 Plus Total VMT for Campus Uses per Service Population Rate Compared to Baseline (2019) Rate for Existing Campus Uses		
EXISTING PLUS PROJECT		-30%

Notes:
1. Service population = campus students, faculty, and staff. The current estimated service population for campus uses is 124 and the proposed population for campus uses would be 1,240 at build-out.

Source: Fehr & Peers.

IMPACT 1b – VMT for Campus Uses

The effect of VMT generated by the proposed campus uses, under Existing plus Project conditions, is considered a **less-than-significant impact**.

Pedestrian

IMPACT TRAN-2 Implementation of the proposed project would not result in potential conflicts with adopted policies, plans or programs regarding pedestrian facilities that may have a significant impact on the environment.

The current project site has pedestrian paths that link buildings within the academic campus area, between the academic campus and the adjacent dormitory hill area, and between parking lots and adjacent multi-family residential units. There are no sidewalks along the internal project streets, which range from about 20 to 30 feet in width.

Goal 1 of the Marin County Bicycle and Pedestrian Master Plan is to expand bicycle and pedestrian facilities and access in and between neighborhoods, employment centers, shopping areas, schools, and recreational sites, in pursuit of the Marin Countywide Plan goal of having 20% of all trips made by walking or biking by 2020 and add a 2030 goal of 25% bicycling and walking mode share. Goal 2 of the Plan is to encourage walking as a daily form of transportation in Marin County by completing a pedestrian network that services short trips and transit.

The proposed project includes the provision of new trails and walkways within the academic campus area as well as within the residential planning areas. New pedestrian facilities would be provided along Gilbert Drive, Hodges Drive, Mission Drive, Shuck Drive, and Storer Drive.

The bus hub located at the US 101/Seminary Drive interchange is a walking distance of about 0.75 miles from the entrance to the project site and about 1.2 miles to the academic campus area. Bus routes serving the Seminary Drive Bus Pad and bus stops at the US 101/Seminary Drive interchange include Marin Transit routes 17 (Downtown San Rafael-Sausalito), 22 (Downtown San Rafael-Marin City), 36 (Canal-Marin City), 71 (Novato-Marin City), and 219 (Tiburon-Strawberry) as well as Golden Gate Transit routes 130 (San Rafael-San Francisco), 132 (San Anselmo-San Francisco), and 150 (San Rafael-San Francisco). There are currently pedestrian facilities between these bus stops along US 101 and the entrance to the project site. The new trails and walkways described above within the project site would provide continuous pedestrian facilities between the US 101 bus hub and the academic campus area as well as new residential units.

A bus stop located on Tiburon Boulevard just east of East Strawberry Drive, about a one mile walk from the academic campus area, is served by Marin Transit 219 (Tiburon-Strawberry). There is no sidewalk on East Strawberry Drive between Harbor Cove Way and Island Drive, a distance of about 0.3 miles. Most of this roadway segment is split level, with the southbound travel lane at a higher elevation than the northbound travel lane, with a shoulder that is used for parking.

Impact TRAN-2: Implementation of the proposed project would not result in conflicts with adopted policies, plans, or programs or otherwise decrease the performance or safety of pedestrian facilities.

Significance without Mitigation: Less than Significant.

Bicycle

IMPACT TRAN-3 Implementation of the proposed project would not result in potential conflicts with adopted policies, plans or programs regarding bicycle facilities that may have a significant impact on the environment.

Relevant transportation goals and policy statements from the Transportation and Circulation Element of the General Plan require new development to provide new bicycle and pedestrian facilities.

A Class II bike lane is currently provided on Seminary Drive between Gilbert Drive and Weatherly Drive. The remainder of Seminary Drive is designated in the Marin County Bicycle and Pedestrian Master Plan as an existing Class III route that is proposed to be a Class II bike lane. The segment of the Redwood Highway Frontage Road on the east side of US 101 is similarly designated in the Bicycle and Pedestrian Master Plan as an existing Class III route that is proposed to be a Class II bike lane. The segment of the Redwood Highway Frontage Road on the west side of US 101 is designated as an existing Class III route from Hamilton Drive to the south. East Strawberry Drive (from Tiburon Boulevard to Weatherly Drive) and Belvedere Drive (from East Strawberry Drive to Redwood Highway Frontage Road) are designated as existing Class III routes. Class II bike lanes are dedicated facilities for bicyclists immediately adjacent to automobile traffic and Class III routes are on-street routes where bicyclists and automobiles share the road. There are currently no markings or signage of the Class III routes in the study area.

The Bicycle and Pedestrian Master Plan shows the following planned bicycle facilities in the study area:

- Class II bike lane on Tiburon Boulevard from US 101 to Trestle Glen Boulevard
- Class II bike lane on the Redwood Highway Frontage Road on the east side of US 101 from Tiburon Boulevard to just south of the signalized intersection of US 101 northbound ramps/De Silva Island Drive
- Class II bike lane on Seminary Drive from the Redwood Highway Frontage Road to Gilbert Drive

As mentioned earlier, Goal 1 of the Marin County Bicycle and Pedestrian Master Plan is to expand bicycle and pedestrian facilities and access in and between neighborhoods, employment centers, shopping areas, schools, and recreational sites. Goal 2 of the Plan is to make the bicycle an integral part of daily life in Marin County, particularly for trips of less than five miles, by implementing and maintaining a bikeway network, providing end-of-trip facilities, improving bicycle/transit integration, encouraging bicycle use, and making bicycling safer and more convenient for people of all ages and abilities. County of Marin staff have indicated that the project will be required to construct bike lanes along the project frontage on Seminary Drive.

The proposed project includes the designation of Class III bike routes on internal streets including Chapel Drive, Gilbert Drive, Hodges Drive, Shuck Drive, Storer Drive and Willis Drive. The most direct route for future campus affiliates or residents wishing to access regional bike facilities would be to travel north along East Strawberry Drive to planned new bike facilities along Tiburon Boulevard or travel west along Seminary Drive to the Redwood Highway Frontage Road to Hamilton Drive to the North-South Greenway.

Impact TRAN-3: Implementation of the proposed project would not result in conflicts with adopted policies, plans, or programs or otherwise decrease the performance or safety of bicycle facilities.

Significance without Mitigation: Less than Significant.

Transit

IMPACT TRAN-4 Implementation of the proposed project would not result in potential conflicts with adopted policies, plans or programs regarding public transit that may have a significant impact on the environment.

The bus hub located at the US 101/Seminary Drive interchange is a walking distance of about 0.75 miles from the entrance to the project site and about 1.2 miles to the academic campus area. Bus routes serving the Seminary Drive Bus Pad and bus stops at the US 101/Seminary Drive interchange include Marin Transit routes 17 (Downtown San Rafael-Sausalito), 22 (Downtown San Rafael-Marin City), 36 (Canal-Marin City), 71 (Novato-Marin City), and 219 (Tiburon-Strawberry) as well as Golden Gate Transit routes 130 (San Rafael-San Francisco), 132 (San Anselmo-San Francisco), and 150 (San Rafael-San Francisco). A bus stop located on Tiburon Boulevard just east of East Strawberry Drive, about a one mile walk from the academic campus area, is served by Marin Transit 219 (Tiburon-Strawberry).

In 2019, 66% of workers living in the Strawberry census designated place drove alone to work, 12.3% worked from home, 8.4% carpooled, 8% took transit, 4.7% walked, and the balance commuted via motorcycle.[9]

Transit agencies throughout the Bay Area have seen substantial declines in ridership due to COVID. The monthly bus ridership for all Golden Gate transit routes was 105,347 in May 2022, about 39% of the pre-COVID ridership level of 270,372 in May 2019. The monthly bus ridership for all Marin transit routes was 229,604 in March 2022, about 85% of the pre-COVID ridership level of 270,669 in March 2019.

Policy TR-3.1 in the Marin Countywide Plan calls for encouraging the expansion and improvement of local bus and ferry services to all areas of the county.

Impact TRAN-4: Implementation of the proposed project would not result in conflicts with adopted policies, plans, or programs or otherwise decrease the performance or safety of transit facilities or services.

Significance without Mitigation: Less than Significant.

[9] *Data USA*, Deloitte, Data Wheel, and Professor Cesar Hidalgo.

Safety

IMPACT TRAN-5 Implementation of the proposed project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) that may have a significant impact on the environment..

As detailed in the project description, the project involves renovation of an existing academic campus, relocation of an existing daycare center, construction of a new fitness center and residential care facility, upgrades to existing housing and construction of new housing, retention and access improvements to existing open space and recreation areas, and the provision of new bicycle and pedestrian paths within the project site.

The project would be subject to review by County staff, thus ensuring all Federal and County standards and regulations regarding design, accessibility, and safety would be met. Federal accessibility standards and regulations are identified in ADA and PROWAG guidelines. The project would be required to comply with County of Marin roadway design standards as identified in the Uniform Construction Standards (Marin County 2018a) and Marin County Code (Marin County 2022), including those identified in Chapter 19.05, pertaining to regulations regarding streets improvements abutting building sites, and Title 24 of the Marin County Code, which includes the County's Development Standards. Section 24.04.110 sets forth minimum widths, and Section 24.04.120 sets forth minimum grades for streets. The minimum paved width for a limited residential road is 20 feet with shoulders or 24 feet with curbs. For a minor residential road, the minimum paved road width is 28 feet; for a residential road it is 36 feet; and for a collector road it is 40 feet. Maximum grades are 6 percent for arterial and collector roads, 12 percent for residential roads, and 18 percent for minor and limited residential roads.

Hodges Drive and Gilbert Drive would serve as the main access to Seminary Drive for residential and campus uses, respectively, and would each carry more than 1,000 daily vehicle trips at build-out; thus, both roadways would be classified as collector streets under the Marin County Code (Appendix Q). The streets within the project site range in width from approximately 20 feet to 28 feet without shoulders; thus, the existing roadways do not satisfy the minimum required width for collector and local streets (i.e., 40 feet and 36 feet, respectively).

A total of 608 parking spaces are currently located throughout the project site including 311 residential parking spaces and 297 parking spaces for the academic campus. The project would provide a total of 944 parking spaces in a three-tiered parking lot and in underground garages in residential structures and garages in duplexes. This includes 51 existing residential spaces, 467 spaces for new residential development, 185 spaces for the residential care facility, and 241 spaces for the academic campus. The TIS found that a total of 915 parking stalls would be necessary to meet demand during a typical weekday (Appendix Q). Based on Marin County Municipal Code parking requirements as well as the estimated parking demand based on ITE parking rates, the parking provided for residential uses would be adequate. However, the 241 parking spaces for the academic campus would not be sufficient to meet demand at build-out, thus resulting in a secondary impact would occur caused by overflow parking potentially

impacting emergency vehicle access and impacting cyclists using on-street bike lanes that could be blocked illegally by parked campus vehicles. An additional 144 parking spaces would be required to meet the estimated demand for the academic campus. Approximately 60 percent of the proposed academic campus build-out could be accommodated with the proposed parking supply.

Given the location of academic uses on the eastern end of the project site, the most likely location for spillover parking to occur would be on the west side of East Strawberry Drive, both north and south of Herring Drive. The shoulder on the west side of East Strawberry Drive along this segment is about seven feet wide, which is sufficient for a parked vehicle; however, there is no sidewalk on the west side of East Strawberry Drive in this area. Students or employees parking on this portion of East Strawberry Drive would either walk in the southbound travel lane or cross the street twice to use the sidewalk on the east side of the roadway, creating potential conflicts between pedestrians and vehicles. Therefore, because some of the internal roadways would not meet County roadway width requirements and the project would not supply the necessary number of parking spaces to avoid parking spillover, the project could potentially result in a substantial increase in transportation hazards related to operations.

Impact TRAN-5: Implementation of the proposed project would substantially increase hazards due to a geometric design feature that would result in a significant impact.

Streets within the project site do not meet County design standards regarding roadway widths and may not meet ADA or PROWAG accessibility guidelines. As planned, the project would not provide adequate parking supply for the academic campus, which could result in parking spill over on surrounding streets where sidewalks and crosswalks do not exist; thus resulting in potential conflicts between pedestrians and vehicles. For these reasons, the project could substantially increase hazards due to a geometric design feature or incompatible uses. Therefore, this impact would be **potentially significant.**

> **Mitigation Measure 5a: Meet ADA and PROWAG guidelines for transportation accessibility. Widen Hodges Drive and Gilbert Drive to Meet County of Marin Roadway Standards** The project applicant shall provide roadway, parking, and pedestrian facilities that meet ADA and PROWAG guidelines. The project applicant shall incorporate into the project the widening of Hodges Drive and Gilbert Drive to meet County of Marin roadway design standards as identified in Municipal Code Section 24.04.110. The project shall be subject to review by County of Marin Public Works staff to ensure all County requirements and regulations are met and ensure the safe movement of all modes of transportation navigating the project site. The project applicant shall submit a waiver request for any existing or planned road, pedestrian, bicycle, transit, or parking facilities or services on the site that will not meet County roadway, ADA, or PROWAG standards.
>
> **Mitigation Measure 5b: Implement Measures to Reduce Parking Demand and/or Increase Supply for the Academic Campus** At build-out of the academic campus, it is estimated that there would be a parking deficit of 144 parking spaces. To address this deficit and the resulting secondary impacts, the project applicant shall prioritize implementation of parking reduction measures for faculty, staff, and students of the academic campus. Based on the remote location of the campus, it is not anticipated that traditional Transportation Demand Management (TDM)

measures to encourage increased use of transit, bicycle or pedestrian travel to the campus would be effective without substantial incentives and a dedicated shuttle service to campus. The establishment of a dedicated level of remote course work and office hours may reduce parking demand depending on how schedules are structured. It is anticipated that the most effective parking demand reduction measure would be a permanent dedication of a share of the market rate housing units for campus faculty and staff, which would also reduce VMT impacts for the project housing uses. Prior to expanding the academic campus beyond 50 percent of the proposed build-out, the project applicant shall submit a parking study that documents academic campus parking usage and any parking overflow onto adjacent residential streets (based on surveys and analysis conducted by an independent professional transportation consultant approved by County staff) as well as the status of all parking demand reduction measures. The study shall verify that campus parking occupancy levels do not exceed 90 percent. Should there be excess parking occupancy and overflow conditions, the project applicant shall implement additional parking reduction measures and/or new parking supply improvements to address parking shortfalls before any additional campus expansion. All parking shall be located on the project site and within the vicinity of the facility that it serves. Off-site overflow parking is not an acceptable strategy.

Significance after Mitigation: Implementation of Mitigation Measure 5a requires the project applicant to design internal roadways to meet County of Marin design standards, and Mitigation Measure 5b requires the project applicant to implement parking reduction and/or supply measures to meet anticipated demand of the academic campus. The implementation of the mitigation measures identified above would reduce safety impacts exacerbated by the project. Therefore, the impact would be **less than significant with mitigation incorporated.**

Emergency Vehicle Access

IMPACT TRAN-6 Implementation of the proposed project would not result in potential conflicts with adopted policies, plans or programs regarding emergency vehicle access that may have a significant impact on the environment.

Emergency vehicle access impacts would be significant if the project resulted in inadequate emergency access. This assessment reviews both the ability of emergency vehicles to access the project site as well as the effect of added vehicle trips on key egress routes through the Strawberry community for fire vehicles from Southern Marin Fire Protection District (SMFD) Station 9 Strawberry.

Access to the project site for emergency vehicles is provided via multiple connections to Seminary Drive on the west and south, Reed Avenue on the north and Herring Drive on the east. Fire Station 9 Strawberry is located about 400 feet north of the campus on Reed Avenue, providing a high level of emergency vehicle access to the site. Other first responders would most likely access the campus via US 101, the ramps onto the Redwood Highway Frontage Road, and Seminary Drive. The existing connections to the project site provide adequate access for emergency vehicles.

As noted earlier, based on consultation with SMFD Chiefs, the following are the primary egress routes for fire trucks from Station 9 Strawberry through the Strawberry community based on the call destination and streets where the project would add vehicle trips.

- Redwood Highway Frontage Road/US 101 South/US 101 North: north on Reed Boulevard, west on Meda Lane, and west on Ricardo Road/Seminary Drive to Redwood Highway Frontage Road.
- Tiburon: north of Reed Boulevard, east on Ricardo Road/Ricardo Lane, and north on E Strawberry Drive to Tiburon Boulevard (SR 131).

As shown in Table 5, the project would result in a net addition of about 180 vehicle trips during a weekday AM peak hour and 230 vehicle trips during a weekday PM peak hour. The following is an estimated trip distribution of the added vehicles on key routes based on count data collected at the project site and throughout the Strawberry community.

- TO WEST (via Seminary Drive to Redwood Frontage Road): 85% of housing trips, 80% of campus trips
- TO NORTH (via E Strawberry Drive): 13% of housing trips, 18% of campus trips
- TO NORTH (via Reed Boulevard): 2% of housing trips, 2% of campus trips

The proposed project would add the following number of net new trips to the following key fire egress routes.

- TO WEST (segment of Seminary Drive just east of Redwood Hwy Frontage Road)
    - AM Peak Hour – adds 145 net peak trips

    - PM Peak Hour – adds 185 net peak trips

- TO NORTH (segment of Reed Boulevard just north of Storer Drive)
    - AM Peak Hour – adds 5 net peak trips
    - PM Peak Hour – adds 5 net peak trips
- TO NORTH (segment of E Strawberry Drive just south of Tiburon Boulevard)
    - AM Peak Hour – adds 30 net peak trips
    - PM Peak Hour – adds 40 net peak trips

The proposed project would add the greatest level of net new peak hour trips to the segment of Seminary Drive just east of Redwood Highway Frontage Road, with about 145 net new peak hour trips during the AM peak hour and 185 net new trips during the PM peak hour. That represents an increase in existing volumes of about 28% during the AM peak hour and 35% during the PM peak hour. Under Cumulative plus Project conditions, the westbound delay during the AM peak hour at the Redwood Highway Frontage Road/Seminary Drive intersection would increase from about 19 to 23 seconds per vehicle (westbound approach during the AM peak hour changes from Level of Service B to C) with added project trips. This level of added traffic is potentially significant to response times for fire trucks along this segment of Seminary Drive from Station 9 Strawberry.

Impact TRAN-6: Implementation of the proposed project would potentially result in conflicts with adopted policies, plans, or programs or otherwise decrease emergency vehicle access. This is due to the potential impact of added vehicle trips on the segment of Seminary Drive, east of the Redwood Highway Frontage Road, on response times for fire trucks from Station 9 Strawberry.

> **Mitigation Measure TRAN-6:** The project applicant shall construct a roundabout at the intersection of Seminary Drive/Ricardo Road/Vista Del Sol. The design of the roundabout, and potential advance warning devices to stop traffic entering the roundabout when fire trucks are traveling through the intersection, shall be reviewed and approved by the SMFD.
>
> An alternative mitigation measure to the addition of a roundabout would be a traffic signal at the intersection of Seminary Drive/Ricardo Road/Vista Del Sol with interconnect to the traffic signal at the Redwood Highway Frontage Road/Seminary Drive intersection. Emergency vehicle pre-emption devices shall be implemented at both intersection traffic signals. If the alternative traffic signal is implemented, design of the improvements shall be reviewed and approved by the SMFD.

Significance after Mitigation: Less than Significant.

Construction Traffic

IMPACT TRAN-7 Implementation of the proposed project would generate construction traffic that may have a significant impact on the environment.

Construction of the entire project would take approximately four years and would be initiated in 2023 and completed by 2027. Buildout of the project is proposed to occur within several phases categorized by the project components: residential development, academic uses, and landscaping and site improvements. The construction labor force would fluctuate depending on the phase of work. The approximate number of on-site workers could range from 10-160 people depending on project component and phase. All construction staging would occur within the project site. The project would require approximately 220,000 cubic yards of cut and fill, which would be balanced on-site.

In conformance with Marin County Development Code Section 6.70.030, construction activities would occur between the hours of 7:00 a.m. to 6:00 p.m., Monday through Friday, and from 9:00 a.m. to 5:00 p.m. on Saturdays. The operation of loud noise-generating construction equipment (e.g., backhoes, generators, and jackhammers) would be limited to the hours of 8:00 a.m. to 5:00 p.m., Monday through Friday. Construction activities would be prohibited on Sundays and holidays.

Construction of the proposed project, including site preparation and construction, and delivery activities, would generate employee trips and a variety of construction-related vehicles. Construction activities would include disruptions to the transportation network near the project site, including the possibility of temporary lane closures, street closures, sidewalk closures, and bikeway closures. This may impact the movement of agricultural vehicles and equipment during construction. Bicycle and transit access may also be disrupted. These activities could result in degraded roadway conditions.

Impact TRAN-7: Implementation of the proposed project would result in the addition of construction traffic that would result in a significant impact.

> **Mitigation Measure 7: Construction Traffic Control Plan**. Prior to any construction activities for the proposed project, the applicant shall prepare a detailed Construction Traffic Control Plan and submit it for review and approval by the County Department of Public Works. The applicant and the county shall consult with Caltrans, Golden Gate Transit, Marin Transit, Southern Marin Fire Protection District (SMFD) Station 9 Strawberry staff, and other local emergency service providers for their input prior to approving the Plan. The plan shall ensure that acceptable operating conditions on local roadways and freeway facilities are maintained during construction. At a minimum, the plan shall include:
>
> - The number of truck trips, time, and day of street closures
> - Time of day of arrival and departure of trucks
> - Limitations on the size and type of trucks, provision of a staging area with a limitation on the number of trucks that can be waiting
> - Provision of a truck circulation pattern

- Provision of a driveway access plan so that safe vehicular, pedestrian, and bicycle movements are maintained (e.g., steel plates, minimum distances of open trenches, and private vehicle pick-up and drop-off areas)
- Maintain safe and efficient access routes for emergency vehicles
- Maintain safe and efficient access routes for vehicles
- Manual traffic control when necessary
- Proper advance warning and posted signage concerning street closures
- Provisions for pedestrian safety

A copy of the construction traffic control plan shall be submitted to local emergency response agencies and these agencies shall be notified at least 14 days before the commencement of construction that would partially or fully obstruct roadways.

Mitigation Measure 7 would reduce the construction traffic impacts to a less-than-significant level.

Significance after Mitigation: Less than significant

Cumulative VMT

IMPACT TRAN-8 The change in VMT would be cumulatively considerable.

Cumulative plus Project VMT for Residential Uses

VMT forecasts[10] generated from the TAMDM countywide travel demand model indicate that Home-based VMT per resident is forecast to decline by about five percent at both the regional and Marin County levels between 2015 and 2040. Because the long-term trend of VMT rates is forecast to decrease slightly, the Existing plus Project VMT assessment described in IMPACT TRAN-1 is applicable to determining that the project's market residential uses would have a considerable contribution to cumulative VMT impacts and the project's campus uses would have a less than considerable contribution to cumulative VMT impacts.

IMPACT 8a – VMT for Residential Uses

The cumulative effect of VMT generated by proposed project residential uses is considered a **significant impact**.

> **Mitigation Measure 8a: Implement Mitigation Measure 1a**.
>
> **Significance after Mitigation:** The most effective VMT mitigation strategies for residential uses would be a permanent dedication of a portion of the housing for campus employees or students. A VMT reduction of more than 30 percent would be required to reduce Cumulative plus Project VMT rates to more than 30 percent below the existing regional average. The total potential VMT reduction for the market residential uses is 5 percent, unless a significant level of housing is dedicated employee or student housing for the adjacent campus, based on the surrounding community context for the project. As such, after mitigation, the cumulative project VMT impact would be **Significant and Unavoidable** for the residential uses.

Cumulative plus Project VMT for Campus Uses

IMPACT 8b – VMT for Campus Uses

The effect of VMT generated by the proposed campus uses, under Cumulative plus Project conditions, is considered a **less-than-significant impact**.

[10] Kevin Johnson to Derek McGill memorandum, November 2, 2020, "2015 & 2040 TAMDM Marin County VMT Estimates".

Appendix R

LOS Assessment Memo

FEHR PEERS

Memorandum

Date: October 10, 2022

To: Zach Miller, Ascent Environmental

From: Bob Grandy, Emily Chen, and Brian Lin

Subject: Marin North Coast Land Holdings (NCLH) - Level of Service (LOS) Assessment

SF21-1170

This memorandum provides a LOS Assessment for County Merits Findings to identify whether study intersections would meet the County LOS standard with the addition of NCLH project traffic. This assessment may not be used to determine CEQA impacts but may inform decisions about potential conditions of approval.

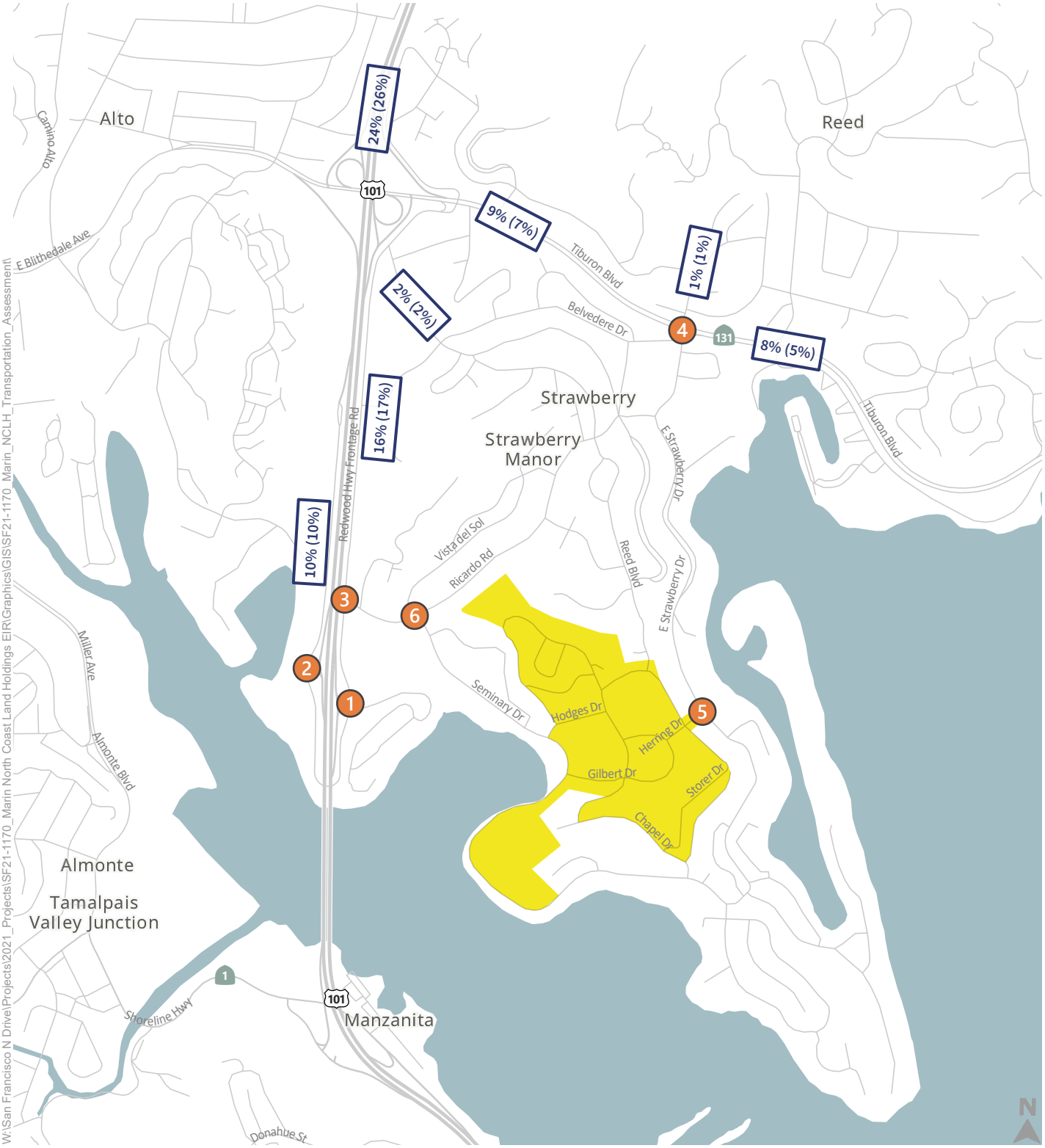
Study Intersections

The LOS Assessment is conducted for the following intersections. **Figure 1** shows the street network, location of the study intersections, and project trip distribution.

1. US 101 northbound ramps/Redwood Highway Frontage Road/De Silva Island Road
2. US 101 southbound ramps/Redwood Highway Frontage Road
3. Redwood Highway Frontage Road/Seminary Drive
4. Tiburon Boulevard/E. Strawberry Drive
5. E. Strawberry Drive/Herring Drive
6. Seminary Drive/Ricardo Road/Vista Del Sol

County LOS Standard

Policy TR-1.2 and Implementation Plan TR-1.e of the existing Marin Countywide Plan establishes LOS D or better for urban and suburban arterials and LOS E or better for freeways and rural expressways. Only the Congestion Management Program specified roadway and highway segments operating at a lower LOS than the standard in 1991 are grandfathered and may continue to operate at the lower LOS standard until such time as the roads are improved or the traffic load or demand is reduced or diverted. Unless determined to be infeasible, alternatives that reduce fossil fuels and single occupancy vehicle use should be considered a priority over infrastructure improvements such as road widening.



Study Intersections

XX% (YY%) Campus Distribution (Residential Distribution)

Campus/Project Boundary

Figure 1

Study Intersections and Project Trip Distribution

Intersection LOS Definitions, which identify LOS based on vehicle delay, for the signalized and stop controlled intersections evaluated in this LOS Assessment are based on the Sixth Edition (latest version) of the Highway Capacity Manual.

Study Scenarios

The transportation modeling and analysis was conducted for the following scenarios.

- Existing Conditions – existing setting based on traffic counts collected in December 2021.
- Existing Plus Project – addition of the increment of project trips, between existing and proposed development levels, to existing traffic counts.
- 2040 No Project – conditions with 2040 land use forecasts and transportation infrastructure assumptions for Unincorporated Marin County based on Plan Bay Area 2040 as developed by MTC.
- 2040 Plus Project – conditions with 2040 land use forecasts and transportation infrastructure assumptions for the proposed project.

2040 No Project Transportation System

The following roadway improvements or transportation programs, as provided by Transportation Authority of Marin (TAM) staff, are incorporated in the 2040 No Project scenario.

- Minor Highway Improvements – Highway Interchange Improvements, Bicycle/Pedestrian Crossings, and Auxiliary Lanes
- Minor Roadway Projects – Highway Safety Improvement Program (HSIP) Projects and Sea Level Rise Improvements
- Minor Transit Improvements – Fleet expansion/facilities, Access to Transit, and Transit Service Expansion
- New Bicycle & Pedestrian Facilities including North South Greenway Projects, SMART Multi Use Path, Cross Marin Bikeway, Approaches to Richmond San Rafael Bridge, Safe Pathways Projects, Small Safety Projects, and Safe Route to Transit Projects
- Management Systems – Ramp Metering Phase 1 & 2, and Innovative Technology
- Safety and Security – Safe Routes to School Program and Crossing Guard Program
- Travel Demand Management – TDM Program, Alternative Fuels Program, and Traveler Information Programs
- Multimodal Streetscape Improvements – Local Road Improvements

Travel Model Validation

The following section describes the methodology for forecasts developed for this LOS Assessment.

The forecasts generated for this LOS assessment were produced using the Transportation Authority of Marin Demand Model (TAMDM). For this assessment, the 2015 base year for TAMDM was updated and validated for a new 2019 base year for the City of San Rafael General Plan Update. A key reason for applying the updated 2019 base year is that it includes the SMART rail system that was not in place in 2015. This analysis includes a 2040 No Project scenario that is based on the TAMDM horizon year and reflects land use changes and transportation improvements consistent with the San Rafael General Plan 2040 adopted in 2021. The 2019 base year model developed for the San Rafael General Plan Update was validated based on model confidence thresholds defined in the California Transportation Commission 2017 RTP guidelines.

For this project, the network and land use inputs for the study area for the model's 2019 base year were reviewed and enhanced to provide the level of detail necessary for the study. A model validation was performed for the study sub-area and model validation measures in the RTP guidelines were met for the 2019 base year for 73 study road segments in the study area as shown in **Table 1** below.

Table 1: Study Area Model Validation Results (2017 California RTP Guidelines)

Validation Measure	AM Peak Period (4-Hour)	PM Peak Period (4-Hour)	Daily	Threshold
Volume-to-Count Ratio (Sum of all locations)[1] =	0.96	1.07	0.98	None specified[2]
Percent of Links within Caltrans Deviation Allowance[1] =	79.5%	75.3%	79.5%	At Least 75%
Percent Root Mean Square Error (RMSE)[1] =	30.5%	23.0%	19.3%	Below 40%
Correlation Coefficient[1] =	0.98	0.99	0.99	At Least 0.88
Number of Links/Validation Locations =	73	73	73	

Source: Fehr & Peers.
Notes:
1. Static Validation Criteria and Thresholds, 2017 California Regional Transportation Plan Guidelines, California Transportation Commission.
2. Although no specific threshold is specified, a threshold of "within 10%" of the sum of all locations was applied.

Project Trip Generation

The purpose of the vehicular trip generation estimate is to approximate the number of new vehicle trips entering and exiting the site for various purposes (e.g., residential, employee, student, and visitor trips) during a selected time period. The proposed project will contain a mix of land uses including a new daycare and fitness center, new residential care facility, upgrades to existing housing and construction of new housing, and renovation of academic campus buildings. **Table 2** presents the buildout development program.

Table 2: Project Land Use Program

Land Use	Units	Total
Day Care Center	Square Feet / Children	3,000 / 60
Fitness Center	Square Feet	17,000
Residential Care Facility	Square Feet / Residents	267,354 / 170
Assisted Living and Memory Care Residences	Units / Residents	50 / 40
Independent Living Residences	Units / Residents	100 / 130
Academic Campus	Students / Faculty & Staff	1,000 / 240
Residential – Single Family Units	Dwelling Units (DU)	11
Residential – Multi-Family Units (market)	Dwelling Units (DU)	275
Residential – Multi-Family Units (affordable)	Dwelling Units (DU)	50

Source: Ascent Environmental, June 2022.

Trip Generation Methodology

The project site is currently occupied by academic and residential uses. The trip generation assessment identifies the total number of external vehicle trips generated by the project site at build-out as well as the net number of trips generated by subtracting the number of trips generated by existing uses from trips generated by project build-out. The trip generation assessment also considers internal trip making between the academic uses, residential uses, day care, and fitness center. Because the project description does not include dedicated housing for the academic campus, the build-out trip generation assessment is based on traditional travel relationships between the adjacent uses.

Current accepted methodologies, such as the Institute of Transportation Engineers' (ITE) *Trip Generation* methodology, are primarily based on data collected at suburban, single-use, freestanding sites. These defining characteristics limit their applicability to mixed-use or multi-use development projects, such as this project, which, given its land use mix, design features, and setting, would include characteristics that influence travel behavior differently from typical single-

use suburban developments. Thus, traditional data and methodologies, such as ITE, would not accurately estimate the project vehicle trip generation.

In response to the limitations in the ITE methodology, and to provide a straightforward and empirically validated method of estimating vehicle trip generation at mixed-use developments, the US Environmental Protection Agency (EPA) sponsored a national study of trip generation characteristics of multi-use sites. Travel survey data was gathered from 239 mixed-use developments (MXDs) in six major metropolitan regions and correlated with characteristics of the sites and their surroundings. The findings indicate that the amount of external traffic generated is affected by a wide variety of factors including the mix of employment and residents, the overall size and density of the development, the internal connectivity for walking or driving among land uses, the availability of transit service, and the surrounding trip destinations within the immediate area outside the project site.

These characteristics were related to trip behavior observed at the study development sites using statistical techniques. These statistical relationships produced equations, known as the EPA MXD model, which allow predicting external vehicle trip reduction as a function of the MXD characteristics. Applying external vehicle trip reduction percentage to "raw trips," as predicted by ITE, produces an estimate for the number of vehicle trips traveling into or out of the site.

The MXD model has been approved for use by the EPA.[1] It has also been peer-reviewed in the ASCE Journal of Urban Planning and Development,[2] peer-reviewed in a 2012 TRB paper evaluating various smart growth trip generation methodologies,[3] recommended by SANDAG for use on mixed-use smart growth developments,[4] promoted in an American Planning Association (APA) Planning Advisory Service (PAS)[5] which recommended it for evaluating traffic generation of mixed-use and other forms of smart growth. It has also been used successfully in multiple certified EIRs in California.

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[1] Trip Generation Tool for Mixed-Use Developments (2012). www.epa.gov/dced/mxd_tripgeneration.html

[2] "Traffic Generated by Mixed-Use Developments—Six-Region Study Using Consistent Built Environmental Measures." Journal of Urban Planning and Development, 137(3), 248–261.

[3] Shafizadeh, Kevan et al. "Evaluation of the Operation and Accuracy of Available Smart Growth Trip Generation Methodologies for Use in California." Presented at 91st Annual Meeting of the Transportation Research Board, Washington, D.C., 2012.

[4] SANDAG Smart Growth Trip Generation and Parking Study. http://www.sandag.org/index.asp?projectid=378&fuseaction=projects.detail

[5] Walters, Jerry et al. "Getting Trip Generation Right – Eliminating the Bias Against Mixed Use Development." American Planning Association. May 2013.

Internal Capture

Internal trips are responsible for an 8% reduction of daily external vehicle trips, a 16% reduction of AM peak hour external vehicle trips, and a 17% reduction of PM peak hour external vehicle trips. Some examples of an internal trip would be a parent living in one of the project dwelling units dropping off a student at the day care center, a person living in one of the project dwelling units working at or attending classes at the campus, or a student exercising at the fitness center. Some of these trips would potentially still occur by vehicle, though they would remain internal to the larger project site.

In total, the MXD trip generation methodology is responsible for a 12% reduction of daily external vehicle trips, a 20% reduction of AM peak hour external vehicle trips, and a 20% reduction of PM peak hour external vehicle trips when compared to the unadjusted ITE methodology.

Input values were collected for the MXD model for use in application on the project trip generation. The MXD model uses internal project information such as land use mix, project area, intersection density, and transit stop placement as well as local and regional demographic data such as average household size and vehicle ownership, employment within one mile of the site, and employment within a 30-minute transit trip.

Project Trip Generation

Input values were collected for the MXD model for use in application on the project trip generation. The MXD model uses internal project information such as land use mix, project area, intersection density, and transit stop placement as well as local and regional demographic data such as average household size and vehicle ownership, employment within one mile of the site, and employment within a 30-minute transit trip.

In addition, the MXD model was used to estimate the total number of trips generated by the existing land uses, which include a day care center, 145 residential dwelling units, and a 66-bed dormitory, and the existing academic campus. The total net trip generation for the project consists of the MXD estimated project trips minus the MXD estimated existing trips.

Table 3 summarizes the estimated trip generation for the project using the MXD methodology for a typical weekday. As shown in **Table 3**, the project is estimated to generate 2,608 net new daily vehicle trips, with 179 net new trips during the AM peak hour, and 227 net new trips during the PM peak hour.

Table 3: Project Trip Generation

Land Use	Daily Trips	Weekday Am Peak Hour			Weekday Pm Peak Hour		
		In	Out	Total	In	Out	Total
Build-out Trips Generated by Project Site							
Day Care Center	245	25	22	47	22	25	47
Fitness Center	490	21	11	32	35	40	75
Residential Care Facility							
Assisted Living/Memory Care Residences	130	5	4	9	5	7	12
Independent Living Residences	247	10	5	15	7	12	19
Academic Campus	1,560	117	33	150	48	102	150
Residential – Single Family Units	104	2	6	8	6	4	10
Residential – Multi-Family Units (market)	1,854	26	84	110	88	52	140
Residential – Multi-Family Units (affordable)	240	5	13	18	14	9	23
Total Gross Project Trips (Build-out)	**4,870**	**211**	**178**	**389**	**225**	**251**	**476**
Build-out Reductions							
Internal Capture	(396)	(34)	(28)	(62)	(38)	(42)	(80)
External (Walk, Bike, and Transit)	(198)	(8)	(7)	(15)	(6)	(8)	(14)
Build-out External Trip Reduction	**(594)**	**(42)**	**(35)**	**(77)**	**(44)**	**(50)**	**(94)**
Existing Trips Generated by Project Site							
Day Care Center	245	25	22	47	22	25	47
Academic Campus	156	12	3	15	5	10	15
Residential – Single Family Units	28	1	1	2	2	1	3
Residential – Multi-Family Units	986	16	51	67	52	30	82
Residential – Student Dormitory	408	7	12	19	14	14	27
Total Gross Project Trips (Existing)	**1,823**	**61**	**89**	**150**	**95**	**80**	**174**
Existing Reductions							
Internal Capture	(100)	(5)	(7)	(12)	(8)	(6)	(14)
External (Walk, Bike, and Transit)	(55)	(2)	(3)	(5)	(3)	(2)	(5)
Existing External Trip Reduction	**(155)**	**(7)**	**(10)**	**(17)**	**(11)**	**(8)**	**(19)**
EXTERNAL PROJECT TRIPS	**4,276**	**169**	**143**	**312**	**181**	**201**	**382**
NET NEW PROJECT TRIPS	**2,608**	**115**	**64**	**179**	**97**	**129**	**227**

Source: Fehr & Peers, Institute of Transportation Engineers Trip Generation (11th Edition), US EPA MXD Model.
ITE Codes: 565-Day Care, 495-Recreational Community Center, 254-Assisted Living, 255-Independent Living, 550-Academic Campus, 210-Single Family residential, 220-Multi-family residential, 223-Affordable residential.

LOS Assessment Results

Table 4 summarizes the LOS assessment results for the six study intersections for the four study scenarios. The intersections would operate at LOS C or better conditions under all scenarios.

Table 4: Level of Service Assessment

			LOS ASSESSMENT STUDY SCENARIOS			
INTERSECTION	TRAFFIC CONTROL	PEAK HOUR	EXISTING	EXISTING + PROJECT	CUMULATIVE	CUMULATIVE + PROJECT
1. Redwood Hwy Frontage Road & NB 101 Ramps	Signal	AM	C, 22.9	C, 23.2	C, 24.6	C, 25.3
		PM	C, 29.7	C, 30.4	C, 32.4	C, 34.6
2. Redwood Hwy Frontage Road & SB 101 Ramps	All Way Stop	AM	B, 12.3	B, 13.4	C, 19.9	C, 23.2
		PM	B, 13.3	B, 14.8	C, 16.3	C, 19.9
3. Redwood Hwy Frontage Road & Seminary Dr.	Signal	AM	B, 11.8	B, 15.1	B, 12.2	B, 15.6
		PM	B, 11.7	C, 20.7	B, 11.9	B, 18.5
4. Tiburon Blvd & E. Strawberry Dr.	Signal	AM	C, 26.4	C, 26.7	C, 30.4	C, 30.8
		PM	C, 22.5	C, 23.0	C, 24.7	C, 25.5
5. E. Strawberry Dr. & Herring St.	All Way Stop	AM	A, 7.4	A, 7.5	A, 7.6	A, 7.6
		PM	A, 7.5	A, 7.6	A, 7.7	A, 7.8
6. Seminary Dr. & Ricardo Rd.	All Way Stop	AM	A, 9.5	B, 11.4	B, 10.5	B, 13.5
		PM	A, 9.9	B, 13.3	B, 11.1	C, 16.8

Source: Fehr & Peers.

Summary

The proposed project would add 179 net new project trips during the AM peak hour and 227 net new project trips during the PM peak hour. The majority of these net new trips would travel to and from the west via Seminary Drive to the Redwood Highway Frontage Road where access to US 101 as well as commercial uses along the frontage road including the Strawberry Village Shopping Center is provided.

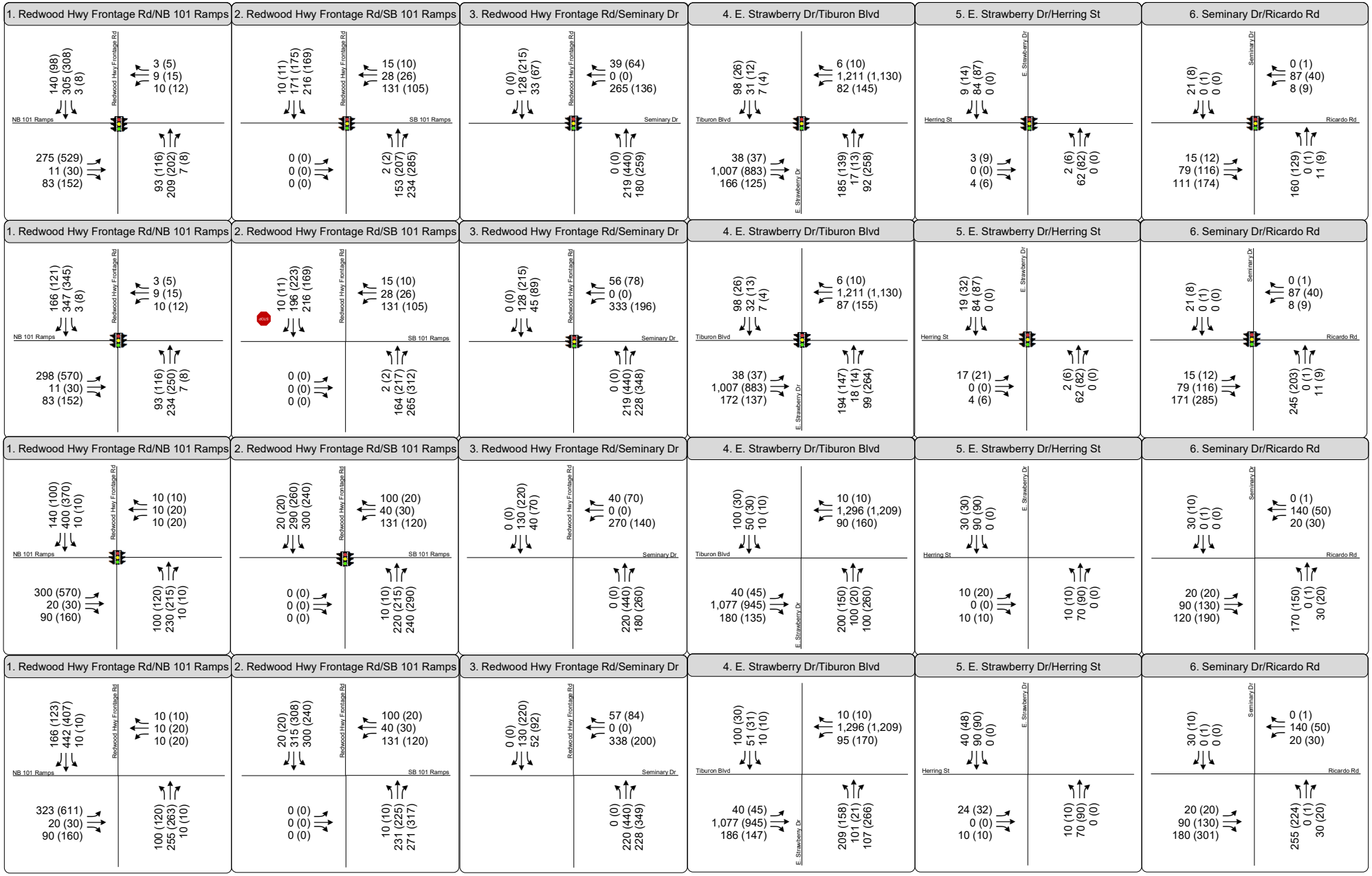
The intersections would operate at LOS C or better conditions under all scenarios, which meets the County LOS standard. No roadway or intersection changes would be required to meet the LOS standard.

ATTACHMENT A

VOLUMES AND

LEVEL OF SERVICE

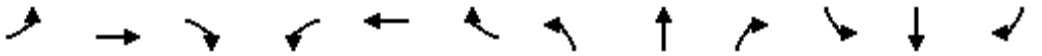
CALCULATION SHEETS



AM (PM) Volumes

Figure A-1

Peak Hour Traffic Volumes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	11	83	10	9	3	93	209	7	3	305	140
Future Volume (veh/h)	275	11	83	10	9	3	93	209	7	3	305	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	308	0	12	11	10	0	101	227	8	3	332	89
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	395	0	166	123	112	0	185	877	31	13	734	781
Arrive On Green	0.11	0.00	0.11	0.13	0.13	0.00	0.10	0.49	0.49	0.01	0.39	0.39
Sat Flow, veh/h	3563	0	1495	955	868	0	1781	1794	63	1781	1870	1542
Grp Volume(v), veh/h	308	0	12	21	0	0	101	0	235	3	332	89
Grp Sat Flow(s),veh/h/ln	1781	0	1495	1823	0	0	1781	0	1857	1781	1870	1542
Q Serve(g_s), s	6.4	0.0	0.6	0.8	0.0	0.0	4.1	0.0	5.7	0.1	10.0	2.3
Cycle Q Clear(g_c), s	6.4	0.0	0.6	0.8	0.0	0.0	4.1	0.0	5.7	0.1	10.0	2.3
Prop In Lane	1.00		1.00	0.52		0.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	395	0	166	234	0	0	185	0	908	13	734	781
V/C Ratio(X)	0.78	0.00	0.07	0.09	0.00	0.00	0.55	0.00	0.26	0.23	0.45	0.11
Avail Cap(c_a), veh/h	1398	0	587	715	0	0	699	0	908	582	734	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	0.0	30.5	29.4	0.0	0.0	32.5	0.0	11.4	37.7	17.2	10.0
Incr Delay (d2), s/veh	1.3	0.0	0.1	0.1	0.0	0.0	0.9	0.0	0.7	3.3	2.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.2	0.3	0.0	0.0	1.8	0.0	2.3	0.1	4.4	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	0.0	30.5	29.4	0.0	0.0	33.5	0.0	12.1	41.1	19.2	10.3
LnGrp LOS	C	A	C	C	A	A	C	A	B	D	B	B
Approach Vol, veh/h		320			21			336			424	
Approach Delay, s/veh		34.2			29.4			18.5			17.5	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	43.5		14.5	12.6	36.1		13.2				
Change Period (Y+Rc), s	* 4.7	* 6.1		* 4.7	* 4.7	6.1		4.7				
Max Green Setting (Gmax), s	* 25	* 30		* 30	* 30	30.0		30.0				
Max Q Clear Time (g_c+I1), s	2.1	7.7		2.8	6.1	12.0		8.4				
Green Ext Time (p_c), s	0.0	0.2		0.0	0.0	0.3		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		22.9	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

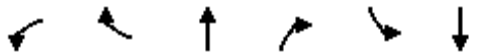
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	131	28	15	2	153	234	216	171	10
Future Vol, veh/h	0	0	0	131	28	15	2	153	234	216	171	10
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	139	30	16	2	163	249	230	182	11
Number of Lanes	0	0	0	0	1	0	0	1	0	1	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	1	0
HCM Control Delay	11.6	13.4	11.6
HCM LOS	B	B	B

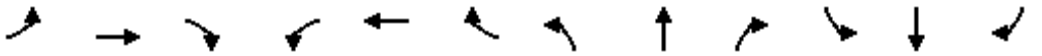
Lane	NBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	1%	75%	100%	0%
Vol Thru, %	39%	16%	0%	94%
Vol Right, %	60%	9%	0%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	389	174	216	181
LT Vol	2	131	216	0
Through Vol	153	28	0	171
RT Vol	234	15	0	10
Lane Flow Rate	414	185	230	193
Geometry Grp	5	2	7	7
Degree of Util (X)	0.542	0.307	0.387	0.295
Departure Headway (Hd)	4.824	5.967	6.062	5.517
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	753	605	597	655
Service Time	2.824	3.981	3.762	3.217
HCM Lane V/C Ratio	0.55	0.306	0.385	0.295
HCM Control Delay	13.4	11.6	12.5	10.5
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	3.3	1.3	1.8	1.2



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	265	39	219	180	33	128
Future Volume (veh/h)	265	39	219	180	33	128
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	298	19	246	168	37	144
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	367	326	568	388	58	1208
Arrive On Green	0.21	0.21	0.55	0.55	0.03	0.65
Sat Flow, veh/h	1781	1585	1033	705	1781	1870
Grp Volume(v), veh/h	298	19	0	414	37	144
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1738	1781	1870
Q Serve(g_s), s	7.5	0.5	0.0	6.7	1.0	1.4
Cycle Q Clear(g_c), s	7.5	0.5	0.0	6.7	1.0	1.4
Prop In Lane	1.00	1.00		0.41	1.00	
Lane Grp Cap(c), veh/h	367	326	0	956	58	1208
V/C Ratio(X)	0.81	0.06	0.00	0.43	0.64	0.12
Avail Cap(c_a), veh/h	678	604	0	956	490	1208
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	15.1	0.0	6.3	22.6	3.2
Incr Delay (d2), s/veh	1.7	0.0	0.0	1.4	4.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.2	0.0	1.9	0.4	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.6	15.1	0.0	7.7	26.9	3.4
LnGrp LOS	B	B	A	A	C	A
Approach Vol, veh/h	317		414			181
Approach Delay, s/veh	19.3		7.7			8.2
Approach LOS	B		A			A

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	4.5	30.0		12.7		34.5
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0
Max Green Setting (Gmax), s	13.0	26.0		18.0		19.0
Max Q Clear Time (g_c+I1), s	3.0	8.7		9.5		3.4
Green Ext Time (p_c), s	0.0	1.5		0.3		0.4

Intersection Summary	
HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	1007	166	82	1211	6	185	17	92	7	31	98
Future Volume (veh/h)	38	1007	166	82	1211	6	185	17	92	7	31	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	0.96		1.00	0.97		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	40	1071	167	87	1288	6	197	18	0	7	33	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	1396	217	325	2121	10	360	27		87	378	
Arrive On Green	0.07	0.45	0.45	0.18	0.58	0.58	0.24	0.24	0.00	0.24	0.24	0.00
Sat Flow, veh/h	1781	3071	478	1781	3627	17	1262	115	0	208	1605	0
Grp Volume(v), veh/h	40	619	619	87	631	663	215	0	0	40	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1772	1781	1777	1867	1377	0	0	1813	0	0
Q Serve(g_s), s	2.3	32.0	32.2	4.6	25.1	25.1	13.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.3	32.0	32.2	4.6	25.1	25.1	15.3	0.0	0.0	1.8	0.0	0.0
Prop In Lane	1.00		0.27	1.00		0.01	0.92		0.00	0.17		0.00
Lane Grp Cap(c), veh/h	126	808	805	325	1039	1092	387	0		465	0	
V/C Ratio(X)	0.32	0.77	0.77	0.27	0.61	0.61	0.56	0.00		0.09	0.00	
Avail Cap(c_a), veh/h	178	808	805	325	1039	1092	523	0		642	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	48.6	25.1	25.2	38.6	14.7	14.7	37.8	0.0	0.0	32.8	0.0	0.0
Incr Delay (d2), s/veh	0.5	6.8	7.0	0.2	2.6	2.5	0.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	14.0	14.0	2.0	9.7	10.1	5.3	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.1	32.0	32.1	38.8	17.3	17.2	38.3	0.0	0.0	32.9	0.0	0.0
LnGrp LOS	D	C	C	D	B	B	D	A		C	A	
Approach Vol, veh/h		1278			1381			215	A		40	A
Approach Delay, s/veh		32.6			18.6			38.3			32.9	
Approach LOS		C			B			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.1	55.0		29.9	10.8	69.3		29.9				
Change Period (Y+Rc), s	5.0	* 5		4.0	3.0	5.0		4.0				
Max Green Setting (Gmax), s	11.0	* 50		37.0	11.0	50.0		37.0				
Max Q Clear Time (g_c+I1), s	6.6	34.2		3.8	4.3	27.1		17.3				
Green Ext Time (p_c), s	0.0	1.0		0.0	0.0	0.9		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		26.4
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	4	2	62	84	9
Future Vol, veh/h	3	4	2	62	84	9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	4	2	69	93	10
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.1	7.4	7.5
HCM LOS	A	A	A

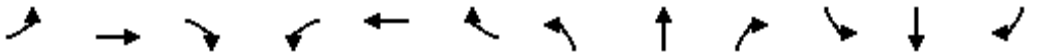
Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	3%	43%	0%
Vol Thru, %	97%	0%	90%
Vol Right, %	0%	57%	10%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	64	7	93
LT Vol	2	3	0
Through Vol	62	0	84
RT Vol	0	4	9
Lane Flow Rate	71	8	103
Geometry Grp	1	1	1
Degree of Util (X)	0.08	0.009	0.113
Departure Headway (Hd)	4.031	3.975	3.942
Convergence, Y/N	Yes	Yes	Yes
Cap	890	890	910
Service Time	2.053	2.047	1.961
HCM Lane V/C Ratio	0.08	0.009	0.113
HCM Control Delay	7.4	7.1	7.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0	0.4

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	79	111	8	87	0	160	0	11	0	0	21
Future Vol, veh/h	15	79	111	8	87	0	160	0	11	0	0	21
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	99	139	10	109	0	200	0	14	0	0	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.4	8.8	10.1	7.7
HCM LOS	A	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	94%	7%	8%	0%
Vol Thru, %	0%	39%	92%	0%
Vol Right, %	6%	54%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	171	205	95	21
LT Vol	160	15	8	0
Through Vol	0	79	87	0
RT Vol	11	111	0	21
Lane Flow Rate	214	256	119	26
Geometry Grp	1	1	1	1
Degree of Util (X)	0.294	0.311	0.16	0.033
Departure Headway (Hd)	4.958	4.375	4.844	4.471
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	722	820	737	794
Service Time	3.009	2.413	2.892	2.536
HCM Lane V/C Ratio	0.296	0.312	0.161	0.033
HCM Control Delay	10.1	9.4	8.8	7.7
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.2	1.3	0.6	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	529	30	152	12	15	5	116	202	8	8	308	98
Future Volume (veh/h)	529	30	152	12	15	5	116	202	8	8	308	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	586	0	56	13	16	0	123	215	8	9	328	63
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	658	0	293	114	141	0	175	757	28	36	646	817
Arrive On Green	0.18	0.00	0.18	0.14	0.14	0.00	0.10	0.42	0.42	0.02	0.35	0.35
Sat Flow, veh/h	3563	0	1585	820	1009	0	1781	1790	67	1781	1870	1518
Grp Volume(v), veh/h	586	0	56	29	0	0	123	0	223	9	328	63
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1829	0	0	1781	0	1856	1781	1870	1518
Q Serve(g_s), s	13.9	0.0	2.6	1.2	0.0	0.0	5.8	0.0	6.8	0.4	12.1	1.8
Cycle Q Clear(g_c), s	13.9	0.0	2.6	1.2	0.0	0.0	5.8	0.0	6.8	0.4	12.1	1.8
Prop In Lane	1.00		1.00	0.45		0.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	658	0	293	255	0	0	175	0	786	36	646	817
V/C Ratio(X)	0.89	0.00	0.19	0.11	0.00	0.00	0.70	0.00	0.28	0.25	0.51	0.08
Avail Cap(c_a), veh/h	1230	0	547	632	0	0	615	0	786	512	646	817
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	0.0	29.9	32.7	0.0	0.0	38.0	0.0	16.4	41.9	22.6	10.0
Incr Delay (d2), s/veh	1.7	0.0	0.1	0.1	0.0	0.0	1.9	0.0	0.9	1.3	2.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	1.0	0.5	0.0	0.0	2.6	0.0	2.9	0.2	5.6	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.3	0.0	30.1	32.8	0.0	0.0	39.9	0.0	17.3	43.2	25.4	10.2
LnGrp LOS	D	A	C	C	A	A	D	A	B	D	C	B
Approach Vol, veh/h		642			29			346			400	
Approach Delay, s/veh		35.7			32.8			25.3			23.4	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	42.9		16.8	13.2	36.1		20.8				
Change Period (Y+Rc), s	* 4.7	* 6.1		* 4.7	* 4.7	6.1		4.7				
Max Green Setting (Gmax), s	* 25	* 30		* 30	* 30	30.0		30.0				
Max Q Clear Time (g_c+I1), s	2.4	8.8		3.2	7.8	14.1		15.9				
Green Ext Time (p_c), s	0.0	0.2		0.0	0.0	0.3		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		29.7	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

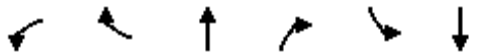
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	13.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	105	26	10	2	207	285	169	175	11
Future Vol, veh/h	0	0	0	105	26	10	2	207	285	169	175	11
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	109	27	10	2	216	297	176	182	11
Number of Lanes	0	0	0	0	1	0	0	1	0	1	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	1	0
HCM Control Delay	11	15.9	10.7
HCM LOS	B	C	B

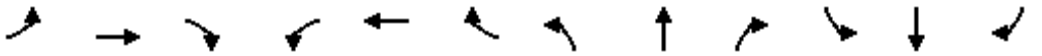
Lane	NBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	74%	100%	0%
Vol Thru, %	42%	18%	0%	94%
Vol Right, %	58%	7%	0%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	494	141	169	186
LT Vol	2	105	169	0
Through Vol	207	26	0	175
RT Vol	285	10	0	11
Lane Flow Rate	515	147	176	194
Geometry Grp	5	2	7	7
Degree of Util (X)	0.651	0.247	0.288	0.288
Departure Headway (Hd)	4.557	6.046	5.899	5.352
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	782	598	602	663
Service Time	2.635	4.046	3.697	3.15
HCM Lane V/C Ratio	0.659	0.246	0.292	0.293
HCM Control Delay	15.9	11	11.1	10.3
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	4.9	1	1.2	1.2



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	136	64	440	259	67	215
Future Volume (veh/h)	136	64	440	259	67	215
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	156	11	506	276	77	247
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	208	185	672	366	99	1351
Arrive On Green	0.12	0.12	0.60	0.60	0.06	0.72
Sat Flow, veh/h	1781	1585	1124	613	1781	1870
Grp Volume(v), veh/h	156	11	0	782	77	247
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1737	1781	1870
Q Serve(g_s), s	3.7	0.3	0.0	14.3	1.9	1.8
Cycle Q Clear(g_c), s	3.7	0.3	0.0	14.3	1.9	1.8
Prop In Lane	1.00	1.00		0.35	1.00	
Lane Grp Cap(c), veh/h	208	185	0	1038	99	1351
V/C Ratio(X)	0.75	0.06	0.00	0.75	0.78	0.18
Avail Cap(c_a), veh/h	737	656	0	1038	532	1351
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	17.1	0.0	6.4	20.3	1.9
Incr Delay (d2), s/veh	2.0	0.0	0.0	5.1	4.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.1	0.0	4.0	0.8	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.6	17.1	0.0	11.5	25.1	2.2
LnGrp LOS	C	B	A	B	C	A
Approach Vol, veh/h	167		782			324
Approach Delay, s/veh	20.4		11.5			7.7
Approach LOS	C		B			A

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	5.4	30.0		8.1		35.4
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0
Max Green Setting (Gmax), s	13.0	26.0		18.0		19.0
Max Q Clear Time (g_c+I1), s	3.9	16.3		5.7		3.8
Green Ext Time (p_c), s	0.0	2.8		0.2		0.7

Intersection Summary	
HCM 6th Ctrl Delay	11.7
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	883	125	145	1130	10	139	13	258	4	12	26
Future Volume (veh/h)	37	883	125	145	1130	10	139	13	258	4	12	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	939	123	154	1202	11	148	14	0	4	13	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	1260	165	572	2412	22	252	17		80	218	
Arrive On Green	0.07	0.40	0.40	0.32	0.67	0.67	0.14	0.14	0.00	0.14	0.14	0.00
Sat Flow, veh/h	1781	3149	412	1781	3607	33	1319	125	0	256	1572	0
Grp Volume(v), veh/h	39	530	532	154	592	621	162	0	0	17	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1785	1781	1777	1864	1444	0	0	1828	0	0
Q Serve(g_s), s	2.1	25.5	25.5	6.4	16.6	16.6	10.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.1	25.5	25.5	6.4	16.6	16.6	10.8	0.0	0.0	0.8	0.0	0.0
Prop In Lane	1.00		0.23	1.00		0.02	0.91		0.00	0.24		0.00
Lane Grp Cap(c), veh/h	130	711	714	572	1188	1246	269	0		298	0	
V/C Ratio(X)	0.30	0.75	0.75	0.27	0.50	0.50	0.60	0.00		0.06	0.00	
Avail Cap(c_a), veh/h	196	711	714	572	1188	1246	598	0		698	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	44.0	25.6	25.6	25.2	8.2	8.2	41.7	0.0	0.0	37.4	0.0	0.0
Incr Delay (d2), s/veh	0.5	7.0	7.0	0.1	1.5	1.4	0.8	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	11.3	11.3	2.6	5.5	5.7	3.9	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.4	32.6	32.6	25.3	9.7	9.7	42.5	0.0	0.0	37.5	0.0	0.0
LnGrp LOS	D	C	C	C	A	A	D	A		D	A	
Approach Vol, veh/h		1101			1367			162	A		17	A
Approach Delay, s/veh		33.0			11.5			42.5			37.5	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	37.1	45.0		17.9	10.3	71.9		17.9				
Change Period (Y+Rc), s	5.0	* 5		4.0	3.0	5.0		4.0				
Max Green Setting (Gmax), s	11.0	* 40		37.0	11.0	40.0		37.0				
Max Q Clear Time (g_c+I1), s	8.4	27.5		2.8	4.1	18.6		12.8				
Green Ext Time (p_c), s	0.0	0.8		0.0	0.0	0.9		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		22.5
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	6	6	82	87	14
Future Vol, veh/h	9	6	6	82	87	14
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	7	7	91	97	16
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.3	7.6	7.5
HCM LOS	A	A	A

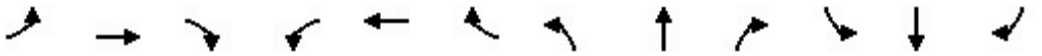
Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	7%	60%	0%
Vol Thru, %	93%	0%	86%
Vol Right, %	0%	40%	14%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	88	15	101
LT Vol	6	9	0
Through Vol	82	0	87
RT Vol	0	6	14
Lane Flow Rate	98	17	112
Geometry Grp	1	1	1
Degree of Util (X)	0.11	0.019	0.123
Departure Headway (Hd)	4.061	4.173	3.953
Convergence, Y/N	Yes	Yes	Yes
Cap	882	845	906
Service Time	2.089	2.26	1.981
HCM Lane V/C Ratio	0.111	0.02	0.124
HCM Control Delay	7.6	7.3	7.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.1	0.4

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	116	174	9	40	1	129	1	9	0	1	8
Future Vol, veh/h	12	116	174	9	40	1	129	1	9	0	1	8
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	145	218	11	50	1	161	1	11	0	1	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.4	8.3	9.7	7.7
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	93%	4%	18%	0%
Vol Thru, %	1%	38%	80%	11%
Vol Right, %	6%	58%	2%	89%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	139	302	50	9
LT Vol	129	12	9	0
Through Vol	1	116	40	1
RT Vol	9	174	1	8
Lane Flow Rate	174	378	62	11
Geometry Grp	1	1	1	1
Degree of Util (X)	0.244	0.435	0.084	0.014
Departure Headway (Hd)	5.046	4.152	4.833	4.597
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	711	868	739	774
Service Time	3.09	2.178	2.874	2.654
HCM Lane V/C Ratio	0.245	0.435	0.084	0.014
HCM Control Delay	9.7	10.4	8.3	7.7
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	1	2.2	0.3	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	298	11	83	10	9	3	93	234	7	3	347	166
Future Volume (veh/h)	298	11	83	10	9	3	93	234	7	3	347	166
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		1.00	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	333	0	12	11	10	0	101	254	8	3	377	108
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	419	0	176	122	111	0	184	874	28	13	727	786
Arrive On Green	0.12	0.00	0.12	0.13	0.13	0.00	0.10	0.48	0.48	0.01	0.39	0.39
Sat Flow, veh/h	3563	0	1500	955	868	0	1781	1802	57	1781	1870	1542
Grp Volume(v), veh/h	333	0	12	21	0	0	101	0	262	3	377	108
Grp Sat Flow(s),veh/h/ln	1781	0	1500	1823	0	0	1781	0	1859	1781	1870	1542
Q Serve(g_s), s	7.0	0.0	0.5	0.8	0.0	0.0	4.2	0.0	6.5	0.1	11.9	2.9
Cycle Q Clear(g_c), s	7.0	0.0	0.5	0.8	0.0	0.0	4.2	0.0	6.5	0.1	11.9	2.9
Prop In Lane	1.00		1.00	0.52		0.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	419	0	176	234	0	0	184	0	901	13	727	786
V/C Ratio(X)	0.79	0.00	0.07	0.09	0.00	0.00	0.55	0.00	0.29	0.23	0.52	0.14
Avail Cap(c_a), veh/h	1386	0	583	709	0	0	693	0	901	577	727	786
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	0.0	30.3	29.6	0.0	0.0	32.9	0.0	11.9	38.1	18.0	10.1
Incr Delay (d2), s/veh	1.3	0.0	0.1	0.1	0.0	0.0	0.9	0.0	0.8	3.3	2.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.2	0.3	0.0	0.0	1.8	0.0	2.6	0.1	5.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	0.0	30.3	29.7	0.0	0.0	33.8	0.0	12.7	41.4	20.7	10.5
LnGrp LOS	C	A	C	C	A	A	C	A	B	D	C	B
Approach Vol, veh/h		345			21			363			488	
Approach Delay, s/veh		34.3			29.7			18.6			18.5	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	43.5		14.6	12.7	36.1		13.8				
Change Period (Y+Rc), s	* 4.7	* 6.1		* 4.7	* 4.7	6.1		4.7				
Max Green Setting (Gmax), s	* 25	* 30		* 30	* 30	30.0		30.0				
Max Q Clear Time (g_c+I1), s	2.1	8.5		2.8	6.2	13.9		9.0				
Green Ext Time (p_c), s	0.0	0.2		0.0	0.0	0.3		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		23.2
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	131	28	15	2	164	265	216	196	10
Future Vol, veh/h	0	0	0	131	28	15	2	164	265	216	196	10
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	139	30	16	2	174	282	230	209	11
Number of Lanes	0	0	0	0	1	0	0	1	0	1	1	0

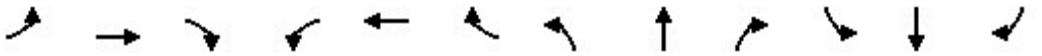
Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	1	0
HCM Control Delay	11.9	15.4	11.9
HCM LOS	B	C	B

Lane	NBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	75%	100%	0%
Vol Thru, %	38%	16%	0%	95%
Vol Right, %	61%	9%	0%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	431	174	216	206
LT Vol	2	131	216	0
Through Vol	164	28	0	196
RT Vol	265	15	0	10
Lane Flow Rate	459	185	230	219
Geometry Grp	5	2	7	7
Degree of Util (X)	0.619	0.314	0.39	0.339
Departure Headway (Hd)	4.859	6.109	6.109	5.569
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	747	589	591	646
Service Time	2.859	4.146	3.838	3.298
HCM Lane V/C Ratio	0.614	0.314	0.389	0.339
HCM Control Delay	15.4	11.9	12.7	11.1
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	4.3	1.3	1.8	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	333	56	219	228	45	128
Future Volume (veh/h)	333	56	219	228	45	128
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	374	36	246	209	51	144
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	440	391	479	407	72	1149
Arrive On Green	0.25	0.25	0.51	0.51	0.04	0.61
Sat Flow, veh/h	1781	1585	931	791	1781	1870
Grp Volume(v), veh/h	374	36	0	455	51	144
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1722	1781	1870
Q Serve(g_s), s	10.1	0.9	0.0	8.8	1.4	1.6
Cycle Q Clear(g_c), s	10.1	0.9	0.0	8.8	1.4	1.6
Prop In Lane	1.00	1.00		0.46	1.00	
Lane Grp Cap(c), veh/h	440	391	0	886	72	1149
V/C Ratio(X)	0.85	0.09	0.00	0.51	0.71	0.13
Avail Cap(c_a), veh/h	635	565	0	886	458	1149
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	14.7	0.0	8.1	23.9	4.1
Incr Delay (d2), s/veh	5.3	0.0	0.0	2.1	4.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.3	0.0	2.8	0.6	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.4	14.7	0.0	10.2	28.6	4.3
LnGrp LOS	C	B	A	B	C	A
Approach Vol, veh/h	410		455			195
Approach Delay, s/veh	22.6		10.2			10.7
Approach LOS	C		B			B

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	5.0	30.0		15.5		35.0
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0
Max Green Setting (Gmax), s	13.0	26.0		18.0		19.0
Max Q Clear Time (g_c+I1), s	3.4	10.8		12.1		3.6
Green Ext Time (p_c), s	0.0	1.7		0.4		0.4

Intersection Summary	
HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	1007	172	87	1211	6	194	18	99	7	32	98
Future Volume (veh/h)	38	1007	172	87	1211	6	194	18	99	7	32	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	0.96		1.00	0.97		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	40	1071	172	93	1288	6	206	19	0	7	34	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	1389	223	318	2106	10	365	28		87	387	
Arrive On Green	0.07	0.45	0.45	0.18	0.58	0.58	0.24	0.24	0.00	0.24	0.24	0.00
Sat Flow, veh/h	1781	3057	490	1781	3627	17	1261	116	0	202	1613	0
Grp Volume(v), veh/h	40	622	621	93	631	663	225	0	0	41	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1769	1781	1777	1867	1378	0	0	1815	0	0
Q Serve(g_s), s	2.3	32.3	32.5	5.0	25.4	25.4	14.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.3	32.3	32.5	5.0	25.4	25.4	16.1	0.0	0.0	1.9	0.0	0.0
Prop In Lane	1.00		0.28	1.00		0.01	0.92		0.00	0.17		0.00
Lane Grp Cap(c), veh/h	126	808	804	318	1032	1084	393	0		473	0	
V/C Ratio(X)	0.32	0.77	0.77	0.29	0.61	0.61	0.57	0.00		0.09	0.00	
Avail Cap(c_a), veh/h	178	808	804	318	1032	1084	524	0		643	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	48.6	25.2	25.2	39.2	15.0	15.0	37.7	0.0	0.0	32.5	0.0	0.0
Incr Delay (d2), s/veh	0.5	7.0	7.1	0.2	2.7	2.6	0.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	14.1	14.1	2.1	9.8	10.3	5.6	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.1	32.1	32.3	39.3	17.7	17.6	38.2	0.0	0.0	32.5	0.0	0.0
LnGrp LOS	D	C	C	D	B	B	D	A		C	A	
Approach Vol, veh/h		1283			1387			225			41	
Approach Delay, s/veh		32.8			19.1			38.2			32.5	
Approach LOS		C			B			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	24.6	55.0		30.4	10.8	68.9		30.4				
Change Period (Y+Rc), s	5.0	* 5		4.0	3.0	5.0		4.0				
Max Green Setting (Gmax), s	11.0	* 50		37.0	11.0	50.0		37.0				
Max Q Clear Time (g_c+I1), s	7.0	34.5		3.9	4.3	27.4		18.1				
Green Ext Time (p_c), s	0.0	1.0		0.0	0.0	0.9		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		26.7	
HCM 6th LOS		C	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	4	2	62	84	19
Future Vol, veh/h	17	4	2	62	84	19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	4	2	69	93	21
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.5	7.5	7.5
HCM LOS	A	A	A

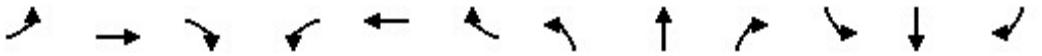
Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	3%	81%	0%
Vol Thru, %	97%	0%	82%
Vol Right, %	0%	19%	18%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	64	21	103
LT Vol	2	17	0
Through Vol	62	0	84
RT Vol	0	4	19
Lane Flow Rate	71	23	114
Geometry Grp	1	1	1
Degree of Util (X)	0.08	0.028	0.125
Departure Headway (Hd)	4.068	4.3	3.918
Convergence, Y/N	Yes	Yes	Yes
Cap	879	823	914
Service Time	2.101	2.375	1.946
HCM Lane V/C Ratio	0.081	0.028	0.125
HCM Control Delay	7.5	7.5	7.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.1	0.4

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	79	171	8	87	0	245	0	11	0	0	21
Future Vol, veh/h	15	79	171	8	87	0	245	0	11	0	0	21
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	99	214	10	109	0	306	0	14	0	0	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.1	9.5	12.7	8.2
HCM LOS	B	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	96%	6%	8%	0%
Vol Thru, %	0%	30%	92%	0%
Vol Right, %	4%	65%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	256	265	95	21
LT Vol	245	15	8	0
Through Vol	0	79	87	0
RT Vol	11	171	0	21
Lane Flow Rate	320	331	119	26
Geometry Grp	1	1	1	1
Degree of Util (X)	0.46	0.426	0.174	0.036
Departure Headway (Hd)	5.175	4.625	5.267	4.986
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	688	772	672	722
Service Time	3.269	2.701	3.366	2.986
HCM Lane V/C Ratio	0.465	0.429	0.177	0.036
HCM Control Delay	12.7	11.1	9.5	8.2
HCM Lane LOS	B	B	A	A
HCM 95th-tile Q	2.4	2.1	0.6	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	30	152	12	15	5	116	250	8	8	345	121
Future Volume (veh/h)	570	30	152	12	15	5	116	250	8	8	345	121
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	629	0	59	13	16	0	123	266	8	9	367	78
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	699	0	311	114	140	0	173	751	23	36	635	826
Arrive On Green	0.20	0.00	0.20	0.14	0.14	0.00	0.10	0.42	0.42	0.02	0.34	0.34
Sat Flow, veh/h	3563	0	1585	820	1009	0	1781	1805	54	1781	1870	1517
Grp Volume(v), veh/h	629	0	59	29	0	0	123	0	274	9	367	78
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1829	0	0	1781	0	1859	1781	1870	1517
Q Serve(g_s), s	15.2	0.0	2.7	1.2	0.0	0.0	5.9	0.0	8.9	0.4	14.2	2.2
Cycle Q Clear(g_c), s	15.2	0.0	2.7	1.2	0.0	0.0	5.9	0.0	8.9	0.4	14.2	2.2
Prop In Lane	1.00		1.00	0.45		0.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	699	0	311	254	0	0	173	0	774	36	635	826
V/C Ratio(X)	0.90	0.00	0.19	0.11	0.00	0.00	0.71	0.00	0.35	0.25	0.58	0.09
Avail Cap(c_a), veh/h	1210	0	538	621	0	0	605	0	774	504	635	826
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	0.0	29.6	33.3	0.0	0.0	38.7	0.0	17.7	42.6	24.0	10.0
Incr Delay (d2), s/veh	2.5	0.0	0.1	0.1	0.0	0.0	2.0	0.0	1.3	1.3	3.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	0.0	1.0	0.5	0.0	0.0	2.6	0.0	3.9	0.2	6.7	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.2	0.0	29.7	33.4	0.0	0.0	40.7	0.0	18.9	44.0	27.8	10.3
LnGrp LOS	D	A	C	C	A	A	D	A	B	D	C	B
Approach Vol, veh/h		688			29			397			454	
Approach Delay, s/veh		36.6			33.4			25.7			25.1	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	42.9		16.9	13.3	36.1		22.0				
Change Period (Y+Rc), s	* 4.7	* 6.1		* 4.7	* 4.7	6.1		4.7				
Max Green Setting (Gmax), s	* 25	* 30		* 30	* 30	30.0		30.0				
Max Q Clear Time (g_c+I1), s	2.4	10.9		3.2	7.9	16.2		17.2				
Green Ext Time (p_c), s	0.0	0.2		0.0	0.0	0.3		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		30.4
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	14.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	105	26	10	2	217	312	169	223	11
Future Vol, veh/h	0	0	0	105	26	10	2	217	312	169	223	11
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	109	27	10	2	226	325	176	232	11
Number of Lanes	0	0	0	0	1	0	0	1	0	1	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	1	0
HCM Control Delay	11.3	18.3	11.4
HCM LOS	B	C	B

Lane	NBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	74%	100%	0%
Vol Thru, %	41%	18%	0%	95%
Vol Right, %	59%	7%	0%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	531	141	169	234
LT Vol	2	105	169	0
Through Vol	217	26	0	223
RT Vol	312	10	0	11
Lane Flow Rate	553	147	176	244
Geometry Grp	5	2	7	7
Degree of Util (X)	0.708	0.254	0.296	0.374
Departure Headway (Hd)	4.61	6.223	6.056	5.517
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	774	579	597	656
Service Time	2.706	4.237	3.756	3.217
HCM Lane V/C Ratio	0.714	0.254	0.295	0.372
HCM Control Delay	18.3	11.3	11.3	11.5
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	6	1	1.2	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	196	78	440	348	89	215
Future Volume (veh/h)	196	78	440	348	89	215
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	225	20	506	366	102	247
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	289	258	548	397	131	1289
Arrive On Green	0.16	0.16	0.55	0.55	0.07	0.69
Sat Flow, veh/h	1781	1585	994	719	1781	1870
Grp Volume(v), veh/h	225	20	0	872	102	247
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1713	1781	1870
Q Serve(g_s), s	5.7	0.5	0.0	21.9	2.7	2.2
Cycle Q Clear(g_c), s	5.7	0.5	0.0	21.9	2.7	2.2
Prop In Lane	1.00	1.00		0.42	1.00	
Lane Grp Cap(c), veh/h	289	258	0	945	131	1289
V/C Ratio(X)	0.78	0.08	0.00	0.92	0.78	0.19
Avail Cap(c_a), veh/h	680	605	0	945	491	1289
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	16.7	0.0	9.6	21.4	2.6
Incr Delay (d2), s/veh	1.7	0.0	0.0	15.7	3.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.2	0.0	9.0	1.1	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.6	16.8	0.0	25.3	25.1	3.0
LnGrp LOS	C	B	A	C	C	A
Approach Vol, veh/h	245		872			349
Approach Delay, s/veh	20.3		25.3			9.4
Approach LOS	C		C			A
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.5	30.0		10.7		36.5
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0
Max Green Setting (Gmax), s	13.0	26.0		18.0		19.0
Max Q Clear Time (g_c+I1), s	4.7	23.9		7.7		4.2
Green Ext Time (p_c), s	0.1	1.0		0.3		0.7
Intersection Summary						
HCM 6th Ctrl Delay			20.7			
HCM 6th LOS			C			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	883	137	155	1130	10	147	14	264	4	13	26
Future Volume (veh/h)	37	883	137	155	1130	10	147	14	264	4	13	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	939	135	165	1202	11	156	15	0	4	14	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	1243	179	561	2389	22	260	18		79	231	
Arrive On Green	0.07	0.40	0.40	0.32	0.66	0.66	0.14	0.14	0.00	0.14	0.14	0.00
Sat Flow, veh/h	1781	3108	447	1781	3607	33	1317	127	0	239	1592	0
Grp Volume(v), veh/h	39	537	537	165	592	621	171	0	0	18	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1778	1781	1777	1864	1444	0	0	1831	0	0
Q Serve(g_s), s	2.1	26.0	26.0	7.0	16.9	16.9	10.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.1	26.0	26.0	7.0	16.9	16.9	11.4	0.0	0.0	0.8	0.0	0.0
Prop In Lane	1.00		0.25	1.00		0.02	0.91		0.00	0.22		0.00
Lane Grp Cap(c), veh/h	130	711	711	561	1177	1234	278	0		309	0	
V/C Ratio(X)	0.30	0.76	0.76	0.29	0.50	0.50	0.62	0.00		0.06	0.00	
Avail Cap(c_a), veh/h	196	711	711	561	1177	1234	598	0		701	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	44.0	25.8	25.8	25.8	8.5	8.5	41.4	0.0	0.0	36.9	0.0	0.0
Incr Delay (d2), s/veh	0.5	7.3	7.3	0.1	1.5	1.5	0.8	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	11.5	11.5	2.8	5.7	5.9	4.2	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.4	33.1	33.1	26.0	10.1	10.0	42.2	0.0	0.0	36.9	0.0	0.0
LnGrp LOS	D	C	C	C	B	B	D	A		D	A	
Approach Vol, veh/h		1113			1378			171			18	
Approach Delay, s/veh		33.5			12.0			42.2			36.9	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	36.5	45.0		18.5	10.3	71.2		18.5				
Change Period (Y+Rc), s	5.0	* 5		4.0	3.0	5.0		4.0				
Max Green Setting (Gmax), s	11.0	* 40		37.0	11.0	40.0		37.0				
Max Q Clear Time (g_c+I1), s	9.0	28.0		2.8	4.1	18.9		13.4				
Green Ext Time (p_c), s	0.0	0.8		0.0	0.0	0.9		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		23.0
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	6	6	82	87	32
Future Vol, veh/h	21	6	6	82	87	32
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	7	7	91	97	36
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.6	7.7	7.6
HCM LOS	A	A	A

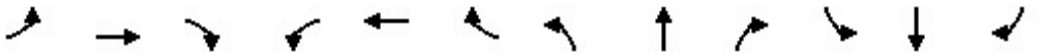
Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	7%	78%	0%
Vol Thru, %	93%	0%	73%
Vol Right, %	0%	22%	27%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	88	27	119
LT Vol	6	21	0
Through Vol	82	0	87
RT Vol	0	6	32
Lane Flow Rate	98	30	132
Geometry Grp	1	1	1
Degree of Util (X)	0.111	0.036	0.143
Departure Headway (Hd)	4.101	4.35	3.899
Convergence, Y/N	Yes	Yes	Yes
Cap	871	811	916
Service Time	2.14	2.442	1.938
HCM Lane V/C Ratio	0.113	0.037	0.144
HCM Control Delay	7.7	7.6	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.1	0.5

Intersection	
Intersection Delay, s/veh	13.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	116	285	9	40	1	203	1	9	0	1	8
Future Vol, veh/h	12	116	285	9	40	1	203	1	9	0	1	8
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	145	356	11	50	1	254	1	11	0	1	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	14.6	9	12.1	8.3
HCM LOS	B	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	95%	3%	18%	0%
Vol Thru, %	0%	28%	80%	11%
Vol Right, %	4%	69%	2%	89%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	213	413	50	9
LT Vol	203	12	9	0
Through Vol	1	116	40	1
RT Vol	9	285	1	8
Lane Flow Rate	266	516	62	11
Geometry Grp	1	1	1	1
Degree of Util (X)	0.399	0.627	0.092	0.016
Departure Headway (Hd)	5.392	4.373	5.311	5.241
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	660	821	667	687
Service Time	3.49	2.426	3.407	3.241
HCM Lane V/C Ratio	0.403	0.629	0.093	0.016
HCM Control Delay	12.1	14.6	9	8.3
HCM Lane LOS	B	B	A	A
HCM 95th-tile Q	1.9	4.5	0.3	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	20	90	10	10	10	100	230	10	10	400	140
Future Volume (veh/h)	300	20	90	10	10	10	100	230	10	10	400	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.94	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	342	0	13	11	11	1	109	250	10	11	435	97
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	427	0	180	114	114	10	186	830	33	44	720	784
Arrive On Green	0.12	0.00	0.12	0.13	0.13	0.13	0.10	0.46	0.46	0.02	0.38	0.38
Sat Flow, veh/h	3563	0	1502	864	864	79	1781	1784	71	1781	1870	1542
Grp Volume(v), veh/h	342	0	13	23	0	0	109	0	260	11	435	97
Grp Sat Flow(s),veh/h/ln	1781	0	1502	1807	0	0	1781	0	1856	1781	1870	1542
Q Serve(g_s), s	7.3	0.0	0.6	0.9	0.0	0.0	4.5	0.0	6.8	0.5	14.5	2.6
Cycle Q Clear(g_c), s	7.3	0.0	0.6	0.9	0.0	0.0	4.5	0.0	6.8	0.5	14.5	2.6
Prop In Lane	1.00		1.00	0.48		0.04	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	427	0	180	238	0	0	186	0	863	44	720	784
V/C Ratio(X)	0.80	0.00	0.07	0.10	0.00	0.00	0.59	0.00	0.30	0.25	0.60	0.12
Avail Cap(c_a), veh/h	1371	0	578	695	0	0	686	0	863	571	720	784
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.4	0.0	30.5	29.8	0.0	0.0	33.3	0.0	13.0	37.3	19.2	10.2
Incr Delay (d2), s/veh	1.3	0.0	0.1	0.1	0.0	0.0	1.1	0.0	0.9	1.1	3.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.2	0.4	0.0	0.0	1.9	0.0	2.8	0.2	6.5	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.7	0.0	30.5	29.8	0.0	0.0	34.4	0.0	13.9	38.4	23.0	10.5
LnGrp LOS	C	A	C	C	A	A	C	A	B	D	C	B
Approach Vol, veh/h		355			23			369			543	
Approach Delay, s/veh		34.6			29.8			19.9			21.0	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	42.3		15.0	12.9	36.1		14.0				
Change Period (Y+Rc), s	* 4.7	* 6.1		* 4.7	* 4.7	6.1		4.7				
Max Green Setting (Gmax), s	* 25	* 30		* 30	* 30	30.0		30.0				
Max Q Clear Time (g_c+I1), s	2.5	8.8		2.9	6.5	16.5		9.3				
Green Ext Time (p_c), s	0.0	0.2		0.0	0.0	0.4		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		24.6
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	19.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	131	40	100	10	220	240	300	290	20
Future Vol, veh/h	0	0	0	131	40	100	10	220	240	300	290	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	139	43	106	11	234	255	319	309	21
Number of Lanes	0	0	0	0	1	0	0	1	0	1	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	1	0
HCM Control Delay	16.1	24.9	17.7
HCM LOS	C	C	C

Lane	NBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	2%	48%	100%	0%
Vol Thru, %	47%	15%	0%	94%
Vol Right, %	51%	37%	0%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	470	271	300	310
LT Vol	10	131	300	0
Through Vol	220	40	0	290
RT Vol	240	100	0	20
Lane Flow Rate	500	288	319	330
Geometry Grp	5	2	7	7
Degree of Util (X)	0.771	0.514	0.594	0.563
Departure Headway (Hd)	5.554	6.417	6.7	6.145
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	650	559	536	584
Service Time	3.612	4.479	4.467	3.912
HCM Lane V/C Ratio	0.769	0.515	0.595	0.565
HCM Control Delay	24.9	16.1	18.9	16.6
HCM Lane LOS	C	C	C	C
HCM 95th-tile Q	7.2	2.9	3.8	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	270	40	220	180	40	130
Future Volume (veh/h)	270	40	220	180	40	130
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	303	20	247	167	45	146
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	371	331	565	382	67	1206
Arrive On Green	0.21	0.21	0.54	0.54	0.04	0.64
Sat Flow, veh/h	1781	1585	1037	701	1781	1870
Grp Volume(v), veh/h	303	20	0	414	45	146
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1739	1781	1870
Q Serve(g_s), s	7.7	0.5	0.0	6.8	1.2	1.4
Cycle Q Clear(g_c), s	7.7	0.5	0.0	6.8	1.2	1.4
Prop In Lane	1.00	1.00		0.40	1.00	
Lane Grp Cap(c), veh/h	371	331	0	947	67	1206
V/C Ratio(X)	0.82	0.06	0.00	0.44	0.67	0.12
Avail Cap(c_a), veh/h	671	597	0	947	485	1206
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.0	15.1	0.0	6.5	22.7	3.3
Incr Delay (d2), s/veh	1.7	0.0	0.0	1.5	4.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.2	0.0	2.0	0.5	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.7	15.2	0.0	8.0	27.0	3.5
LnGrp LOS	B	B	A	A	C	A
Approach Vol, veh/h	323		414			191
Approach Delay, s/veh	19.4		8.0			9.0
Approach LOS	B		A			A

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	4.8	30.0		13.0		34.8
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0
Max Green Setting (Gmax), s	13.0	26.0		18.0		19.0
Max Q Clear Time (g_c+I1), s	3.2	8.8		9.7		3.4
Green Ext Time (p_c), s	0.0	1.5		0.4		0.4

Intersection Summary						
HCM 6th Ctrl Delay			12.2			
HCM 6th LOS			B			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1077	180	90	1296	10	200	100	100	10	50	100
Future Volume (veh/h)	40	1077	180	90	1296	10	200	100	100	10	50	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	0.96		1.00	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	1146	179	96	1379	10	213	106	0	11	53	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	1396	217	264	1980	14	321	133		94	422	
Arrive On Green	0.07	0.45	0.45	0.15	0.55	0.55	0.27	0.27	0.00	0.27	0.27	0.00
Sat Flow, veh/h	1781	3071	478	1781	3616	26	988	492	0	206	1562	0
Grp Volume(v), veh/h	43	661	664	96	677	712	319	0	0	64	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1772	1781	1777	1866	1480	0	0	1768	0	0
Q Serve(g_s), s	2.5	35.6	35.9	5.3	30.7	30.7	19.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.5	35.6	35.9	5.3	30.7	30.7	21.9	0.0	0.0	2.8	0.0	0.0
Prop In Lane	1.00		0.27	1.00		0.01	0.67		0.00	0.17		0.00
Lane Grp Cap(c), veh/h	130	808	805	264	973	1022	454	0		516	0	
V/C Ratio(X)	0.33	0.82	0.82	0.36	0.70	0.70	0.70	0.00		0.12	0.00	
Avail Cap(c_a), veh/h	178	808	805	264	973	1022	550	0		630	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	48.4	26.1	26.2	42.2	18.2	18.2	37.0	0.0	0.0	30.3	0.0	0.0
Incr Delay (d2), s/veh	0.5	9.1	9.4	0.3	4.1	3.9	2.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	15.8	16.0	2.3	12.3	12.9	8.2	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.0	35.1	35.5	42.5	22.3	22.1	39.1	0.0	0.0	30.4	0.0	0.0
LnGrp LOS	D	D	D	D	C	C	D	A		C	A	
Approach Vol, veh/h		1368			1485			319			64	
Approach Delay, s/veh		35.8			23.5			39.1			30.4	
Approach LOS		D			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	21.3	55.0		33.7	11.0	65.2		33.7				
Change Period (Y+Rc), s	5.0	* 5		4.0	3.0	5.0		4.0				
Max Green Setting (Gmax), s	11.0	* 50		37.0	11.0	50.0		37.0				
Max Q Clear Time (g_c+I1), s	7.3	37.9		4.8	4.5	32.7		23.9				
Green Ext Time (p_c), s	0.0	1.0		0.1	0.0	1.0		0.4				

Intersection Summary		
HCM 6th Ctrl Delay		30.4
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	10	10	70	90	30
Future Vol, veh/h	10	10	10	70	90	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	11	11	78	100	33
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.3	7.6	7.6
HCM LOS	A	A	A

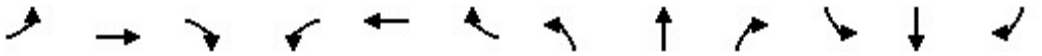
Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	12%	50%	0%
Vol Thru, %	88%	0%	75%
Vol Right, %	0%	50%	25%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	80	20	120
LT Vol	10	10	0
Through Vol	70	0	90
RT Vol	0	10	30
Lane Flow Rate	89	22	133
Geometry Grp	1	1	1
Degree of Util (X)	0.101	0.025	0.144
Departure Headway (Hd)	4.099	4.114	3.89
Convergence, Y/N	Yes	Yes	Yes
Cap	873	857	921
Service Time	2.13	2.202	1.918
HCM Lane V/C Ratio	0.102	0.026	0.144
HCM Control Delay	7.6	7.3	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.1	0.5

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	90	120	20	140	0	170	0	30	0	0	30
Future Vol, veh/h	20	90	120	20	140	0	170	0	30	0	0	30
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	113	150	25	175	0	213	0	38	0	0	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.5	10.1	11.2	8.2
HCM LOS	B	B	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	85%	9%	12%	0%
Vol Thru, %	0%	39%	88%	0%
Vol Right, %	15%	52%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	200	230	160	30
LT Vol	170	20	20	0
Through Vol	0	90	140	0
RT Vol	30	120	0	30
Lane Flow Rate	250	288	200	38
Geometry Grp	1	1	1	1
Degree of Util (X)	0.361	0.371	0.281	0.052
Departure Headway (Hd)	5.192	4.643	5.05	4.971
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	685	768	704	725
Service Time	3.285	2.722	3.139	2.971
HCM Lane V/C Ratio	0.365	0.375	0.284	0.052
HCM Control Delay	11.2	10.5	10.1	8.2
HCM Lane LOS	B	B	B	A
HCM 95th-tile Q	1.6	1.7	1.2	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	30	160	20	20	10	120	215	10	10	370	100
Future Volume (veh/h)	570	30	160	20	20	10	120	215	10	10	370	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.93	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	629	0	67	21	21	2	128	229	10	11	394	65
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	698	0	310	133	133	13	170	716	31	43	620	813
Arrive On Green	0.20	0.00	0.20	0.15	0.15	0.15	0.10	0.40	0.40	0.02	0.33	0.33
Sat Flow, veh/h	3563	0	1585	862	862	82	1781	1776	78	1781	1870	1516
Grp Volume(v), veh/h	629	0	67	44	0	0	128	0	239	11	394	65
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1805	0	0	1781	0	1854	1781	1870	1516
Q Serve(g_s), s	15.6	0.0	3.2	1.9	0.0	0.0	6.3	0.0	8.0	0.5	16.1	1.9
Cycle Q Clear(g_c), s	15.6	0.0	3.2	1.9	0.0	0.0	6.3	0.0	8.0	0.5	16.1	1.9
Prop In Lane	1.00		1.00	0.48		0.05	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	698	0	310	278	0	0	170	0	747	43	620	813
V/C Ratio(X)	0.90	0.00	0.22	0.16	0.00	0.00	0.75	0.00	0.32	0.26	0.64	0.08
Avail Cap(c_a), veh/h	1181	0	525	598	0	0	591	0	747	492	620	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	0.0	30.6	33.2	0.0	0.0	39.9	0.0	18.5	43.4	25.6	10.6
Incr Delay (d2), s/veh	3.1	0.0	0.1	0.1	0.0	0.0	2.5	0.0	1.1	1.2	4.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.0	1.2	0.8	0.0	0.0	2.8	0.0	3.5	0.3	7.7	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.6	0.0	30.7	33.3	0.0	0.0	42.4	0.0	19.6	44.5	30.5	10.8
LnGrp LOS	D	A	C	C	A	A	D	A	B	D	C	B
Approach Vol, veh/h		696			44			367			470	
Approach Delay, s/veh		37.9			33.3			27.6			28.1	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	42.6		18.6	13.3	36.1		22.4				
Change Period (Y+Rc), s	* 4.7	* 6.1		* 4.7	* 4.7	6.1		4.7				
Max Green Setting (Gmax), s	* 25	* 30		* 30	* 30	30.0		30.0				
Max Q Clear Time (g_c+I1), s	2.5	10.0		3.9	8.3	18.1		17.6				
Green Ext Time (p_c), s	0.0	0.2		0.0	0.0	0.3		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		32.4	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	16.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	120	30	20	10	215	290	240	260	20
Future Vol, veh/h	0	0	0	120	30	20	10	215	290	240	260	20
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	125	31	21	10	224	302	250	271	21
Number of Lanes	0	0	0	0	1	0	0	1	0	1	1	0

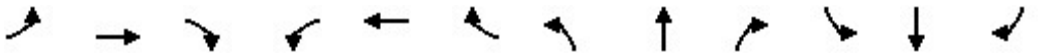
Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	1	0
HCM Control Delay	12.4	20.7	13.3
HCM LOS	B	C	B

Lane	NBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	2%	71%	100%	0%
Vol Thru, %	42%	18%	0%	93%
Vol Right, %	56%	12%	0%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	515	170	240	280
LT Vol	10	120	240	0
Through Vol	215	30	0	260
RT Vol	290	20	0	20
Lane Flow Rate	536	177	250	292
Geometry Grp	5	2	7	7
Degree of Util (X)	0.739	0.315	0.431	0.457
Departure Headway (Hd)	4.958	6.402	6.201	5.643
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	730	561	583	639
Service Time	2.986	4.442	3.933	3.376
HCM Lane V/C Ratio	0.734	0.316	0.429	0.457
HCM Control Delay	20.7	12.4	13.6	13.1
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	6.6	1.3	2.2	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	140	70	440	260	70	220
Future Volume (veh/h)	140	70	440	260	70	220
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	161	12	506	277	80	253
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	215	191	667	365	101	1346
Arrive On Green	0.12	0.12	0.59	0.59	0.06	0.72
Sat Flow, veh/h	1781	1585	1122	614	1781	1870
Grp Volume(v), veh/h	161	12	0	783	80	253
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1737	1781	1870
Q Serve(g_s), s	3.8	0.3	0.0	14.6	1.9	1.9
Cycle Q Clear(g_c), s	3.8	0.3	0.0	14.6	1.9	1.9
Prop In Lane	1.00	1.00		0.35	1.00	
Lane Grp Cap(c), veh/h	215	191	0	1032	101	1346
V/C Ratio(X)	0.75	0.06	0.00	0.76	0.79	0.19
Avail Cap(c_a), veh/h	733	652	0	1032	529	1346
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	17.1	0.0	6.6	20.4	2.0
Incr Delay (d2), s/veh	2.0	0.1	0.0	5.2	5.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.1	0.0	4.1	0.8	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.6	17.1	0.0	11.8	25.5	2.3
LnGrp LOS	C	B	A	B	C	A
Approach Vol, veh/h	173		783			333
Approach Delay, s/veh	20.3		11.8			7.9
Approach LOS	C		B			A

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	5.5	30.0		8.3		35.5
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0
Max Green Setting (Gmax), s	13.0	26.0		18.0		19.0
Max Q Clear Time (g_c+I1), s	3.9	16.6		5.8		3.9
Green Ext Time (p_c), s	0.0	2.7		0.2		0.7

Intersection Summary	
HCM 6th Ctrl Delay	11.9
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	945	135	160	1209	10	150	20	260	10	30	30
Future Volume (veh/h)	45	945	135	160	1209	10	150	20	260	10	30	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	1005	134	170	1286	11	160	21	0	11	32	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	1257	167	553	2344	20	261	25		90	227	
Arrive On Green	0.08	0.40	0.40	0.31	0.65	0.65	0.15	0.15	0.00	0.15	0.15	0.00
Sat Flow, veh/h	1781	3142	419	1781	3610	31	1293	170	0	299	1516	0
Grp Volume(v), veh/h	48	568	571	170	633	664	181	0	0	43	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1784	1781	1777	1864	1463	0	0	1815	0	0
Q Serve(g_s), s	2.5	28.2	28.3	7.3	19.4	19.4	9.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.5	28.2	28.3	7.3	19.4	19.4	11.9	0.0	0.0	2.0	0.0	0.0
Prop In Lane	1.00		0.23	1.00		0.02	0.88		0.00	0.26		0.00
Lane Grp Cap(c), veh/h	144	711	713	553	1154	1210	287	0		317	0	
V/C Ratio(X)	0.33	0.80	0.80	0.31	0.55	0.55	0.63	0.00		0.14	0.00	
Avail Cap(c_a), veh/h	196	711	713	553	1154	1210	598	0		695	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	43.4	26.5	26.5	26.3	9.5	9.5	41.0	0.0	0.0	37.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	9.2	9.2	0.1	1.9	1.8	0.9	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	12.7	12.8	2.9	6.7	7.0	4.4	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	35.6	35.7	26.4	11.4	11.3	41.9	0.0	0.0	37.1	0.0	0.0
LnGrp LOS	D	D	D	C	B	B	D	A		D	A	
Approach Vol, veh/h		1187			1467			181			43	
Approach Delay, s/veh		36.0			13.1			41.9			37.1	
Approach LOS		D			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	36.0	45.0		19.0	11.1	69.9		19.0				
Change Period (Y+Rc), s	5.0	* 5		4.0	3.0	5.0		4.0				
Max Green Setting (Gmax), s	11.0	* 40		37.0	11.0	40.0		37.0				
Max Q Clear Time (g_c+I1), s	9.3	30.3		4.0	4.5	21.4		13.9				
Green Ext Time (p_c), s	0.0	0.8		0.0	0.0	1.0		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		24.7
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	10	10	90	90	30
Future Vol, veh/h	20	10	10	90	90	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	11	11	100	100	33
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.6	7.8	7.6
HCM LOS	A	A	A

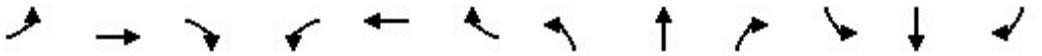
Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	10%	67%	0%
Vol Thru, %	90%	0%	75%
Vol Right, %	0%	33%	25%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	100	30	120
LT Vol	10	20	0
Through Vol	90	0	90
RT Vol	0	10	30
Lane Flow Rate	111	33	133
Geometry Grp	1	1	1
Degree of Util (X)	0.127	0.041	0.145
Departure Headway (Hd)	4.114	4.386	3.927
Convergence, Y/N	Yes	Yes	Yes
Cap	868	821	908
Service Time	2.158	2.386	1.973
HCM Lane V/C Ratio	0.128	0.04	0.146
HCM Control Delay	7.8	7.6	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.1	0.5

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	130	190	30	50	1	150	1	20	0	1	10
Future Vol, veh/h	20	130	190	30	50	1	150	1	20	0	1	10
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	163	238	38	63	1	188	1	25	0	1	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.9	9	10.7	8.1
HCM LOS	B	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	88%	6%	37%	0%
Vol Thru, %	1%	38%	62%	9%
Vol Right, %	12%	56%	1%	91%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	171	340	81	11
LT Vol	150	20	30	0
Through Vol	1	130	50	1
RT Vol	20	190	1	10
Lane Flow Rate	214	425	101	14
Geometry Grp	1	1	1	1
Degree of Util (X)	0.31	0.513	0.143	0.019
Departure Headway (Hd)	5.222	4.344	5.077	4.985
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	682	825	701	722
Service Time	3.299	2.39	3.146	2.985
HCM Lane V/C Ratio	0.314	0.515	0.144	0.019
HCM Control Delay	10.7	11.9	9	8.1
HCM Lane LOS	B	B	A	A
HCM 95th-tile Q	1.3	3	0.5	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	323	20	90	10	10	10	100	255	10	10	442	166
Future Volume (veh/h)	323	20	90	10	10	10	100	255	10	10	442	166
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.94	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	367	0	14	11	11	1	109	277	11	11	480	122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	451	0	191	113	113	10	185	823	33	44	714	789
Arrive On Green	0.13	0.00	0.13	0.13	0.13	0.13	0.10	0.46	0.46	0.02	0.38	0.38
Sat Flow, veh/h	3563	0	1506	864	864	79	1781	1785	71	1781	1870	1542
Grp Volume(v), veh/h	367	0	14	23	0	0	109	0	288	11	480	122
Grp Sat Flow(s),veh/h/ln	1781	0	1506	1807	0	0	1781	0	1856	1781	1870	1542
Q Serve(g_s), s	7.9	0.0	0.6	0.9	0.0	0.0	4.6	0.0	7.8	0.5	16.8	3.3
Cycle Q Clear(g_c), s	7.9	0.0	0.6	0.9	0.0	0.0	4.6	0.0	7.8	0.5	16.8	3.3
Prop In Lane	1.00		1.00	0.48		0.04	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	451	0	191	237	0	0	185	0	855	44	714	789
V/C Ratio(X)	0.81	0.00	0.07	0.10	0.00	0.00	0.59	0.00	0.34	0.25	0.67	0.15
Avail Cap(c_a), veh/h	1359	0	575	689	0	0	680	0	855	566	714	789
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.4	0.0	30.3	30.1	0.0	0.0	33.6	0.0	13.5	37.7	20.2	10.3
Incr Delay (d2), s/veh	1.4	0.0	0.1	0.1	0.0	0.0	1.1	0.0	1.1	1.1	5.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	0.2	0.4	0.0	0.0	2.0	0.0	3.2	0.2	7.7	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.8	0.0	30.3	30.1	0.0	0.0	34.7	0.0	14.6	38.8	25.2	10.8
LnGrp LOS	C	A	C	C	A	A	C	A	B	D	C	B
Approach Vol, veh/h		381			23			397			613	
Approach Delay, s/veh		34.7			30.1			20.1			22.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	42.3		15.0	12.9	36.1		14.6				
Change Period (Y+Rc), s	* 4.7	* 6.1		* 4.7	* 4.7	6.1		4.7				
Max Green Setting (Gmax), s	* 25	* 30		* 30	* 30	30.0		30.0				
Max Q Clear Time (g_c+I1), s	2.5	9.8		2.9	6.6	18.8		9.9				
Green Ext Time (p_c), s	0.0	0.2		0.0	0.0	0.4		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		25.3
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	23.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	131	40	100	10	231	271	300	315	20
Future Vol, veh/h	0	0	0	131	40	100	10	231	271	300	315	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	139	43	106	11	246	288	319	335	21
Number of Lanes	0	0	0	0	1	0	0	1	0	1	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	1	0
HCM Control Delay	16.7	31.9	19
HCM LOS	C	D	C

Lane	NBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	2%	48%	100%	0%
Vol Thru, %	45%	15%	0%	94%
Vol Right, %	53%	37%	0%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	512	271	300	335
LT Vol	10	131	300	0
Through Vol	231	40	0	315
RT Vol	271	100	0	20
Lane Flow Rate	545	288	319	356
Geometry Grp	5	2	7	7
Degree of Util (X)	0.846	0.525	0.602	0.618
Departure Headway (Hd)	5.591	6.552	6.79	6.238
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	643	548	530	577
Service Time	3.653	4.62	4.565	4.012
HCM Lane V/C Ratio	0.848	0.526	0.602	0.617
HCM Control Delay	31.9	16.7	19.4	18.7
HCM Lane LOS	D	C	C	C
HCM 95th-tile Q	9.3	3	3.9	4.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	338	57	220	228	52	130
Future Volume (veh/h)	338	57	220	228	52	130
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	380	37	247	208	58	146
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	445	396	477	402	78	1146
Arrive On Green	0.25	0.25	0.51	0.51	0.04	0.61
Sat Flow, veh/h	1781	1585	935	787	1781	1870
Grp Volume(v), veh/h	380	37	0	455	58	146
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1722	1781	1870
Q Serve(g_s), s	10.4	0.9	0.0	9.0	1.6	1.7
Cycle Q Clear(g_c), s	10.4	0.9	0.0	9.0	1.6	1.7
Prop In Lane	1.00	1.00		0.46	1.00	
Lane Grp Cap(c), veh/h	445	396	0	878	78	1146
V/C Ratio(X)	0.85	0.09	0.00	0.52	0.74	0.13
Avail Cap(c_a), veh/h	629	560	0	878	454	1146
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.2	14.7	0.0	8.3	24.1	4.1
Incr Delay (d2), s/veh	5.9	0.0	0.0	2.2	5.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.3	0.0	2.9	0.7	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.1	14.7	0.0	10.5	29.1	4.4
LnGrp LOS	C	B	A	B	C	A
Approach Vol, veh/h	417		455			204
Approach Delay, s/veh	23.3		10.5			11.4
Approach LOS	C		B			B

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	5.2	30.0		15.7		35.2
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0
Max Green Setting (Gmax), s	13.0	26.0		18.0		19.0
Max Q Clear Time (g_c+I1), s	3.6	11.0		12.4		3.7
Green Ext Time (p_c), s	0.0	1.7		0.4		0.4

Intersection Summary			
HCM 6th Ctrl Delay		15.6	
HCM 6th LOS		B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1077	186	95	1296	10	209	101	107	10	51	100
Future Volume (veh/h)	40	1077	186	95	1296	10	209	101	107	10	51	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	0.97		1.00	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	1146	185	101	1379	10	222	107	0	11	54	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	1389	223	256	1965	14	328	132		94	430	
Arrive On Green	0.07	0.45	0.45	0.14	0.54	0.54	0.27	0.27	0.00	0.27	0.27	0.00
Sat Flow, veh/h	1781	3055	491	1781	3616	26	996	480	0	203	1568	0
Grp Volume(v), veh/h	43	664	667	101	677	712	329	0	0	65	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1769	1781	1777	1866	1476	0	0	1771	0	0
Q Serve(g_s), s	2.5	35.8	36.3	5.7	31.0	31.0	19.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.5	35.8	36.3	5.7	31.0	31.0	22.7	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.28	1.00		0.01	0.67		0.00	0.17		0.00
Lane Grp Cap(c), veh/h	130	808	804	256	965	1014	460	0		524	0	
V/C Ratio(X)	0.33	0.82	0.83	0.39	0.70	0.70	0.72	0.00		0.12	0.00	
Avail Cap(c_a), veh/h	178	808	804	256	965	1014	549	0		631	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	48.4	26.1	26.3	42.8	18.5	18.5	36.9	0.0	0.0	30.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	9.3	9.6	0.4	4.3	4.1	2.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	16.0	16.2	2.4	12.5	13.1	8.6	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.0	35.4	35.9	43.1	22.8	22.6	39.5	0.0	0.0	30.0	0.0	0.0
LnGrp LOS	D	D	D	D	C	C	D	A		C	A	
Approach Vol, veh/h		1374			1490			329			65	
Approach Delay, s/veh		36.1			24.1			39.5			30.0	
Approach LOS		D			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.8	55.0		34.2	11.0	64.8		34.2				
Change Period (Y+Rc), s	5.0	* 5		4.0	3.0	5.0		4.0				
Max Green Setting (Gmax), s	11.0	* 50		37.0	11.0	50.0		37.0				
Max Q Clear Time (g_c+I1), s	7.7	38.3		4.9	4.5	33.0		24.7				
Green Ext Time (p_c), s	0.0	1.0		0.1	0.0	1.0		0.4				

Intersection Summary		
HCM 6th Ctrl Delay		30.8
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	10	10	70	90	40
Future Vol, veh/h	24	10	10	70	90	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	11	11	78	100	44
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.6	7.7	7.6
HCM LOS	A	A	A

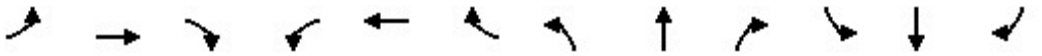
Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	12%	71%	0%
Vol Thru, %	88%	0%	69%
Vol Right, %	0%	29%	31%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	80	34	130
LT Vol	10	24	0
Through Vol	70	0	90
RT Vol	0	10	40
Lane Flow Rate	89	38	144
Geometry Grp	1	1	1
Degree of Util (X)	0.102	0.045	0.156
Departure Headway (Hd)	4.135	4.296	3.883
Convergence, Y/N	Yes	Yes	Yes
Cap	862	820	919
Service Time	2.181	2.392	1.925
HCM Lane V/C Ratio	0.103	0.046	0.157
HCM Control Delay	7.7	7.6	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.1	0.6

Intersection	
Intersection Delay, s/veh	13.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	20	90	180	20	140	0	255	0	30	0	0	30
Future Vol, veh/h	20	90	180	20	140	0	255	0	30	0	0	30
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	113	225	25	175	0	319	0	38	0	0	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.3	11.3	15.4	8.9
HCM LOS	B	B	C	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	89%	7%	12%	0%
Vol Thru, %	0%	31%	88%	0%
Vol Right, %	11%	62%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	285	290	160	30
LT Vol	255	20	20	0
Through Vol	0	90	140	0
RT Vol	30	180	0	30
Lane Flow Rate	356	362	200	38
Geometry Grp	1	1	1	1
Degree of Util (X)	0.553	0.509	0.314	0.057
Departure Headway (Hd)	5.592	5.055	5.657	5.504
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	645	711	634	647
Service Time	3.631	3.099	3.709	3.569
HCM Lane V/C Ratio	0.552	0.509	0.315	0.059
HCM Control Delay	15.4	13.3	11.3	8.9
HCM Lane LOS	C	B	B	A
HCM 95th-tile Q	3.4	2.9	1.3	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	611	30	160	20	20	10	120	263	10	10	407	123
Future Volume (veh/h)	611	30	160	20	20	10	120	263	10	10	407	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.93	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	688	0	73	22	22	3	130	286	10	11	442	88
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	754	0	325	129	129	18	167	706	25	43	606	834
Arrive On Green	0.21	0.00	0.21	0.15	0.15	0.15	0.09	0.39	0.39	0.02	0.32	0.32
Sat Flow, veh/h	3563	0	1538	841	841	115	1781	1795	63	1781	1870	1540
Grp Volume(v), veh/h	688	0	73	47	0	0	130	0	296	11	442	88
Grp Sat Flow(s),veh/h/ln	1781	0	1538	1798	0	0	1781	0	1857	1781	1870	1540
Q Serve(g_s), s	17.5	0.0	3.6	2.1	0.0	0.0	6.6	0.0	10.7	0.6	19.4	2.6
Cycle Q Clear(g_c), s	17.5	0.0	3.6	2.1	0.0	0.0	6.6	0.0	10.7	0.6	19.4	2.6
Prop In Lane	1.00		1.00	0.47		0.06	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	754	0	325	275	0	0	167	0	731	43	606	834
V/C Ratio(X)	0.91	0.00	0.22	0.17	0.00	0.00	0.78	0.00	0.40	0.26	0.73	0.11
Avail Cap(c_a), veh/h	1154	0	498	582	0	0	577	0	731	481	606	834
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	0.0	30.2	34.1	0.0	0.0	41.0	0.0	20.3	44.4	27.7	10.6
Incr Delay (d2), s/veh	5.6	0.0	0.1	0.1	0.0	0.0	2.9	0.0	1.7	1.2	7.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	0.0	1.3	0.9	0.0	0.0	3.0	0.0	4.7	0.3	9.5	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	0.0	30.4	34.3	0.0	0.0	44.0	0.0	21.9	45.6	35.3	10.9
LnGrp LOS	D	A	C	C	A	A	D	A	C	D	D	B
Approach Vol, veh/h		761			47			426			541	
Approach Delay, s/veh		40.2			34.3			28.7			31.5	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	42.6		18.9	13.4	36.1		24.3				
Change Period (Y+Rc), s	* 4.7	* 6.1		* 4.7	* 4.7	6.1		4.7				
Max Green Setting (Gmax), s	* 25	* 30		* 30	* 30	30.0		30.0				
Max Q Clear Time (g_c+I1), s	2.6	12.7		4.1	8.6	21.4		19.5				
Green Ext Time (p_c), s	0.0	0.2		0.0	0.0	0.3		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		34.6	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	19.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	120	30	20	10	225	317	240	308	20
Future Vol, veh/h	0	0	0	120	30	20	10	225	317	240	308	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	128	32	21	11	239	337	255	328	21
Number of Lanes	0	0	0	0	1	0	0	1	0	1	1	0

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	1	0
HCM Control Delay	12.9	27.1	15
HCM LOS	B	D	B

Lane	NBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	2%	71%	100%	0%
Vol Thru, %	41%	18%	0%	94%
Vol Right, %	57%	12%	0%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	552	170	240	328
LT Vol	10	120	240	0
Through Vol	225	30	0	308
RT Vol	317	20	0	20
Lane Flow Rate	587	181	255	349
Geometry Grp	5	2	7	7
Degree of Util (X)	0.823	0.332	0.447	0.558
Departure Headway (Hd)	5.047	6.612	6.304	5.754
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	716	543	572	628
Service Time	3.081	4.658	4.042	3.492
HCM Lane V/C Ratio	0.82	0.333	0.446	0.556
HCM Control Delay	27.1	12.9	14.1	15.6
HCM Lane LOS	D	B	B	C
HCM 95th-tile Q	8.9	1.4	2.3	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	200	84	440	349	92	220
Future Volume (veh/h)	200	84	440	349	92	220
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	225	22	494	358	103	247
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	290	258	554	401	133	1289
Arrive On Green	0.16	0.16	0.55	0.55	0.07	0.69
Sat Flow, veh/h	1781	1585	1005	728	1781	1870
Grp Volume(v), veh/h	225	22	0	852	103	247
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1734	1781	1870
Q Serve(g_s), s	5.7	0.6	0.0	20.5	2.7	2.2
Cycle Q Clear(g_c), s	5.7	0.6	0.0	20.5	2.7	2.2
Prop In Lane	1.00	1.00		0.42	1.00	
Lane Grp Cap(c), veh/h	290	258	0	955	133	1289
V/C Ratio(X)	0.78	0.09	0.00	0.89	0.78	0.19
Avail Cap(c_a), veh/h	679	605	0	955	491	1289
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	16.8	0.0	9.4	21.5	2.6
Incr Delay (d2), s/veh	1.7	0.1	0.0	12.4	3.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.2	0.0	7.9	1.1	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.6	16.8	0.0	21.8	25.1	3.0
LnGrp LOS	C	B	A	C	C	A
Approach Vol, veh/h	247		852			350
Approach Delay, s/veh	20.3		21.8			9.5
Approach LOS	C		C			A

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.5	30.0		10.7		36.5
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0
Max Green Setting (Gmax), s	13.0	26.0		18.0		19.0
Max Q Clear Time (g_c+I1), s	4.7	22.5		7.7		4.2
Green Ext Time (p_c), s	0.1	1.5		0.3		0.7

Intersection Summary						
HCM 6th Ctrl Delay			18.5			
HCM 6th LOS			B			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	945	147	170	1209	10	158	21	266	10	31	30
Future Volume (veh/h)	45	945	147	170	1209	10	158	21	266	10	31	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	0.96		1.00	0.97		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	1005	145	181	1286	11	168	22	0	11	33	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	137	1412	204	346	2130	18	334	40		115	323	
Arrive On Green	0.08	0.45	0.45	0.19	0.59	0.59	0.22	0.22	0.00	0.22	0.22	0.00
Sat Flow, veh/h	1781	3107	448	1781	3611	31	1217	176	0	332	1439	0
Grp Volume(v), veh/h	48	574	576	181	633	664	190	0	0	44	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1778	1781	1777	1865	1393	0	0	1771	0	0
Q Serve(g_s), s	2.8	28.7	28.7	10.0	25.0	25.0	11.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.8	28.7	28.7	10.0	25.0	25.0	13.2	0.0	0.0	2.1	0.0	0.0
Prop In Lane	1.00		0.25	1.00		0.02	0.88		0.00	0.25		0.00
Lane Grp Cap(c), veh/h	137	808	808	346	1048	1100	374	0		438	0	
V/C Ratio(X)	0.35	0.71	0.71	0.52	0.60	0.60	0.51	0.00		0.10	0.00	
Avail Cap(c_a), veh/h	178	808	808	346	1048	1100	527	0		629	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	48.2	24.2	24.2	39.8	14.4	14.4	38.0	0.0	0.0	33.9	0.0	0.0
Incr Delay (d2), s/veh	0.6	5.3	5.3	0.7	2.6	2.5	0.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	12.3	12.3	4.3	9.6	10.0	4.7	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.7	29.5	29.5	40.5	16.9	16.8	38.4	0.0	0.0	33.9	0.0	0.0
LnGrp LOS	D	C	C	D	B	B	D	A		C	A	
Approach Vol, veh/h		1198			1478			190			44	
Approach Delay, s/veh		30.2			19.8			38.4			33.9	
Approach LOS		C			B			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.3	55.0		28.7	11.5	69.9		28.7				
Change Period (Y+Rc), s	5.0	* 5		4.0	3.0	5.0		4.0				
Max Green Setting (Gmax), s	11.0	* 50		37.0	11.0	50.0		37.0				
Max Q Clear Time (g_c+I1), s	12.0	30.7		4.1	4.8	27.0		15.2				
Green Ext Time (p_c), s	0.0	0.9		0.0	0.0	1.0		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		25.5
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	10	10	90	90	48
Future Vol, veh/h	32	10	10	90	90	48
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	11	11	100	100	53
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.8	7.8	7.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	10%	76%	0%
Vol Thru, %	90%	0%	65%
Vol Right, %	0%	24%	35%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	100	42	138
LT Vol	10	32	0
Through Vol	90	0	90
RT Vol	0	10	48
Lane Flow Rate	111	47	153
Geometry Grp	1	1	1
Degree of Util (X)	0.128	0.058	0.166
Departure Headway (Hd)	4.151	4.503	3.89
Convergence, Y/N	Yes	Yes	Yes
Cap	857	800	914
Service Time	2.211	2.503	1.949
HCM Lane V/C Ratio	0.13	0.059	0.167
HCM Control Delay	7.8	7.8	7.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.2	0.6

Intersection	
Intersection Delay, s/veh	16.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	130	301	30	50	1	224	1	20	0	1	10
Future Vol, veh/h	20	130	301	30	50	1	224	1	20	0	1	10
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	163	376	38	63	1	280	1	25	0	1	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	19.6	9.9	14.2	8.8
HCM LOS	C	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	91%	4%	37%	0%
Vol Thru, %	0%	29%	62%	9%
Vol Right, %	8%	67%	1%	91%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	245	451	81	11
LT Vol	224	20	30	0
Through Vol	1	130	50	1
RT Vol	20	301	1	10
Lane Flow Rate	306	564	101	14
Geometry Grp	1	1	1	1
Degree of Util (X)	0.488	0.736	0.161	0.022
Departure Headway (Hd)	5.735	4.702	5.73	5.644
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	628	772	625	631
Service Time	3.776	2.702	3.779	3.707
HCM Lane V/C Ratio	0.487	0.731	0.162	0.022
HCM Control Delay	14.2	19.6	9.9	8.8
HCM Lane LOS	B	C	A	A
HCM 95th-tile Q	2.7	6.6	0.6	0.1

Appendix S

Seminary Utility Usage Summary Memorandum

CSW | ST2 THE SEMINARY AT STRAWBERRY

MEMORANDUM

TO: Tammy Taylor

FROM: Richard Souza, P.E.

DATE: September 19, 2022

SUBJECT: Seminary Utility Usage Summary

This memorandum summarizes utility usage and assumptions for existing residential, commercial, campus, and ancillary facilities in the Seminary at Strawberry. Average water and electrical consumptions were taken from agency meter readings. Average sewer flows reflect water usage with reductions for irrigation and individual consumption. Entitlement / historic usage were acquired from State Water Resource Control Board (SWRCB) information for Marin County and adjusted per Marin County Marin Municipal Water District (MMWD) 2020 Water Management Plan report. The entitlement/historic water numbers are shown for the current entitlements based on the existing allowable uses for the property. The existing/current use is shown for the year 2020

AVERAGE DAILY USE

	Entitlement / Historic Use	Existing / Current Use*
Water	94,858 gal	61,712 gal
Sewer	66,679 gal	37,012 gal
Electrical	7,370 kWh	2,762 kWh

* Water Meter Readings from 2020 and Electric Meter Readings from 2020 to 2021

ENTILEMENT / HISTORIC USE

Water. Historic water use for campus, ancillary, and residential facilities assume a 157 gpd per capita based on SWRCB records and adjusted 43% higher for pre 1994 per the MMWD 2020 Water Management Plan report. Water use by single-family residential units constructed from 1994 to 2009 had an average 18% higher use than units constructed 2010; and, later a 43% higher water use than units constructed prior to 1994 per MMWD records.

Sewer. Utilization rates for sewerage facilities are based on water use. Sewer flows for campus and ancillary facilities assume a 10% reduction from water use for individual consumption and irrigation. Single-family residential sewer flows assume a 30% reduction and multi-family residential assume a 10% reduction from water use.

Electrical. Average electrical use rate derive from an electrical meter serving the campus and apartment facilities. Single-family residential use assumes 20kWh and multi-family residential use assumes 10 kWh.

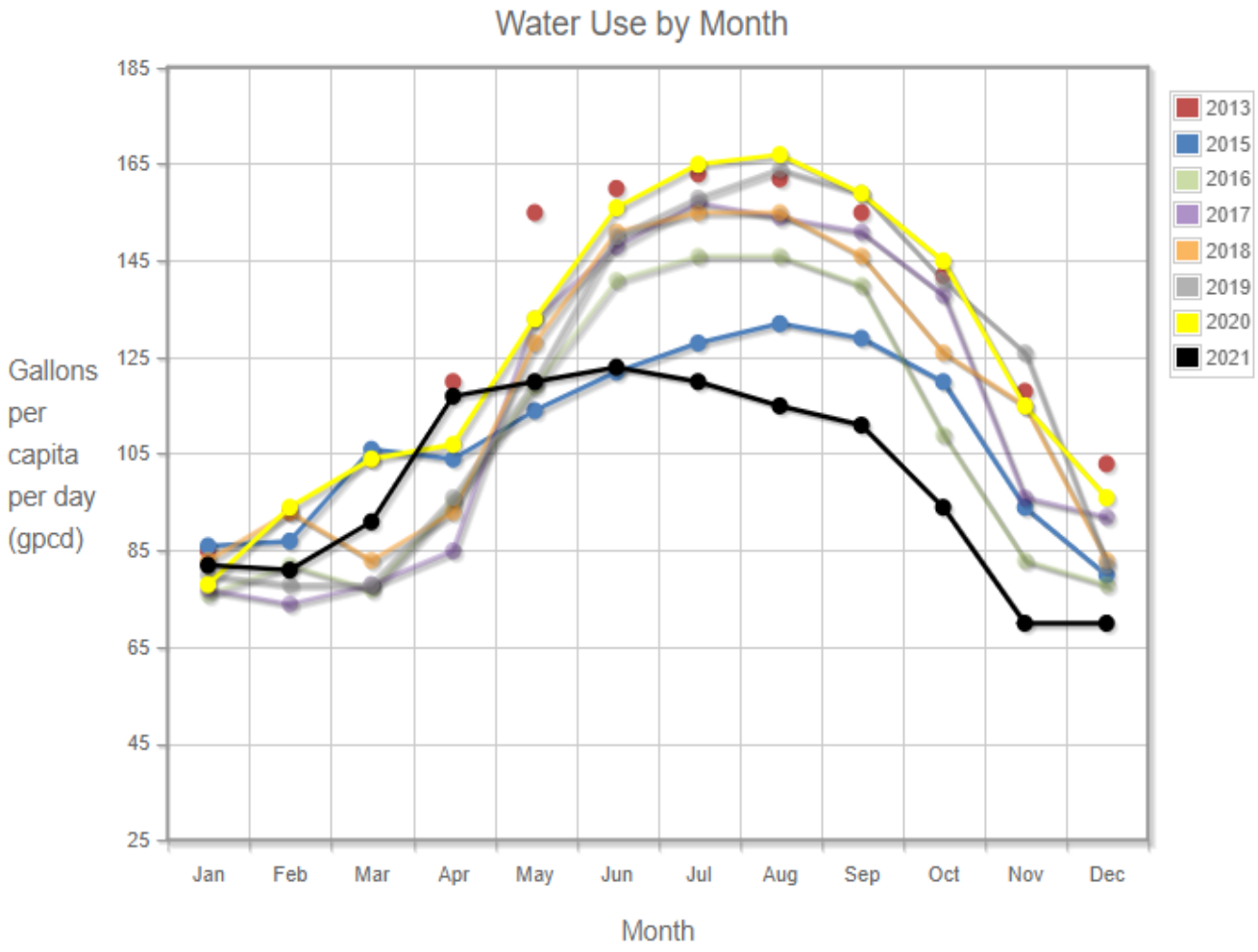
Listed below are average daily flow rates for water, sewer, and electrical facilities based on use.

ENTITLED / HISTORIC UTILITY USAGE SUMMARY

	Planning Area	Unit Type	Unit Count	Floor Area	Water GPD	Sewer GPD	Electrical kWh/Day
Academic Campus (Assumes 1,000 students and 100 employess)	Administration Bld	Existing Bld		25,200	5,108	4,597	1,036
	Academic Bld	Existing Bld		51,200	10,378	9,340	2,104
	Cafeteria	Existing Bld		10,000	2,027	1,824	411
	Library	Existing Bld		32,000	6,486	5,837	1,315
	Maintenance Bld	Existing Bld		2,200	446	401	90
	Subtotal =				24,444	22,000	4,956
	Percentage of Use =				26%	33%	67%
Ancillary Buildings (Assumes 1 person/100 SF)	Day Care			6,400	1,408	1,280	263
	Playing Field			2 Acres	20,400		
	Campus Parking	297 Stalls		1 Acre			10.8
	Subtotal =				21,808	1,280	274
	Percentage of Use =				23%	2%	4%
Existing Residential To Remain	Reed Blvd (SFR)						
	Single-Family Residential	4-Bed	1		629	440	20
	Storer/Seminary						
	Single-Family Residential	3-Bed	1		472	330	20
	Mult-Family Residential	3-Bed	10		4,719	4,247	100
	Chapel Dr						
	Single-Family Residential	4-Bed	1		629	440	20
	Subtotal =				6,449	5,458	160
	Percentage of Use =				7%	8%	2%
Residential To Be Built (or Replaced)	Chapel Dr (Seminary Point)						
	Mult-Family Residential	1-Bed	24		3,775	3,398	240
	Hodges / Shuck (Apt)						
	Apartments	1-Studio	16		2,517	2,265	160
		1-Bed	30		4,719	4,247	300
		2-Bed	47		14,786	13,308	470
Residential To Be Built (or Replaced)	Reed / Storer / Shuck (Apt)						
	Apartments	2-Bed	7		2,202	1,982	70
		3-Bed	8		3,775	3,398	80
	Dorimtory Hill	1-Rooms	66		10,382	9,344	660
	Subtotal =		211		42,156	37,941	1,980
	Percentage of Use =				44%	57%	27%
Average Daily Use =					**94,858**	**66,679**	**7,370**

EXISTING / CURRENT USE

Water. Three (3) water meters provide the use records for existing facilities. A 4-inch water meter services the academic campus, ancillary facilities, and a portion of the residential buildings.. An 1-inch and 1.5-inch water meter provide residential usage. Water meter readings during the 2020 period was used to determine the average daily use. The 61,712 gallon-per-day (gpd) average use in that year is an appropriate base for this analysis. The variance from month to month results from low or no irrigation use during the wet weather season. Residential water consumption assumes 110 gpd per capita based on SWRCB for Marin County. As indicated in the MMWD graph below, average water use varies monthly around the average per capita use.



Sewer. Utilization rates for sewerage facilities are based on percentages of water consumptions. No flow meters or other records are available. Sewer flows for campus and ancillary facilities assume a 10% reduction from water use rates for drinking and irrigation. Single-family residential use assumes a 30% reduction and multi-family residential assume a 10% reduction for drinking and irrigation.

Electrical. Average electrical use rate derive from a meter serving the campus and apartments. Single-family residential use assumes 10kWh and multi-family residential use assumes 5 kWh.

Listed below are average daily flow rates for water, sewer, and electrical facilities based on use.

EXISTING / CURRENT UTILITY USAGE SUMMARY

	Planning Area	Unit Type	Unit Count	Floor Area	Water GPD	Sewer GPD	Electrical kWh/Day
Academic Campus	Administration Bld	Existing Bld		25,200	4,157	3,741	478
	Academic Bld	Existing Bld		51,200	8,446	7,601	971
(Assumes 350 students	Cafeteria	Existing Bld		10,000	1,650	1,485	190
& employees per day)	Library	Existing Bld		32,000	5,279	4,751	607
	Maintenance Bld	Existing Bld		2,200	363	327	42
	Subtotal =				19,893	17,904	2,287
	Percentage of Use =				32%	48%	83%
Ancillary Buildings	Day Care			6,400	2,274	2,046	263
	Playing Field			2 Acres	20,400		
	Campus Parking	297 Stalls		1 Acre			10.8
	Subtotal =				22,674	2,046	274
	Percentage of Use =				37%	6%	10%
Existing Residential To Remain	Reed Blvd (SFR)						
	Single-Family Residential	4-Bed	1		250	163	10
	Storer/Seminary						
	Single-Family Residential	3-Bed	1		175	114	10
	Mult-Family Residential	3-Bed	10		1,250	1,125	50
	Chapel Dr						
	Single-Family Residential	4-Bed	1		250	163	10
	Subtotal =				1,925	1,564	80
	Percentage of Use =				3%	4%	3%
Residential To Be Built (or Replaced)	Chapel Dr (Seminary Point)						
	Mult-Family Residential	1-Bed	24		1,920	1,728	15
	Hodges / Shuck (Apt)						
	Apartments	1-Studio	16		1,280	1,152	10
		1-Bed	30		2,400	2,160	18
		2-Bed	47		4,935	4,442	29
Residential To Be Built (or Replaced)	Reed / Storer / Shuck (Apt)						
	Apartments	2-Bed	7		735	662	4
		3-Bed	8		1,000	900	5
	Dorimtory Hill	1-Rooms	66		4,950	4,455	40
	Subtotal =		211		17,220	15,498	121
	Percentage of Use =				28%	42%	4%
Average Daily Use =					**61,712**	**37,012**	**2,762**