CITY OF LONG BEACH

# Park Tower Student Housing Project

## Final Environmental Impact Report

SCH Number: 2024080441

Lead Agency:

City of Long Beach
Long Beach Community Development Department, Planning Bureau
411 West Ocean Boulevard, 3rd Floor
Long Beach, California 90802
Contact: Ms. Gina Casillas, Planner

Prepared with the assistance of

Kimley»Horn

Kimley-Horn and Associates, Inc.
660 S Figueroa St #2050
Los Angeles, CA 90017

August 29, 2025

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# 1. Introduction

## 1.1 Purpose of the Final EIR

The City of Long Beach (City), as the Lead Agency under the California Environmental Quality Act (CEQA), has prepared this final Environmental Impact Report (Final EIR) for the Park Tower Student Housing Project (Project). This document, in conjunction with the Draft Environmental Impact Report (Draft EIR), comprise the Final EIR.

As described in Sections 15088, 15089, 15090 and 15132 of the CEQA Guidelines, the Lead Agency must evaluate comments received on the Draft EIR and prepare written responses and consider the information contained in a Final EIR before approving a project. Pursuant to CEQA Guidelines Section 15132, a Final EIR consists of: a) the Draft EIR; b) comments and recommendations received on the Draft EIR either verbatim or in summary; c) a list of persons, organizations, and public agencies commenting on the Draft EIR; d) responses of the Lead Agency to significant environmental points raised in the review and consultation process; and e) any other information added by the Lead Agency.

## 1.2 Project Summary

As described in Chapter 2, Project Description, of the Draft EIR, the Project will adaptively reuse an existing seven-story office building with three levels of subterranean parking located at 5150 Pacific Coast Highway in the City of Long Beach (City), California. The existing office building is approximately 120,000 square feet (sf), of which 109,600 sf is currently leased. The Project would involve the adaptive reuse of the existing building into a private dormitory (housing for students) with 149 student residential suites (593 beds).[1]

The Project Site is in the eastern part of the City located at 5150 Pacific Coast Highway. The City lies within southeast Los Angeles County and is approximately 20 miles south of downtown Los Angeles. The City borders the Pacific Ocean to the south; the cities of Carson and Los Angeles to the west; the cities of Compton, Paramount, and Bellflower to the north; the cities of Lakewood, Hawaiian Gardens, and unincorporated Orange County to the east. The Los Angeles river is approximately 4.12 miles west of the Project Site. **Figure 1-1, Regional Vicinity Location Map** depicts the Project Site in a regional context.

The Project Site is located on a 51,048 square feet (sf) (1.2 acres) triangular shaped parcel currently developed with a seven-story office building and three levels of subterranean parking built in 1981. The existing office building is approximately 120,000 sf of which 109,600 sf is currently leased (as of January 2024). The Project Site is bounded by the Pacific Coast Highway to the north and east, East Anaheim Street to the south, and Clark Avenue to the west. The Project Site is surrounded by commercial, office, residential, and religious uses to the north and east past the Pacific Coast Highway; a recreational golf course (Recreational Park Golf Course18) to the south; and commercial

[1] Section 21.15.590 of Long Beach Municipal Code: "Communal housing" means housing for nonfamily groups with common kitchen and dining facilities but without medical, psychiatric or other care. Communal housing includes boarding house, lodging house, dormitory, fraternity house, commune, and religious home. Communal housing does not include handicapped or senior citizen housing, residential care facility, or convalescent hospital or parsonage.

and residential uses to the west. Also, the CSULB Beachside College Student housing center and living facility is located further to the north. **Figure 1-2, Local Vicinity and Surrounding Land Uses Map**, depicts the Project Site in a local setting. The Pacific Coast Highway and the San Diego Freeway (I-405) located 1.4 miles north of the Project Site provides regional access.

Long Beach Transit (LBT) has multiple stops that travel along the Project Site frontages, including Line 41, 45, and 46 which travels west/east along East Anaheim Street. These LBT routes provide service to the Los Angeles County Metropolitan Transportation Authority (Metro) Downtown Long Beach Station 3.57 miles southwest. Additional LBT stops for Lines 171 and 175 are provided 250 feet east of the Project Site. Various other LBT Lines, including Lines 91, 111, 112, 121, and 173, are located within 0.5 miles of the Project Site

The Project is depicted on **Figure 1-3, Conceptual Site Plan**. The first level of the Project would consist of administrative/management offices and various amenities including a lobby, mail room, kitchen and dining area, study room, laundry facilities, fitness area, and a men and women's locker room. The 149 student residential suites (593 beds) would be located on the second to seventh floor. The Project would include 12 one-person suites, 2 two-person suites, 7 three-person suites, 96 four-person suites, 20 five-person suites, and 12 six-person suites, totaling approximately 73,486 sf of residential area. The Project would construct a new 728 sf pavilion building that is designed to activate the street front along Clark Avenue.

The Project would utilize the three levels of existing subterranean vehicular parking and would include a total of 364 parking stalls (218 standard spaces, 19 accessible spaces, 127 tandem spaces). The Project would also include 150 bicycle parking spaces on the first level of subterranean parking. The Project would include minimal amounts of excavation necessary for pool construction and the installation of utilities to the building.

The Project would incorporate new accessible at-grade open space as well as indoor and outdoor common and private open space for Project residents and guests. The Project would provide an approximately 22,523 sf of open space that would include student plaza, benches, lounging areas, pool, patio, outdoor BBQs and picnic tables, lawn area, shade structure, planters, and landscaping. Open space areas on the ground floor would be accessed from the entrance of Pacific Coast Highway, East Anaheim Street, Clark Avenue, as well as from the interior of the Project Site from the ground -floor parking level or via subterranean parking exit stairs.

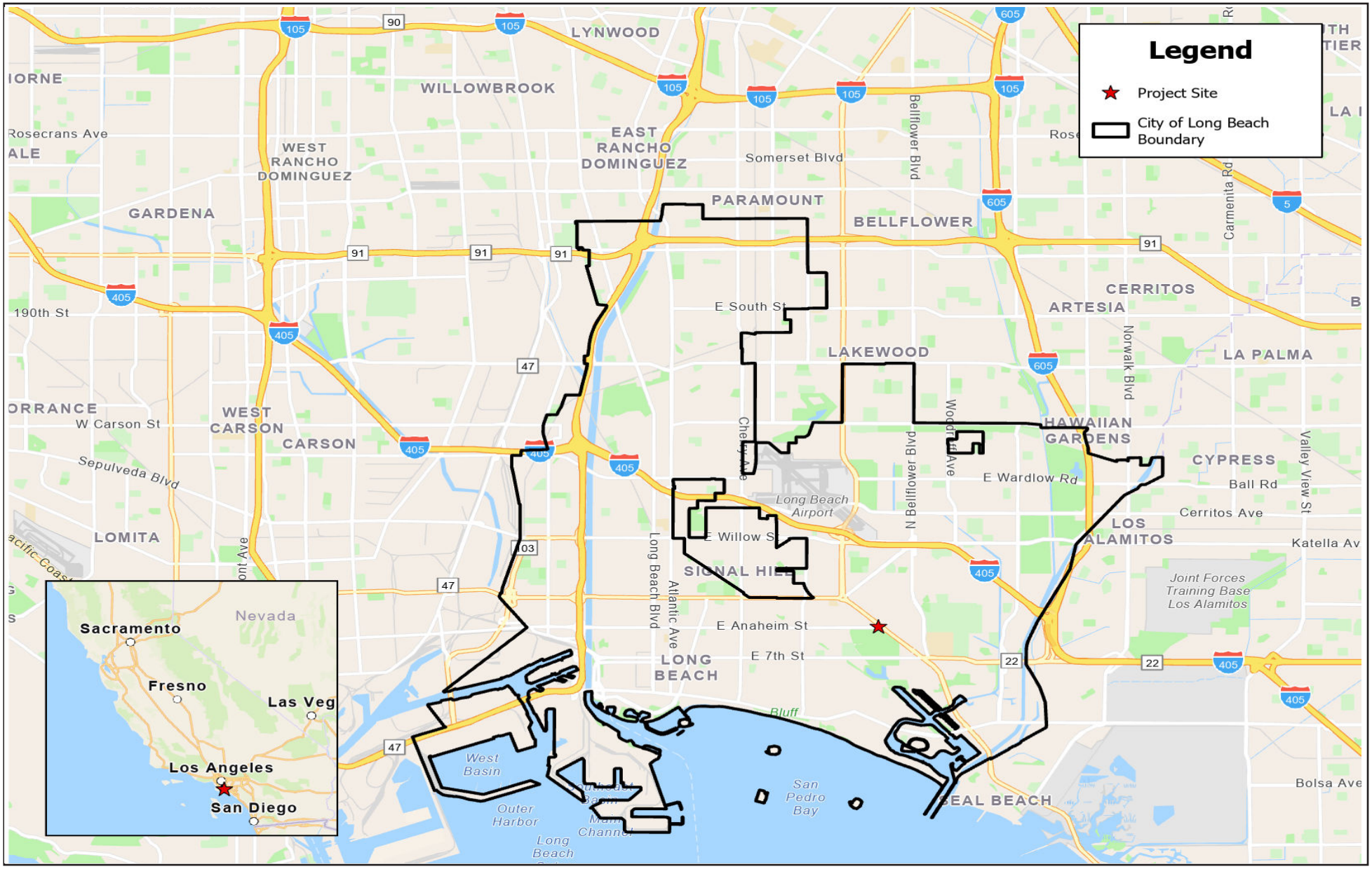
## 1.3 Project Objectives

The underlying purpose and primary objective of the Project is to adaptively reuse an existing office building and transform it into private student housing. The Project would include campus style residential suites and private open space and other amenities. As further required by the CEQA Guidelines, the specific objectives of the Project are provided below:
The objectives of the Project are:

- Fulfill the city's housing goals by expanding student housing opportunities in proximity to open space, public transportation, and a wide range of services and goods.
- Promote sustainable development through the adaptive reuse of an existing seven-story office building into a 593-bed student housing development that includes supportive uses

and amenities that promote interaction and communication between students such as large lounge areas and active outdoor recreational areas.

- Promote pedestrian and bicycle safety and access to the Project Site by engaging with the existing dedicated bike throughfare along Pacific Coast Highway with bicycle parking and lockers on the subterranean parking level 1.
- Increase access to alternative transportation options on the Project Site including zip cars and electric scooters. Increase accessibility to the Project Site through a dedicated ride share pick-up and drop-off locations along East Anaheim Street.
- Provide a development that complements and improves the visual character of the area by connecting with the surrounding urban environment through a high level of architectural design, including light materiality, landscape features, and active ground floor uses with open space amenities.
- Provide safe student housing through terraced landscape buffers and a security fence and gate.
- Create a development with high quality design that supports environmental sustainability through energy efficiency, water conservation, and the reduction of greenhouse gas emissions through such features as a PV solar panel array, electric vehicle charging stations, energy-efficient appliances, water efficient plumbing fixtures and fittings, and water-efficient landscaping.



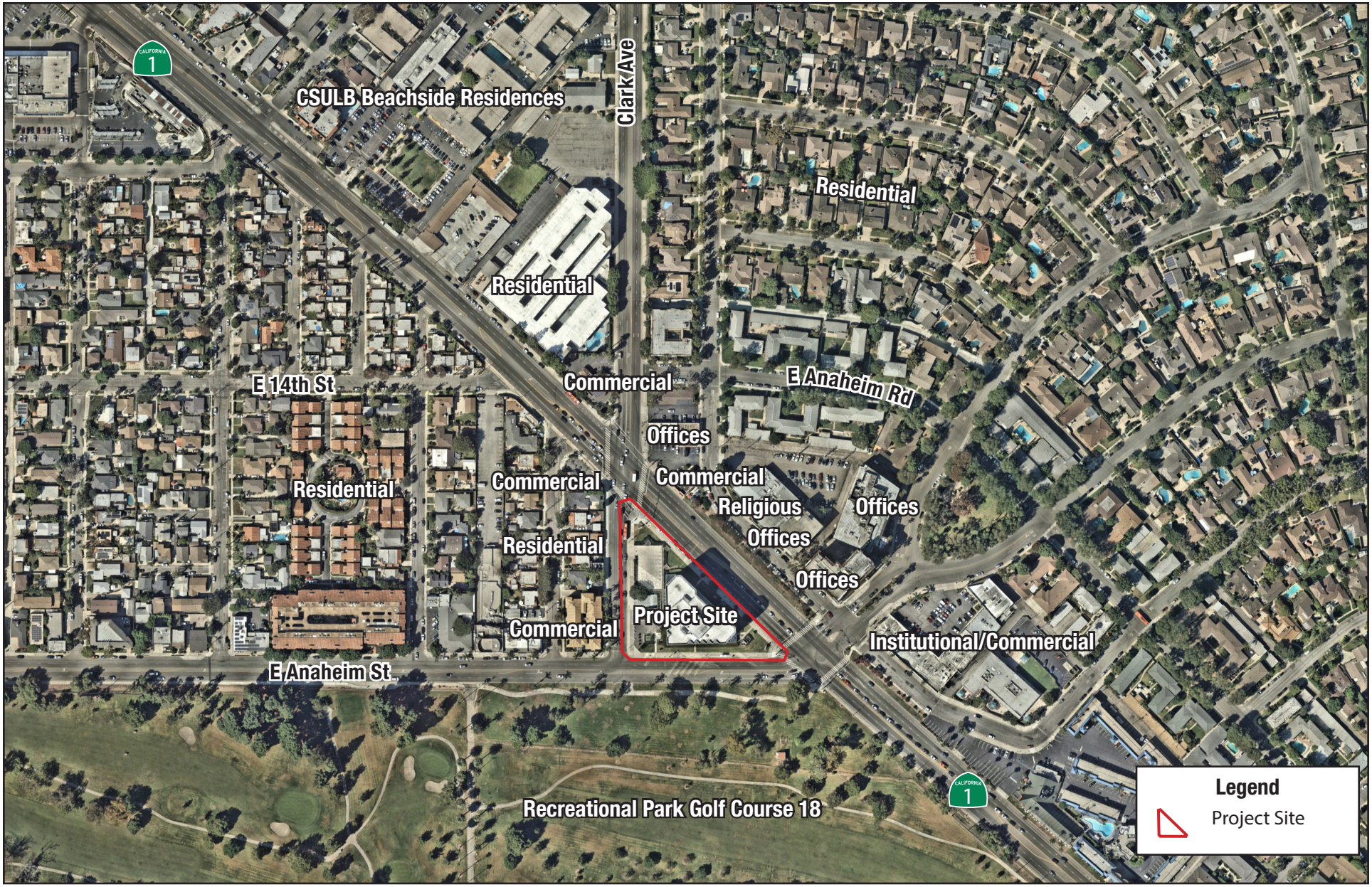

SOURCE: Arc GIS, 2024

N.T.S.

**FIGURE 1-1:** Regional Vicinity Location Map

PARK TOWER STUDENT HOUSING PROJECT

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SOURCE: Nearmap, 2023

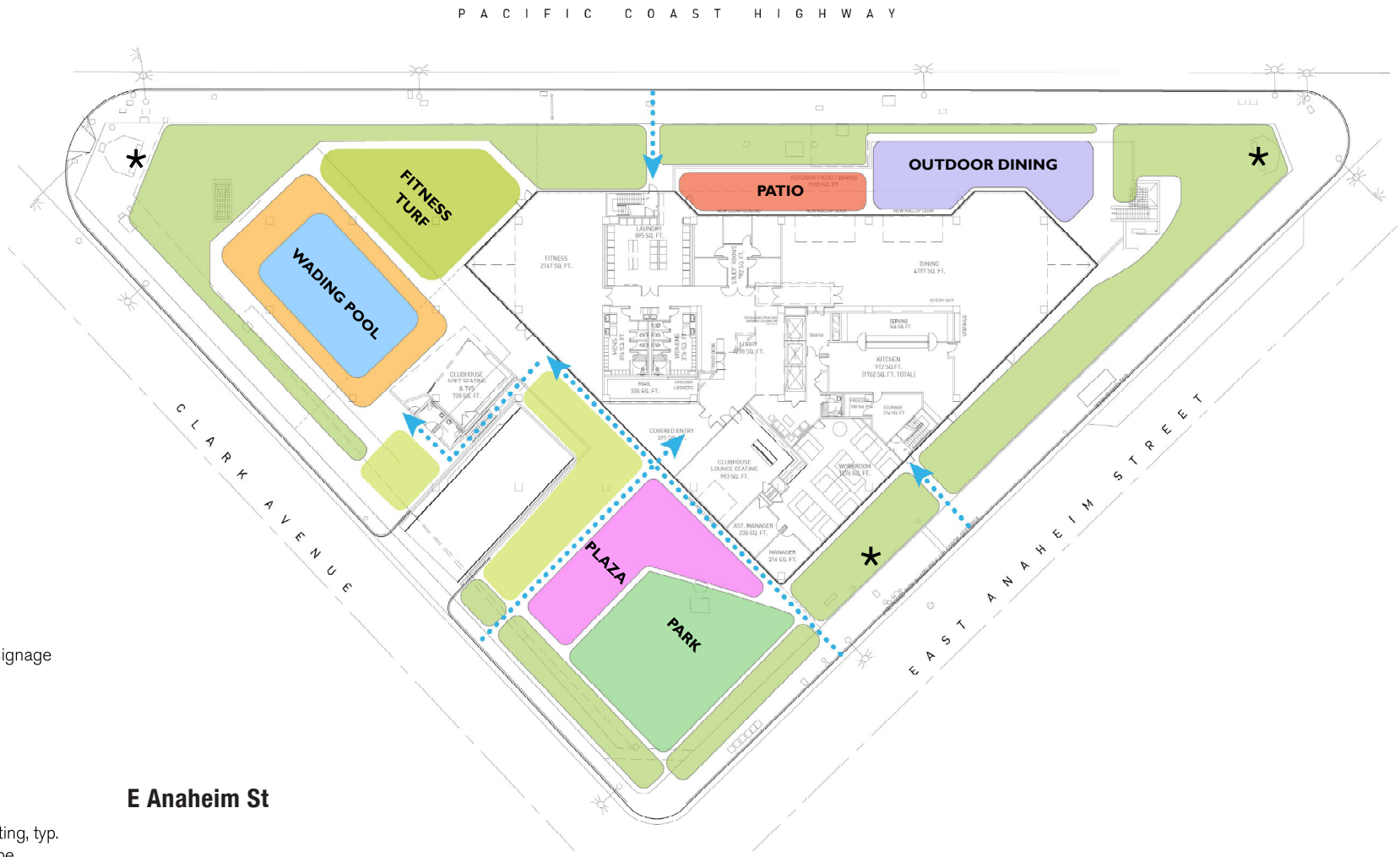
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**FIGURE 1-2**: Local Vicinity and Surrounding Land Uses Map

PARK TOWER STUDENT HOUSING PROJECT

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# PROGRAM BUBBLE DIAGRAM




**Keynotes**

- Entry
- Focal feature/signage
- Lounge Area
- Wading Pool
- Fitness Turf
- Patio
- Outdoor Dining
- Plaza
- Park
- Enhanced planting, typ.
- Buffer landscape



N.T.S.

**FIGURE 1-3:** Conceptual Site Plan

PARK TOWER STUDENT HOUSING PROJECT

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## 1.4 Required Project Approvals

In compliance with Sections 15050 and 15367 of the CEQA Guidelines, the City of Long Beach has been designated as the "lead agency," which is defined as "the public agency which has the principal responsibility for carrying out or approving a project." Approvals by the lead agency required for development of the Project include, but may not be limited to the following:

- General Plan Amendment/Map changing Community Commercial (CC) Land Use District to Land Use Element (LUE) Neighborhood Serving Center or Corridor (NSC-Moderate) Placetype;
- Zoning Code Amendment/Map Change from Community Commercial Automobile-Oriented (CCA) Zoning District to Mixed Use (MU-3) Zoning District;
- Conditional Use Permit for the Special Group Residence use for the dormitory use;
- Site Plan Review for the Adaptive Reuse of the building;
- Building Permits for the change in use of the building;
- Certification of the EIR for the Project;
- A street improvement encroachment permit from Caltrans for activities within the Pacific Coast Highway right-of-way; and
- Other ministerial approvals as needed and as may be required

## 1.5 Overview of the CEQA Public Review Process for the Draft EIR

In compliance with the CEQA Guidelines, the City, as the Lead Agency for the Project, has provided opportunities for the public to participate in the environmental review process. As described below, throughout the environmental review process, an effort was made to inform, contact and solicit input from the public and various State, regional, and local government agencies and other interested parties on the Project.

Pursuant to Section 15082 of the CEQA Guidelines, a Notice of Preparation (NOP) and Initial Study was circulated to the State, regional, and local agencies and members of the public for a 30-day public review period. The public review period began Monday, August 12th, 2024, and concluded Friday, September 13th, 2024. The purpose of the NOP and Initial Study was to formally notice that the City was preparing a Draft EIR for the Project, and to solicit input regarding the scope and content of the environmental information to be included in the Draft EIR.

A public scoping meeting was held virtually on Zoom Video Communications platform on Wednesday, August 21st, 2024 between 5:00 p.m. and 6:00 p.m. A presentation explaining the Project was provided and attendees were given an opportunity to provide their comments on the scope of the Draft EIR. Two members of the public attended the EIR Scoping Meeting. No comments were received from meeting participants during the scoping meeting. Three written

comment letters were received during the scoping period which began on Monday, August 12th, 2024, and concluded Friday, September 13th, 2024. The presentation from the EIR Scoping Meeting and written comments received during the scoping period are provided in **Appendix A, Public Involvement** of the Draft EIR.

In accordance with CEQA Guidelines Section 15085, upon completion of the Draft EIR, a Notice of Availability (NOA) as well as copy of the Draft EIR were submitted to the State Clearinghouse, Governor's Office of Planning and Research for distribution to State agencies. The Draft EIR was circulated for a 53-day public review period that ran from December 2nd, 2024, through January 23rd, 2025, in compliance with Section 15105(a) of the State CEQA Guidelines. Following the 53-day public review period, the City extended the public review period for an additional 45 days, which started on January 27th, 2025 and ended on March 12th, 2025. As required under Section 15086 of the State CEQA Guidelines, a NOA requesting comments of the Draft EIR were distributed to public agencies and interested parties.

During the public review period, the City of Long Beach received a total of seven comment letters on the Draft EIR from agencies, organizations, and individuals through written correspondence and emails. During the initial 53-day public review period, which ran between December 2nd, 2024, and January 23rd, 2025, the City received five letters and the City received two additional letters during the extension of the public review period. Comments received are presented and responded to in Chapter 2.0 Comments and Responses of the Final EIR. The original letter submittals are also included in **Appendix A, Original Comment Letters** of the Final EIR.

## 1.6 Organization of Final EIR

The Final EIR consists of the following four chapters and one appendix:

**Chapter 1.0, Introduction.** This Chapter describes the purpose of the Final EIR, provides a summary of the Project, summarizes the Final EIR public review process, and presents the contents of the Final EIR.

**Chapter 2.0, Comments and Responses**. This chapter presents all of the comments received by the City during the 53 -day public review period of the Draft EIR (December 2nd, 2024 through January 23rd, 2025) and the City's extension of the Public Review period (January 27th, 2025 through March 12th, 2025, as well as the response to those comments. Copies of the original letters received during the public comment period are also included in **Appendix A, Original Comment Letters.**

**Chapter 3.0, Corrections and Additions of the Draft EIR**. This chapter includes revisions to the Draft EIR that represent minor changes or additions in response to some of the comments received on the Draft EIR and additional edits to provide clarification. Changes to the Draft EIR are shown with ~~strikethrough~~ text for deletions and underline text for additions. These changes are minor and do not add significant new information that would affect the analysis or conclusions presented in the Draft EIR. More specifically, CEQA requires recirculation of a Draft EIR only when "significant new information" is added to a Draft EIR after public notice of the availability of the Draft EIR has occurred (refer to California Public Resources Code Section 21092.1 and CEQA Guidelines Section 15088.5), but before the EIR is certified. Section 15088.5 of the CEQA

Guidelines specifically states: "New information added to an EIR is not 'significant' unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. 'Significant new information' requiring recirculation includes, for example, a disclosure showing that:

*New information added to an EIR is not 'significant' unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. 'Significant new information' requiring recirculation includes, for example, a disclosure showing that:*

- *A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.*
- *A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted to reduce the impact to a level of insignificance.*
- *A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project's proponents decline to adopt it.*
- *The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded."*

CEQA Guidelines Section 15088.5 also provides that "[r]ecirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR. A decision not to recirculate an EIR must be supported by substantial evidence in the administrative record."

As demonstrated in this Final EIR, neither the comments submitted on the Draft EIR, the responses to these comments, or the corrections and additions presented in Chapter 3.0 of this Final EIR, constitute new significant information warranting recirculation of the Draft EIR as set forth in CEQA Guidelines Section 15088.5. Rather, the Draft EIR is comprehensive and has been prepared in accordance with CEQA.

**Chapter 4.0, Mitigation Monitoring and Reporting Program.** The Mitigation Monitoring and Reporting Program (MMRP) is the document that will be used by the enforcement and monitoring agencies responsible for the implementation of the Project's mitigation measures and Project Design Features. Mitigation measures and Project Design Features are listed by environmental topic.

**Appendices.** Appendix A: Original Comment Letters

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# 2. Comments and Responses

California Environmental Quality Act (CEQA) Guidelines Section 15088(a) states that "The lead agency shall evaluate comments on environmental issues received from persons who reviewed the draft EIR and shall prepare a written response. The lead agency shall respond to comments that were received during the noticed comment period and any extensions . . ." In accordance with these requirements, this Chapter of this Final Environmental Impact Report (Final EIR) provides responses to each of the written comments received on the Draft Environmental Impact Report (Draft EIR) for the Park Tower Student Housing Project (Project) during the 53-day public comment period, which started December 2, 2024 and ended on January 23, 2025. Following the 53-day public review period, the City of Long Beach (City) extended the public review period for an additional 45 days, which started on January 27th, 2025 and ended March 12, 2025. **Table 2-1, *Comment Letters on the Draft EIR,*** which starts on page 2-1, provides a list of the comment letters received.

Comments submitted during the public review period for the Draft EIR from Public Agencies, Community Organizations and Individuals are listed on **Table 2-1**. The individual letters are each assigned an identification number. Each comment that requires a response within the letters is also assigned a number. For example, the first Public Agency listed (Letter No. 1) is the California Department of Transportation (Caltrans). The first comment received from Caltrans is therefore labeled Comment No. 1-1, and the responses to each comment are correspondingly numbered (i.e., Response No. 1-1). A copy of each comment letter, as submitted, is provided in **Appendix A of the Final EIR, Original Comment Letters.** As required by the CEQA Guidelines Section 15088(c), the focus of the responses to comments is on "the disposition of significant environmental issues raised." Therefore, detailed responses are not provided to comments that do not relate to environmental issues.

**Table 2-1: Comment Letters on the Draft EIR**

| Letter No. | Commenter | Date |
|---|---|---|
| **Agencies** | | |
| 1 | California Department of Transportation | January 23, 2025 |
| 2 | Los Angeles County Airport Land Use Commission | January 23, 2025 |
| 3 | California State University, Long Beach | January 23, 2025 |
| **Organizations** | | |
| 4 | Sierra Club Los Cerritos Wetlands Task Force | February 10, 2025 |
| 5 | Mitchell M. Tsai on behalf of the Western States Regional Council of Carpenters | January 22, 2025 |
| 6. | Mitchell M. Tsai on behalf of the Western States Regional Council of Carpenters | March 11, 2025 |
| **Individuals** | | |
| 7. | Connie Lynsky | December 10, 2024 |

**LETTER NO. 1**

Anthony Higgins, Acting LDR Branch Chief
California State Transportation Agency, District 7
100 S. Main Street, MS 6
Los Angeles, CA 90012

Received January 23, 2025

## COMMENT NO. 1-1

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above-referenced environmental document. The Project will adaptively reuse an existing seven-story office building with three levels of subterranean parking located at 5150 Pacific Coast Highway in the City of Long Beach (City), California. The existing office building is approximately 120,000 square feet (sf), of which 109,600 sf is currently leased. The Project would involve the adaptive reuse of the existing building into a private dormitory (housing for students) with 149 student residential suites (593 beds).

The project site is located within 0.5 miles of public transit, facilitating convenient access to transit services. Existing bicycle infrastructure includes a Class II bicycle lane along Pacific Coast Highway, which provides striped and signed bike lanes for cyclists. The City's Bicycle Master Plan also identifies a proposed Class II bicycle lane along Clark Avenue, further enhancing regional bike connectivity. The project will include 150 new bicycle parking spaces on the first level of subterranean parking, supporting active transportation options. Pedestrian access is supported by sidewalks, crosswalks, and vegetated buffers in the vicinity of the project site, with sidewalks located along Pacific Coast Highway, East Anaheim Street, and Clark Avenue. These features collectively enhance multimodal connectivity and accessibility for the project.

## RESPONSE NO. 1-1

This comment provides a summary of the Project. This comment is noted for the record and will be provided to the decision-makers for review and consideration. Please refer to the detailed Project information as stated within Chapter 2, Project Description, of the Draft EIR. Because the comment does not raise a substantive issue on the content of the Draft EIR, no further response is warranted.

## COMMENT NO. 1-2

The proposed project is anticipated to generate over 507 net new daily trips; however, it would result in a net -112 and 3 AM and PM peak hour trips, respectively. As the project is located within a Transit Priority Area (TPA) and a low-VMT area, it qualifies for screening criteria under CEQA guidelines. Based on these factors, the project is presumed to have a less-than-significant impact on VMT, and no further VMT analysis is required.

Project construction has the potential to impact the transportation system through activities such as hauling excavated materials and debris, transporting construction equipment, delivering construction materials, and implementing temporary travel closures. To mitigate these impacts, the project will be required to develop and implement a comprehensive Traffic Management Plan (TMP) in compliance with the Long Beach Department of Public Works standards and guidelines.

As a reminder, any transportation of heavy construction equipment and/or materials which require use of oversized transport vehicles on State highways will need a Caltrans transportation permit. We recommend large-size truck trips be limited to off-peak commute periods. Truck drivers should cover construction trucks with tarpaulin to avoid debris spillage onto the State Highway.

## RESPONSE NO. 1-2

The comment agrees with the assumptions of the Draft EIR in regard to operations, as the Project is presumed to have a less-than-significant impact on vehicle miles traveled (VMT), and no further VMT analysis is required.

The comment further states that construction of the Project would require the preparation of a construction TMP to reduce Project impacts from construction traffic activities to less than significant levels. As discussed on page 4.12-7 within Section 4.12, Transportation, of the Draft EIR, the Project would be required by the Long Beach Department of Public Works to develop a construction TMP as part of the Project permit application, which would limit potential traffic conflicts during construction. Caltrans' review and approval processes for actions that would affect Caltrans' facilities are acknowledged and Caltrans contact information is noted for the record. The Project will comply with all relevant local and State regulations regarding the transport of equipment and materials during the construction phase, including Caltrans transportation permits if needed.

Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 1-3

Please be reminded that any work performed within the State Right-of-way on the Pacific Coast Highway will require an Encroachment Permit from Caltrans. Any modifications to State facilities must meet all mandatory design standard and specifications.

Please feel free to contact Mr. Alan Lin the project coordinator at (213) 269-1124 and refer to GTS # LA-2024-04698.

## RESPONSE NO. 1-3

This comment is noted for the record and will be provided to the decision makers for review and consideration. The comment describes the conditions in which an Encroachment Permit is required from Caltrans. As described on page ES-3 within the Executive Summary of the Draft EIR, the Project would obtain a street improvement encroachment permit from Caltrans if any activities would to occur within the Pacific Coast Highway right-of-way. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

# LETTER NO. 2

Amy J Bodek, Director
County of Los Angeles Department of Regional Planning
and
Kevin Finkel, Supervising Regional Planner
Operations and Major Projects section/ALUC Staff
Los Angeles County Airport Land Use Commission

Received January 23, 2025

## COMMENT NO. 2-1

Thank you for the opportunity to comment on the above referenced project. Staff of the Los Angeles County Airport Land Use Commission (ALUC) reviewed the submitted document and has the following comments.

## RESPONSE NO. 2-1

This comment provides a general introduction to the comments raised in this letter. Because the comment does not raise a substantive issue on the content of the Draft EIR, no further response is warranted.

## COMMENT NO. 2-2

The project is not located within an Airport Influence Area (AIA) of any airport in Los Angeles County. The nearest AIA is associated with Long Beach Municipal Airport, which is over one mile to the north of the project site. Therefore, the proposed project is not subject to ALUC review in accordance with Section 21676 of the California Public Utilities Code. There is no need for further review and staff has no additional comments on the project.

If you have any questions regarding this matter, please contact Bryan S. Moller at (213) 893-7411 or via email at bmoller@planning.lacounty.gov.

## RESPONSE NO. 2-2

This comment is noted for the record and will be provided to the decision-makers for review and consideration. This comment confirms that the Project is not located within an AIA. Therefore, the Project is not subject to ALUC review in accordance with Section 21676 of the California Public Utilities Code. Because the comment does not raise a substantive issue on the content of the Draft EIR, no further response is warranted.

# LETTER NO. 3

Melissa Soto, Manager of Capital Program Improvements
Design and Construction Services
California State University Long Beach (CSULB)

Received January 23, 2025

## COMMENT NO. 3-1

On behalf of California State University, Long Beach (CSULB), the Board of Trustees of the California State University (CSU) appreciates the opportunity to review the DEIR for the "Park Tower Student Housing Project" (the "Project"). The Project aims to adapt a seven-story office building with three levels of subterranean parking into what it describes as a private dormitory or housing for students. CSULB offers the following comments in response to the DEIR:

1. **Project Title.** CSULB has serious concerns that the members of the public will be misled or confused into believing that the Project, which includes the terms "Student Housing" in its title, is affiliated with CSULB or with the nearby CSU-owned Beachside Village student housing complex. CSULB is in no way associated with this project and has neither endorsed nor participated in any aspect of its development. In order to avoid confusion that the proposed project is owned or affiliated with the CSU, the project title should be modified to clarify the term "student" as follows: Park Tower Private Student Housing Project, or Park Tower Non-university Student Housing Project, or similar. References to the Project should take care to avoid any suggestion that the Project is affiliated in any manner with the CSU and/or CSULB.

## RESPONSE NO.3-1

This comment is noted for the record and will be provided to the decision-makers for review and consideration. This comment acknowledges CSULB's review of the Draft EIR and raises concerns over the Project title. As described on page 2-1 within Chapter 2, Project Description, of the Draft EIR, the Project would involve the adaptive reuse of the existing building into a private dormitory (housing for students) with 149 residential suites. The Project would serve as a private dormitory for students in accordance with Section 21.15.590 of the Long Beach Municipal Code (LBMC) which specifies that communal housing means housing for nonfamily groups with common kitchen and dining facilities but without medical, psychiatric or other care. Communal housing includes boarding house, lodging house, dormitory, fraternity house, commune, and religious home. Communal housing does not include handicapped or senior citizen housing, residential care facility, or convalescent hospital or parsonage. As such, the Project title would be appropriate for the Project as it would offer student housing in accordance with Section 21.15.590 of the LBMC. Findings and conclusions of the Draft EIR are not affected.

Furthermore, the comment does not identify a specific concern about physical impacts to the environment. Because the comment does not raise a substantive environmental issue on the content of the Draft EIR, no further response is warranted.

## COMMENT NO. 3-2

2. **Project Description.** Although some references to CSULB have been removed from the Project Description, Figures 2-6 and 2-7 continue to incorrectly refer to CSULB's Beachside shuttle service as available public transit in the project area. Furthermore, the Project Description continues to indicate that the proposed project would convert an existing office building into a "private dormitory (housing for students)." These references are misleading and confusing. The Beachside shuttle service is not available public transit in the project area, as the Beachside shuttle service is exclusively reserved for use by residents of the CSU-owned Beachside Village student housing complex. The Beachside shuttle service would not provide shuttle service for residents traveling to or from the Project. The Draft EIR should not refer to the Beachside shuttle service as public transit, and the Draft EIR should be revised accordingly.

## RESPONSE NO. 3-2

This comment is noted for the record and will be provided to the decision-makers for review and consideration. This comment states that the Draft EIR incorrectly references the CSULB Beachside shuttle service in Figure 2-6 and Figure 2-7 within Chapter 2 of the Draft EIR. Please refer to Chapter 3, Corrections and Additions for revisions to Figure 2-6 and Figure 2-7. As noted in Chapter 3, Corrections and Additions, the shuttle is revised to be noted as "potential shuttle along Anaheim", instead of "Potential CSULB Shuttle along Anaheim". Additionally, neither Chapter 2, Project Description, nor Section 4.12, Transportation, of the Draft EIR, which includes a transportation analysis for the Project, does not account for any shuttle service to serve the Project. Therefore, the Project would not be affiliated with CSULB or the CSULB Beachside Shuttle Service. Furthermore, as described on page 2-1 within Chapter 2, Project Description the Draft EIR, the Project would adaptively reuse an existing building into a private dormitory (housing for students) and would not be affiliated directly with CSULB. Findings and conclusions of the Draft EIR are not affected.

Furthermore, the comment does not identify a specific concern about physical impacts to the environment. Because the comment does not raise a substantive environmental issue on the content of the Draft EIR, no further response is warranted.

## COMMENT NO. 3-3

In addition, it remains unclear what is meant by the terms "private dormitory" and "student housing." No information is given as to which "students" would be eligible to live in the proposed development or how residents of the new units would be selected. Given that the proposed development is not a CSULB-endorsed or affiliated project, it is misleading to characterize the proposed project as either a "dormitory" or "student housing," particularly when doing so in a context that references CSULB-owned or operated programs, such as CSULB's Beachside Shuttle program. Continued references to "students" in the project description are likely to confuse the public into believing the Project is directly or indirectly affiliated with CSULB when there is no affiliation of any kind between the Project and the CSU. Accordingly, all references and mentions of the CSU, CSULB, and/or CSULB-owned or operated programs,

should be stricken from the Draft EIR. Furthermore, the Draft EIR should explicitly state that the proposed project has no affiliation with, or relation to, CSULB.

## RESPONSE NO. 3-3

This comment is noted for the record and will be provided to the decision-makers for review and consideration. The comment requests clarification on the term "private dormitory" and the Project's affiliation with CSULB. As discussed on page 2-1 within Chapter 2, Project Description, of the Draft EIR, the Project would serve as a private dormitory, which is housing for students, but does not identify a specific university, college or campus the students would be enrolled in. The use of the Project would be allowed under Section 21.15.590 of the LBMC, which includes dormitories. As such, the Project would provide private housing for students and would not be directly affiliated with CSULB.

Please refer to Chapter 3 Corrections and Additions within this Final EIR, which removes mentions of CSULB within the Draft EIR.

Furthermore, the comment does not identify a specific concern about physical impacts to the environment. Because the comment does not raise a substantive environmental issue on the content of the Draft EIR, no further response is warranted.

## COMMENT NO. 3-4

3. **Section 4.15, Public Services**. The impact analysis for parks states that impacts to park land and recreation would have a less than significant impact because the proposed project would be required to pay park impact fees. It is also stated, however, that residents would likely primarily utilize amenities on-campus at CSULB. As indicated above, the proposed project is not affiliated with CSULB, nor its student housing programs and facilities. Accordingly, the proposed project would not be allowed to offer CSU or CSULB-owned or operated facilities or programs to its residents. The Draft EIR should remove the assumption that residents would utilize campus facilities, and the project developer should refrain from advancing this assumption as a basis for the impact analysis.

## RESPONSE NO. 3-4

This comment is noted for the record and will be provided to the decision-makers for review and consideration. This comment states that Section 4.15 of the Initial Study incorrectly states that residents would primarily utilize amenities on campus as the Project would not be affiliated with CSULB. This assumption was removed during the preparation of the Draft EIR. As described on page 6-19 within Chapter 6, Other CEQA Considerations, of the Draft EIR, students residing on the Project Site would primarily utilize the amenities on-site. Additionally, the Project would be required to comply with LBMC Section 18.18.180, Park Fee, which requires that all residents and non-residential development projects pay a proportionate share of costs of providing the City's required park land and recreational improvements necessary to meet the needs created by such development. Therefore, impacts related to parks would be less than significant. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 3-5

4. **Section 4.16, Recreation.** The impact analysis for recreation states that impacts to recreational facilities would have a less than significant impact because the proposed project would be required to pay park impact fees. It is also stated, however, that residents would likely primarily utilize recreational amenities on-campus. As discussed above, the proposed project is not affiliated with CSULB nor its student housing programs and facilities; therefore, the proposed project and its residents would not be allowed to utilize CSU or CSULB-owned or operated facilities. The Draft EIR should remove the assumption that residents would utilize campus facilities and should not use this assumption as a basis for the impact analysis.

## RESPONSE NO. 3-5

This comment is noted for the record and will be provided to the decision-makers for review and consideration. This comment states that Section 4.16 of the Initial Study incorrectly states that residents would primarily utilize recreational amenities on campus as the Project would not be affiliated with CSULB. This assumption was removed during the preparation of the Draft EIR. As described on page 6-20, within Chapter 6, Other CEQA Considerations, of the Draft EIR, students residing on the Project Site would primarily utilize the amenities on-site. Furthermore, LBMC Section 18.18.180 requires that all residential and nonresidential development projects pay a proportionate share of costs of providing park land and recreational improvements necessary to meet the needs created by such development. Therefore, impacts related to parks and recreations would be less than significant. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 3-6

5. **Technical Appendices.** Appendix H (Trip Generation Analysis and VMT screening) states that the analysis of vehicle trips for the project was prepared based on the ITE Trip Generation Rate for Off-Campus Student Apartment land use with a subcategory of “adjacent to campus.” The proposed project is not affiliated with CSULB, nor its student housing programs and facilities; therefore, utilizing the land use category of “Off-Campus Student Apartment” is inaccurate. The proposed project and its residents would not be considered Off-Campus housing as that terminology is strictly utilized by CSU or CSULB-affiliated student housing. The Draft EIR and all associated technical analyses should remove the assumption that residents of the proposed project are CSU or CSULB students and should not use this assumption as a basis for the impact analysis. In addition, as stated above, the CSU-owned Beachside shuttle service would not be available to residents of the proposed project, and the Draft EIR should not use this assumption as part of its transportation analysis.

Thank you for your consideration of CSULB comments.

## RESPONSE NO. 3-6

This comment is noted for the record and will be provided to the decision-makers for review and consideration. The comment states that the trip generation should not be dependent on CSULB shuttle services. The Trip Generation Analysis and VMT Screening does not assume the CSU-owned Beachside shuttle would be available to residents of the Project. Although the Project is not involved with CSULB, the proposed Project would provide apartments that are typically rented by the bedroom and most contain a common area or shared living space (living room, kitchen, dining area), as stated in the industry standard ITE guidelines. The rates and definition of the Off-Campus Student Apartment land use provided by ITE would most closely reflect the anticipated traffic for the Project.

Additionally, per the ITE guidelines, trip generation for this land use calculates average daily trips generated by the Project in vehicles per bedroom. However, the transportation analysis prepared for the Project's net trip generation estimate is conservative(higher) because it calculated daily trips by the number of beds (593) rather than number of bedrooms. This is a conservative approach because many of the bedrooms in the Project would include more than one bed. As such, the findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

# LETTER NO. 4

Ann Cantrell, Co-Chair
Sierra Club Los Cerritos Wetlands Task Force
anngadfly@aol.com

Received February 10, 2025

## COMMENT NO. 4-1

On January 27. 2025, I received notice that the comment time for this DEIR has been extended. This was the first time I was aware of this project. I was not notified of a NOP nor of a Scoping meeting. I would like to submit the following comments on behalf of the Sierra Club Los Cerritos Wetlands Task Force.

## RESPONSE NO. 4-1

This comment is noted for the record. The Sierra Club is on the City's permanent list of individuals/groups that receives all public hearing notices, DEIR notifications and Notices of Availability for environmental documents. On August 12, 2024, a Notice of Preparation of an Environmental Impact Report was filed with the LA County Recorders Office with a public review period beginning August 12, 2024 through September 13, 2024 which provided meeting information on the Virtual Scoping Meeting held on August 21, 2024. The Sierra Club was notified of the DEIR initial circulation period via email at anngadfly@aol.com on December 2, 2024 and the extended circulation period on January 27, 2025.

## COMMENT NO. 4-2

In reading the alternatives, we believe Alternative 3 is the best choice for this project, both environmentally and to serve both students and seniors. The addition of a pool in the chosen project is totally unnecessary for a student dorm, especially for students whose motto is The Beach. As stated in the DEIR, the construction of the pool adds many environmental issues, including noise, air quality and tribal concerns.

## RESPONSE NO. 4-2

This comment is noted for the record and will be provided to the decision-makers for review and consideration. The comment shares support for Alternative 3. As discussed in Chapter 5, Alternatives, of the Draft EIR, Alternative 3, Senior Living and Student Housing would not include an outdoor pool and therefore would require less construction equipment and result in less vibration during construction. Therefore, Alternative 3 would result in a less than significant impact to air quality, greenhouse gas emissions, and noise at a lesser degree than the Project. However, similar to the Project, impacts would be less than significant. Impacts to tribal resources would be similar.

Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 4-3

We are in favor of reusing existing buildings instead of tearing them down, however we have great concerns about this all glass building. The DEIR states there are no Biological issues with this project. We disagree. Because the building is close to Recreation Park and in the coastal migration flyway, a study needs to be done on the possibility of bird kills by the 7 stories of glass. Up to one billion birds die each year in the United States due to collisions with windows and research shows that 54-76 percent of window collisions are fatal. This information should be included in the FEIR and mitigation provided. (Please see attached Duke Un. Study).

We suggest etching, fritting, and frosting the windows, which would not only reduce the risk of bird collisions, but also reduce energy costs by reducing solar heat gain (27 SHGC) and reducing cooling loads.

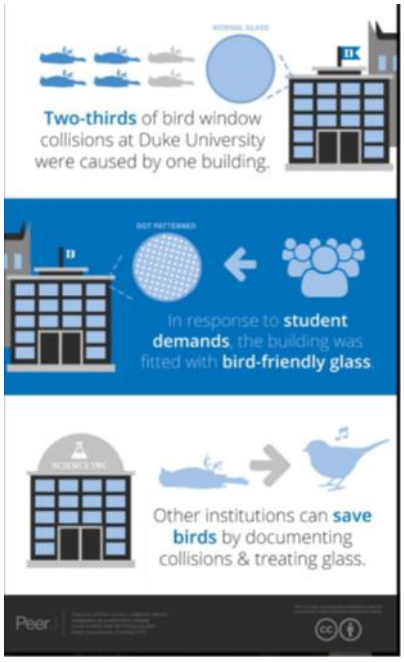
## RESPONSE NO. 4-3

The comment is noted for the record and will be provided to the decision-makers for review and consideration. The comment describes concern for bird mortality as a result of the existing building's façade being reused in the adaptation of the existing building as proposed in the Project. As discussed in Chapter 6, Other CEQA Considerations, of the Draft EIR, the Project Site is in a densely urbanized area, with other buildings of similar height, that is highly disturbed and is largely devoid of vegetation that would attract wildlife, including songbirds. Additionally, as this Project would adaptively reuse an existing building, it would largely maintain the exterior of the existing, so there would not be a substantial change in the current environment for existing wildlife.

As discussed in Chapter 6, Other CEQA Consideration, of the Draft EIR, the U.S. Fish and Wildlife Service's (USFWS's) Information for Planning and Consultation (IPaC) database and The California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDB) were reviewed to identify special-status species protected by CEQA, located in the Project area. As discussed in Chapter 6, the special-status species for identified for the Project have a very low potential to occur due to the urbanized and disturbed nature of the project and that Project Site would not provide a habitat that would support the species. Furthermore, special-status species would not be migrating at a low elevation over the site as there are no native habitats within many miles of the site. As such, there is no evidence to support that the Project as proposed would have a substantial adverse impact on protected species or an increased impact to urban songbirds.

Further, any sporadic and/or minimal bird collision deaths would be at such a low rate as to not alter the trajectory of bird populations beyond the existing conditions and would therefore not be significant according to CEQA. Moreover, studies find that glass that reflects vegetation is more likely to cause bird strikes due to the perceived open space and foraging area that the glass reflects. Therefore, buildings with extensive landscaping may be more likely to cause bird strikes than those with sparse landscaping. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO.4-4




## RESPONSE NO. 4-4

This comment is noted and will be provided to the decision-makers for review and consideration. The comment includes a graphic demonstrating how reflective façades could affect birds. Please refer to *RESPONSE NO. 4-3*, which addresses the concern that the Project would result in a significant impact to birds due to the reflective nature of the existing building's façade. As discussed previously, Chapter 6, Other CEQA Considerations, of the Draft EIR, federal and State databases were reviewed to identify special-status species that may be located in the Project area and found that special-status species, including birds, would have a very low potential to exist on the Project Site due the highly disturbed nature of the site and urbanized area surrounding the Project Site. Moreover, *RESPONSE NO. 4-3* notes that the Project would not improve the existing building's exterior, and thus, it would not change the existing environment for wildlife in the Project area. Further, any sporadic bird collisions would not pose a significant impact to the current bird population beyond current conditions, and as such, would not result in a significant impact under CEQA. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## LETTER NO. 5

Mitchell M.Tsi
139 South Hudson Avenue, Suite 200
Pasadena, California 91101

Received January 22, 2025

### COMMENT NO. 5-1

On behalf of the Western States Regional Council of Carpenters (**"Western Carpenters"** or "**WSRCC**"), my Office is submitting these comments on the Draft Environmental Impact Report (**"Draft EIR"**) of the Park Tower Student Housing Project (**"Project"**) of the City of Long Beach (**"City**"), located at 5150 E. Pacific Coast Highway, Long Beach, CA (**"Project Site"**).

The Western Carpenters is a labor union representing almost 90,000 union carpenters in 12 states, including California, and has a strong interest in well-ordered land use planning and in addressing the environmental impacts of development projects.

According to the Notice of Availability (**"NOA"**) of the Project's Draft EIR:

> "The Project will adaptively **reuse** an **existing seven-**story **office** building with **three levels** of subterranean **parking** located at 5150 Pacific Coast Highway in the City of Long Beach (City), California. The existing office building is approximately **120,000** square feet (sf), of which **109,600** sf is **currently leased**. The Project would involve the **adaptive reuse** of the existing building into a private dormitory (housing for students) with **149 student** residential suites (**593 beds**). The Project is proposing a **General Plan Amendment** from the current **Community Commercial** (CC) **Placetype** to the **Neighborhood Serving Center** (NSC-Moderate) **Placetype, which would permit residential uses.** The Project would also require a **Zoning Code Amendment/Map Change** to change the existing zone **from Community Commercial Automobile Oriented** (CCA) to **Mixed-Use** (MU 3) to allow for the Project's **student** residential uses and to enable the Project to take advantage of the adaptive **reuse development** standards. The Project would also require the **approval** of a **Conditional Use Permit** (CUP) to allow the **"Special Group Residence"** and **Site Plan review** of adaptive reuse."

(NOA, emph. added.)

### RESPONSE NO. 5-1

This comment is noted for the record and will be provided to the decision-makers for review and consideration. This comment provides a summary of the Project. Please refer to the detailed Project information as stated within Chapter 2, Project Description of the Draft EIR. Because the comment does not raise a substantive issue on the content of the Draft EIR, no further response is warranted.

### COMMENT NO. 5-2

The Project's above-mentioned description, as well as state agency comments confirm that the Project may have significant impacts, including transportation, related air quality, greenhouse gas

emissions, noise, and hazards impacts on highways and freeways, which need to be addressed. Hence, it is of utmost importance that the Project be implemented by *skilled contractors* to minimize the construction impacts and hazards to the surrounding environment from the Project.

Individual members of the Western Carpenters live, work, and recreate in the City and surrounding communities and would be directly affected by the Project's environmental impacts.

## RESPONSE NO. 5-2

This comment is noted for the record and will be provided to decision makers for review and consideration. The comment expresses support for the use of skilled contractors for construction of the Project to reduce potential significant impacts. As summarized within Section 4.2 Air Quality, Section 4.6 Greenhouse Gas Emissions, Section 4.7, Hazards and Hazardous Materials, Section 4.10 Noise, and Section 4.12 Transportation, in the Draft EIR, the Project would have less than significant impacts related to air quality, greenhouse gas emissions, hazardous materials, noise, and transportation, respectively. Because the comment does not raise a substantive issue on the content of the Draft EIR, no further response is warranted.

## COMMENT NO. 5-3

The Western Carpenters expressly reserves the right to supplement these comments or prior to hearings on the Project, and at any later hearing and proceeding related to this Project. (Gov. Code, § 65009, subd. (b); Pub. Res. Code, § 21177, subd. (a); see **Bakersfield Citizens for Local Control v. Bakersfield (2004)** 124 Cal.App.4th 1184, 1199-1203; see also, *Galante Vineyards v. Monterey Water Dist*. (1997) 60 Cal.App.4th 1109,1121.)

The Western Carpenters incorporates by reference all comments raising issues regarding the Environmental Impact Report (EIR) submitted prior to certification of the EIR for the Project. See *Citizens for Clean Energy v City of Woodland* (2014) 225Cal.App.4th 173, 191 (finding that any party who has objected to the project's environmental documentation may assert any issue timely raised by other parties).

Moreover, the Western Carpenters requests that the City **provide advance** notice for any and all notices referring or related to the Project issued under the California Environmental Quality Act (**CEQA**) (Pub. Res. Code, § 21000 *et seq*.), and the California Planning and Zoning Law (**"Planning and Zoning Law**") (Gov. Code, §§ 65000–65010). California Public Resources Code Sections 21092.2, and 21167(f) and California Government Code Section 65092 require agencies to mail such notices to any person who has filed a written request for them with the clerk of the agency's governing body.

## RESPONSE NO. 5-3

This comment is noted for the record and will be provided to decision makers for their review and consideration. The comment describes the commenter's right to supplement the comments provided in *LETTER NO. 5* and the notification process under CEQA. Because the comment does not raise a substantive issue on the content of the Draft EIR, no further response is warranted.

## COMMENT NO. 5-4

### REQUEST FOR CONTINUANCE AND EXTENSION OF COMMENT PERIOD TO COMPLY WITH CEQA:

As an initial matter, we **hereby object and request** that the City **continue and extend** the EIR comment period, since the City failed to duly upload *all* of the related documents for public review on December 2, 2024. Specifically, Appendix B of the Draft EIR – one of the most critical appendices related to air quality and greenhouse gas emissions – was not available either on the City's or the state's CEQAnet websites as of December 2, 2024 and through December 11, 2024. (**Exhibit Q** [December 11, 2024 Emails to and from the City re missing Appendix B].) The City uploaded that Appendix B on December 11, 2024 only after we brought the missing Appendix to the City's attention on that day. (*Ibid*.)

CEQA requires that the lead agency provide to the public not only the EIR itself but also its appendices and related studies. "Appendices to the EIR may be prepared in volumes separate from the basic EIR document but shall be readily available for public examination and *shall* be *submitted* to all clearinghouses which assist in public review." (CEQA Guidelines § 15147; see also Public Resources Code ("PRC") § 21091 [requiring 45 days for comment period of an EIR].)

In light of the foregoing, we request that the City extend the EIR comment period.

## RESPONSE NO. 5-4

This comment is noted for the record. The comment requests the extension of the comment period. The City extended the EIR public review for an additional 45-days from January 27, 2025 through March 12, 2025. The City uploaded the Draft EIR and all appendices to the City's website and the Governor's Office of Land Use and Innovation State Clearinghouse portal on January 23, 2025. Additionally, the City notified the Long Beach Press Telegram, which published the Notice of Availability, and filed the Notice of Availability at the Los Angeles County Registrar-Recorder/County Clerk on January 27, 2025. All interested parties were notified about the extension of the public review period through a Notice of Time Extension of Public Review and Comment Period. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-5

### I. THE CITY SHOULD REQUIRE THE USE OF A LOCAL WORKFORCE TO BENEFIT THE COMMUNITY'S ECONOMIC DEVELOPMENT AND ENVIRONMENT

As we have previously indicated in our comment to the EIR's Notice of Preparation dated September 13, 2024, to reduce the development (demolition, construction) impacts and risks (hazards) on the surrounding environment, the City should require the Project to be implemented using a local workers who have graduated from a Joint Labor-Management Apprenticeship Program approved by the State of California, have at least as many hours of on-the-job experience in the applicable craft which would be required to graduate from such a state-approved apprenticeship training program, or who are registered apprentices in a state-approved apprenticeship training program.

Community benefits such as local hire can be helpful to reduce environmental impacts and improve the positive economic impact of the Project. Local hire provisions requiring that a certain percentage of workers reside within 10 miles or less of the Project site can reduce the length of vendor trips, reduce greenhouse gas emissions, and provide localized economic benefits. As environmental consultants Matt Hagemann and Paul E. Rosenfeld note:

> [A]ny local hire requirement that results in a decreased worker trip length from the default value has the potential to result in a reduction of construction-related GHG emissions, though the significance of the reduction would vary based on the location and urbanization level of the project site.

(**Exhibit A** [March 8, 2021 SWAPE Letter to Mitchell M. Tsai re Local Hire Requirements and Considerations for Greenhouse Gas Modeling]; **Exhibits B-C** [Experts' Background].)

Workforce requirements promote the development of skilled trades that yield sustainable economic development. As the California Workforce Development Board and the University of California, Berkeley Center for Labor Research and Education concluded:

> [L]abor should be considered an investment rather than a cost—and investments in growing, diversifying, and upskilling California's workforce can positively affect returns on climate mitigation efforts. In other words, well-trained workers are key to delivering emissions reductions and moving California closer to its climate targets.[1]

Furthermore, workforce policies have significant environmental benefits given that they improve an area's jobs-housing balance, decreasing the amount and length of job commutes and the associated greenhouse gas (GHG) emissions. In fact, on May 7, 2021, the South Coast Air Quality Management District found that that the "[u]se of a local state-certified apprenticeship program" can result in air pollutant reductions.[2]

Locating jobs closer to residential areas can have significant environmental benefits. As the California Planning Roundtable noted in 2008:

> People who live and work in the same jurisdiction would be more likely to take transit, walk, or bicycle to work than residents of less balanced communities and their vehicle trips would be shorter. Benefits would include potential reductions in both vehicle miles traveled and vehicle hours traveled.[3]

Moreover, local hire mandates and skill-training are critical facets of a strategy to reduce vehicle miles traveled ("**VMT**"). As planning experts Robert Cervero and Michael Duncan have noted, simply placing jobs near housing stock is insufficient to achieve VMT reductions given that the skill requirements of available local jobs must match those held by local residents.[4] Some municipalities have even tied local hire and other workforce policies to local development permits to address transportation issues. Cervero and Duncan note that:

> In nearly built-out Berkeley, CA, the approach to balancing jobs and housing is to create local jobs rather than to develop new housing. The city's First Source program encourages businesses to hire local residents, especially for entry- and intermediate-level jobs, and sponsors vocational training to ensure residents are employment-ready. While the program is voluntary, some 300 businesses have used it to date, placing more than 3,000 city residents in local jobs since it was launched in 1986. When needed, these carrots are matched by sticks, since the city is not shy about negotiating corporate participation in First Source as a condition of approval for development permits.

Recently, the State of California verified its commitment towards workforce development through the Affordable Housing and High Road Jobs Act of 2022, otherwise known as Assembly Bill No. 2011 ("**AB2011**"). AB2011 amended the Planning and Zoning Law to allow ministerial, by-right approval for projects being built alongside commercial corridors that meet affordability and labor requirements.

The City should consider utilizing local workforce policies and requirements to benefit the local area economically and to mitigate greenhouse gas, improve air quality, and reduce transportation impacts.

Footnote 1: California Workforce Development Board (2020) Putting California on the High Road: A Jobs and Climate Action Plan for 2030 at p. ii, *available at* https://laborcenter.berkeley.edu/wp-content/uploads/2020/09/Putting-California-on-the-High-Road.pdf.

Footnote 2: South Coast Air Quality Management District (May 7, 2021) Certify Final Environmental Assessment and Adopt Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions Program, and Proposed Rule 316 – Fees for Rule 2305, Submit Rule 2305 for Inclusion Into the SIP, and Approve Supporting Budget Actions, *available at* http://www.aqmd.gov/docs/defaultsource/Agendas/Governing-Board/2021/2021-May7027.pdf?sfvrsn=10.

Footnote 3: California Planning Roundtable (2008) Deconstructing Jobs-Housing Balance at p. 6, *available at* https://cproundtable.org/static/media/uploads/publications/cpr-jobs-housing.pdf

Footnote 4: Cervero, Robert and Duncan, Michael (2006) Which Reduces Vehicle Travel More: Jobs-Housing Balance or Retail-Housing Mixing? Journal of the American Planning Association 72 (4), 475-490, 482, available at http://reconnectingamerica.org/assets/Uploads/UTCT- 825.pdf.

## RESPONSE NO. 5-5

The comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment states that the City should consider requiring the use of a local workforce to benefit the local economy and the environment. The comment references Exhibit A, SWAPE Letter to Mitchell M. Tsai regarding Local Hire Requirements and Considerations for Greenhouse Gas Modeling.

Economic effects, such as potential impacts on local employment, are not considered a significant effect on the environment under CEQA. Because the comment does not raise a substantive issue on the content of the Draft EIR, no further response is warranted.

## COMMENT NO. 5-6

### II. THE CITY SHOULD IMPOSE TRAINING REQUIREMENTS FOR THE PROJECT'S CONSTRUCTION ACTIVITIES TO PREVENT COMMUNITY SPREAD OF COVID-19 AND OTHER INFECTIOUS DISEASES

Construction work has been defined as a Lower to High-risk activity for COVID-19 spread by the Occupations Safety and Health Administration. Recently, several construction sites have been identified as sources of community spread of COVID-19. Infections that can be spread during construction work are not limited to COVID-19.

Western Carpenters recommend that the Lead Agency adopt additional requirements to mitigate public health risks from the Project's construction activities. Western Carpenters requests that the Lead Agency require safe on-site construction work practices as well as training and certification for any construction workers on the Project Site.

In particular, based upon Western Carpenters' experience with safe construction sitework practices, Western Carpenters recommends that the Lead Agency require that while construction activities are being conducted at the Project Site:

**Construction Site Design:**

- The Project Site will be limited to two controlled entry points.
- Entry points will have temperature screening technicians taking temperature readings when the entry point is open.
- The Temperature Screening Site Plan shows details regarding access to the Project Site and Project Site logistics for conducting temperature screening.
- A 48-hour advance notice will be provided to all trades prior to the first day of temperature screening.
- The perimeter fence directly adjacent to the entry points will be clearly marked indicating the appropriate 6-foot social distancing position for when you approach the screening area. Please reference the Apex temperature screening sitemap for additional details.
- There will be clear signage posted at the project site directing you through temperature screening.
- Provide hand washing stations throughout the construction site.

**Testing Procedures:**

- The temperature screening being used are non-contact devices.
- Temperature readings will not be recorded.
- Personnel will be screened upon entering the testing center and should only take 1-2 seconds per individual.
- Hard hats, head coverings, sweat, dirt, sunscreen or any other cosmetics must be removed on the forehead before temperature screening.
- Anyone who refuses to submit to a temperature screening or does not answer the health screening questions will be refused access to the Project Site.
- Screening will be performed at both entrances from 5:30 am to 7:30 am.; main gate [ZONE 1] and personnel gate [ZONE 2]
- After 7:30 am only the main gate entrance [ZONE 1] will continue to be used for temperature testing for anybody gaining entry to the project site such as returning personnel, deliveries, and visitors.
- If the digital thermometer displays a temperature reading above 100.0 degrees Fahrenheit, a second reading will be taken to verify an accurate reading.
- If the second reading confirms an elevated temperature, DHS will instruct the individual that he/she will not be allowed to enter the Project Site. DHS will also instruct the individual to

promptly notify his/her supervisor and his/her human resources (HR) representative and provide them with a copy of Annex A.

**Planning**

- Require the development of an Infectious Disease Preparedness and Response Plan that will include basic infection prevention measures (requiring the use of personal protection equipment), policies and procedures for prompt identification and isolation of sick individuals, social distancing (prohibiting gatherings of no more than 10 people including all-hands meetings and all-hands lunches) communication and training and workplace controls that meet standards that may be promulgated by the Center for Disease Control, Occupational Safety and Health Administration, Cal/OSHA, California Department of Public Health or applicable local public health agencies.[5]

The United Brotherhood of Carpenters and Carpenters International Training Fund has developed COVID-19 Training and Certification to ensure that Carpenter union members and apprentices conduct safe work practices. The City should require that all construction workers undergo COVID-19 Training and Certification before being allowed to conduct construction activities at the Project Site. Western Carpenters has also developed a rigorous Infection Control Risk Assessment("ICRA") training program to ensure it delivers a workforce that understands how to identify and control infection risks by implementing protocols to protect themselves and all others during renovation and construction projects in healthcareenvironments.[6] ICRA protocols are intended to contain pathogens, control airflow, and protect patients during the construction, maintenance and renovation of healthcare facilities. ICRA protocols prevent cross contamination, minimizing the risk of secondary infections in patients at hospital facilities. The City should require the Project to be built using a workforce trained in ICRA protocols.

Footnote 5: *See also* The Center for Construction Research and Training, North America's Building Trades Unions (April 27 2020) NABTU and CPWR COVIC-19 Standards for U.S Constructions Sites, *available at* https://www.cpwr.com/sites/default/files/NABTU_CPWR_Standards_COVID-19.pdf ; Los Angeles County Department of Public Works (2020) Guidelines for Construction Sites During COVID-19 Pandemic, *available at* https://dpw.lacounty.gov/building-and-safety/docs/pw_guidelines-construction-sites.pdf.

Footnote 6: For details concerning Western Carpenters' ICRA training program, see. https://www.swmsctf.org/courses/icra-best-practices-in-health-care-construction/

## RESPONSE NO. 5-6

This comment is noted for the record and has been provided to the decision makers for review and consideration. This comment indicates the City should adopt additional requirements to mitigate public health risks from the Project's construction activities. The commenter requests that the City require safe on-site construction work practices as well as training and certification for any construction workers on the Project Site. The comment does not raise a specific physical impact on

the environment. Because the comment does not raise a substantive issue on the content of the Draft EIR, no further response is warranted.

## COMMENT NO. 5-7

### III. THE PROJECT WOULD BE APPROVED IN VIOLATION OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

#### A. Background Concerning the California Environmental Quality Act

CEQA has two basic purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project. CEQA Guidelines § 15002(a)(1). "Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions *before* they are made. Thus, the EIR 'protects not only the environment but also informed self-government.' [Citation.]" *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553, 564. The EIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return." *Berkeley Keep Jets Over the Bay v. Bd. of Port Comm'rs.* (2001) 91 Cal. App. 4th 1344, 1354 ("*Berkeley Jets")*; *County of Inyo v. Yorty* (1973) 32 Cal. App. 3d 795, 810.

Second, CEQA directs public agencies to avoid or reduce environmental damage when possible by requiring alternatives or mitigation measures. CEQA Guidelines § 15002(a)(2) and (3). *See also, Berkeley Jets,* 91 Cal. App. 4th 1344, 1354; *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553; *Laurel Heights Improvement Ass'n v. Regents of the University of California* (1988) 47 Cal. 3d 376, 400. The EIR serves to provide public agencies and the public in general with information about the effect that a proposed project is likely to have on the environment and to "identify ways that environmental damage can be avoided or significantly reduced." CEQA Guidelines § 15002(a)(2). If the project has a significant effect on the environment, the agency may approve the project only upon finding that it has "eliminated or substantially lessened all significant effects on the environment where feasible" and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns" specified in CEQA Pub. Res. Code § 21081. CEQA Guidelines § 15092(b)(2)(A–B).

While the courts review an EIR using an "abuse of discretion" standard, "the reviewing court is not to 'uncritically rely on every study or analysis presented by a project proponent in support of its position.' A 'clearly inadequate or unsupported study is entitled to no judicial deference.'" *Berkeley Jets*, 91 Cal. App. 4th 1344, 1355 (emphasis added) (quoting *Laurel Heights,* 47 Cal. 3d at 391, 409 fn. 12). Drawing this line and determining whether the EIR complies with CEQA's information disclosure requirements presents a question of law subject to independent review by the courts. *Sierra Club v. Cnty. of Fresno* (2018) 6 Cal. 5th 502, 515; *Madera Oversight Coalition, Inc. v. County of Madera* (2011) 199 Cal. App. 4th 48, 102, 131. As the court stated in *Berkeley Jets*, 91 Cal. App. 4th at 1355:

> A prejudicial abuse of discretion occurs "if the failure to include relevant information precludes informed decision-making and informed public participation, thereby thwarting the statutory goals of the EIR process.

"The preparation and circulation of an EIR is more than a set of technical hurdles for agencies and developers to overcome. The EIR's function is to ensure that government officials who decide to build or approve a project do so with a full understanding of the environmental consequences and, equally important, that the public is assured those consequences have been considered. [Citation.] For the EIR to serve these goals it must present information so that the foreseeable impacts of pursuing the project can be understood and weighed, and the public must be given an adequate opportunity to comment on that presentation before the decision to go forward is made." *Communities for a Better Environment v. Richmond* (2010) 184 Cal. App. 4th 70, 80 (quoting *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal. 4th 412, 449–450).

Where the Lead Agency chooses to dispose of CEQA by asserting a CEQA exemption, it has a duty to support its CEQA exemption findings by substantial evidence, including evidence that there are no applicable exceptions to exemptions. This duty is imposed by CEQA and related case law. Guidelines § 15020 ["The Lead Agency shall not knowingly release a deficient document hoping that public comments will correct defects in the document."]; *see also, Citizens for Environmental Responsibility v. State ex rel. 14th Dist. Ag. Assn.* (2015) 242 Cal.App.4th 555, 568 ["The lead agency has the burden to demonstrate that a project falls within a categorical exemption and the agency's determination must be supported by substantial evidence"]; *Association for Protection etc. Values v. City of Ukiah* (1991) 2 Cal.App.4th 720, 732 [agency is required to consider exemption exceptions "where there is some information or evidence in the record that the project might have a significant impact."]

The duty to support CEQA (and/or exemption) findings with substantial evidence is also required by the Code of Civil Procedure and case law on administrative or traditional writs. Under Code of Civil Procedure ("CCP") § 1094.5(b), an abuse of discretion is established if the decision is not supported by the findings, or the findings are not supported by the evidence. CCP § 1094.5(b). In *Topanga Assn. for a Scenic Community v. County of Los Angeles* (1974) 11 Cal. 3d 506, 515 ("*Topanga"*), our Supreme Court held that "implicit in [Code of Civil Procedure] section 1094.5 is a requirement that the agency which renders the challenged decision must set forth findings to bridge the analytic gap between the raw evidence and ultimate decision or order." The agency's findings may "be determined to be sufficient if a court 'has no trouble under the circumstances discerning the analytic route the administrative agency traveled from evidence to action.'" *West Chandler Blvd. Neighborhood Ass'n vs. City of Los Angeles* (2011) 198 Cal.App.4th 1506, 1521- 1522. However, "mere conclusory findings without reference to the record are inadequate." *Id*. at 1521 (finding city council findings conclusory, violating *Topanga*).

Further, CEQA exemptions must be narrowly construed to accomplish CEQA's environmental objectives. *California Farm Bureau Federation v. California Wildlife Conservation Bd.* (2006) 143 Cal.App.4th 173, 187 ("*California Farm*"); *Save Our Carmel River v. Monterey Peninsula Water Management Dist.* (2006) 141 Cal.App.4th 677, 697 ("These rules ensure that in all but the clearest cases of categorical exemptions, a project will be subject to some level of environmental review.")

Finally, CEQA procedures reflect a preference for resolving doubts in favor of environmental review. *See,* Pub. Res. Code § 21080(c) [dispose of EIR only if "there is no substantial evidence, in light of the *whole record* before the lead agency, that the project *may* have a significant effect on the environment" or "revisions in the project…. Would avoid the effects or mitigate the effets [SIC] to a

point where *clearly* no significant effect on the environment would occur, *and* …." Emph. added.]; Guidelines §§ 15061(b)(3) [common sense exemption only "where it can be seen with certainty …."]; 15063(b)(1) [prepare an EIR "if he agency determines that there is substantial evidence that *any* aspect of the project, either *individually* or *cumulatively, may* cause a significant effect on the environment, *regardless* of whether the overall effect of the project is adverse or beneficial"]; 15064(h) [need to consider cumulative impacts of past, other current and "probable future" projects]; 15070 [prepare a negative declaration only if "no substantial evidence, *in light of the whole record* before the agency, that the project *may* have a significant effect on the environment," or project "revisions would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, *and* (2) there is no substantial evidence, in light of the whole record before the project, that the project as revised *may* have a significant effect on the environment" emph. added]; *No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 83-84 [interpret "significant impacts" so as "to afford the fullest possible protection"].

## RESPONSE NO. 5-7

This comment is noted for the record and will be forwarded to the decision-makers for their review and consideration. The comment provides the commenter's understanding of the legal background of the CEQA process and does not raise any issues with respect to the content and adequacy of the Draft EIR. Furthermore, the comment does not raise CEQA issues with respect to the Draft EIR and the impact analyses therein. Therefore, because the comment does not raise a substantive issue on the content of the Draft EIR, no further response is warranted.

## COMMENT NO. 5-8

### IV. THE DRAFT EIR IS LEGALLY INADEQUATE AS IT OMITS CRITICAL INFORMATION.

The Draft EIR suffers from several procedural flaws and omissions. These flaws and omissions preclude good faith disclosures, meaningful information and public participation by failing to provide accurate information about the Project's scope and resultant impacts. In addition, the EIR is based on flawed and erroneous baseline assumptions, and its findings are not supported by any credible or substantial evidence. As such, the Draft EIR is legally inadequate, as detailed below.

## RESPONSE NO. 5-8

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The commenters assertion that adequate public participation has not been conducted for the Project is incorrect. As discussed on page 1-1, within Chapter 1, Introduction, of the Draft EIR, in compliance with the CEQA guidelines, the City has undertaken several steps to provide opportunities for participation in the environmental review process. Pursuant to Section 15082 of the CEQA Guidelines, a Notice of Preparation (NOP) and Initial Study was circulated to the State, regional, and local agencies and members of the public for a 30-day public review period. The public review period began Monday, August 12, 2024, and concluded Friday, September 13, 2024. The purpose of the NOP and Initial Study was to formally notice that the City was preparing a Draft EIR

for the Project, and to solicit input regarding the scope and content of the environmental information to be included in the Draft EIR.

A formal scoping process was conducted where the City made contact with State, regional, and local governmental agencies and interested parties to solicit comments and inform the public of the Project. The Draft EIR Scoping Meeting was held virtually on Wednesday, August 21, 2024, between 5:00 p.m. and 6:00 p.m. using the Zoom video communications platform. A presentation explaining the Project was provided and attendees were given an opportunity to provide their comments on the scope of the Draft EIR. Two members of the public attended the EIR Scoping Meeting. No comments were received from meeting participants during the scoping meeting. Three written comment letters were received during the scoping period which began on Monday, August 12, 2024, and concluded Friday, September 13, 2024. In accordance with CEQA Guidelines Section 15085, upon completion of the Draft EIR, a Notice of Availability (NOA) as well as copy of the Draft EIR were submitted to the State Clearinghouse, Governor's Office of Land Use and Innovation for distribution to State agencies. The Draft EIR was circulated for a 53-day public review period that ran from December 2, 2024, through January 23, 2025, in compliance with Section 15105(a) of the State CEQA Guidelines. Following the 53-day public review period, the City extended the public review period for an additional 45 days, which started on January 27, 2025 and ended on March 12, 2025, which is discussed further within Chapter 1, Introduction of this Final EIR. Additionally, the City notified the Long Beach Press Telegram, which published the Notice of Availability of the extension, and filed the NOA of the extension at the Los Angeles County Registrar-Recorder/County Clerk.

The comment makes a broad claim that the Draft EIR is inadequate. Refer to *COMMENT NO. 5-9* through *5-86* for specific issues raised by the commenter in regard to the Draft EIR. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-9

**A. The Project Description is Not Accurate, Stable or Finite to Enable Meaningful Evaluation of Project Impacts.**

The Draft EIR indicates the following discretionary approvals needed for the Project:

> The Project would require adoption by the Long Beach Planning Commission/City Council and the following discretionary approvals:

- General Plan Amendment/Map changing Community Commercial (CC) Land Use District to Land Use Element (LUE) Neighborhood Serving Center or Corridor (NSCModerate) Placetype;
- Zoning Code Amendment/Map Change from Community Commercial Automobile-Oriented (CCA) Zoning District to Mixed Use (MU-3) Zoning District;
- Conditional Use Permit for the Special Group Residence use for the dormitory use;
- Site Plan Review for the Adaptive Reuse of the building;
- Building Permits for the change in use of the building;
- Certification of the EIR for the Project;
- A street improvement encroachment permit from Caltrans for activities within the Pacific Coast Highway right-of-way; and
- Other ministerial approvals as needed and as may be required.

(DEIR, p. ES-3)

And yet, the record in this case reveals that *more* discretionary actions are needed, and the City improperly discounts or omits some of those. For example, per the City's Development Bureau's letter, the Project's *basement encroaches* into the *highway* and – if used by the Project – requires a street vacation:

- Based on the plans, it appears that the **existing basement encroaches** into the **Pacific Coast Highway sidewalk**. The applicant shall confirm that this is the case. If it does indeed encroach, Public Works has no record of a vacation of area below Pacific Coast Highway to allow for the subterranean encroachment. Provide documentation of **this vacation**. If one does not exist, the applicant **will need to process** the subterranean **vacation**.

(**Exhibit D**, p. 1, emph. added [November 18, 2022 City of Long Beach Letter].)

The EIR's omission of the vacation issue is critical since there are several requirements for street vacation that need to be met by the Project applicant before such vacation can be deemed proper. Streets and Highway ("**S&H**") Code defines "vacation" as "the complete or partial abandonment or termination of the public right to use a street, highway, or public service easement." (S&H Code § 8309.) The code defines a "street" and "highway" as "all **or part of**, **or any right in**, a state highway **or other public** highway, road, **street**, avenue, **alley**, lane, driveway, place, court, trail, **or other public right-of-way or easement**, or purported public street or highway, and rights connected therewith, including, **but not limited to**, restrictions of access or abutters' rights, **sloping easements**, or **other incidents** to a **street** or highway." (S&H Code § 8308, emph. added.)

S&H also provides that "[t]his part shall be **liberally** construed in order to effectuate its purposes." (*Id.* § 8310, emph. added.)

In turn, the Long Beach Municipal Code section 20.08.170 requires the following findings to be made for street vacation before one can be approved:

C. In evaluating a right-of-way vacation, the City needs to make the following findings:

1. The City right-of-way *will not* be needed for *present* or *future* public right- of-way purposes.

2. The *continued access* to any City or public utility services and improvements will be *properly reserved*.

3. The right-of-way vacation is consistent with goals and policies of the General Plan referencing specific applicable provisions.

(Long Beach Municipal Code, emph. Added.[7])

But this finding was not made by the City or analyzed in the EIR. Neither can such a finding be reasonably made. Specifically, per the City's own comments, the Project may have significant traffic impacts and the General Plan requires street *dedications* to widen the adjacent streets from 70 feet to 80 feet. (**Exhibit E** [7/1/2022 City of Long Beach Pre-Development Meeting Minutes].) The potential of traffic impacts and the need of street-widening is also critical since the Project proposes to bring in 593 people to the Project site and potentially 593 cars and related daily trips, the Project

is surrounded by 3 streets, the Project site is triangular in shape, it is located near residential areas, in an earthquake and liquefaction zone, and may also have or cause fire and other hazards requiring adequate street infrastructure and evacuation possibility, which will only be exacerbated if the City has no ability to widen the streets.

Footnote 7: See available at: https://library.municode.com/ca/long_beach/codes/municipal_code?nodeId=TIT20SU_CH20.08DEST_20.08.170RI-WVA

## RESPONSE NO. 5-9

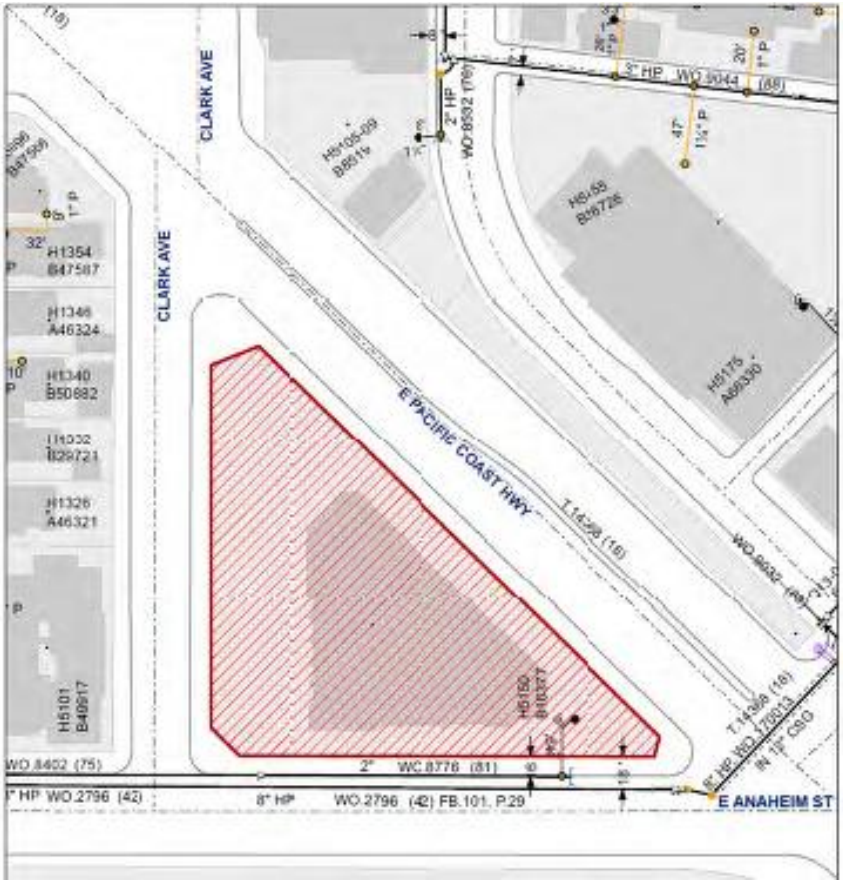
This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment is incorrect in stating that the Draft EIR failed to disclose additional discretionary approvals, such as those required for street vacation. Exhibit D in the commenter's letter provides a letter from the City's Development Services Department to the Applicant after undergoing the Conceptual Site Plan review of the Project. In Exhibit D, the City's Development Services Department asked the applicant to confirm whether there would be encroachments into the Pacific Coast Highway Sidewalk.

The Project would not require street vacation, therefore, no discretionary approvals related to street vacations would be required. As such, no transportation impact related to street vacations would occur.

The commenter is incorrect in stating that a significant traffic impact would occur. As discussed on pages 4.12-10 through 4.12-11 within Section 4.12, Transportation of the Draft EIR, impacts to transportation would be less than significant. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-10

In addition, the Project's proposed transient residential uses – unlike the current office uses of the Project site – will require resizing of underground utilities, which is further complicated by the isolated location of the Project from other uses, as shown on the screenshot below, and will require street improvements and changes:




As the City concedes:

- Long Beach Energy Resources currently maintains an active gas service line feeding the existing building on the lot that will **need** to be **upsized/renewed** if **loads increase** due to the conversion. See GIS map (attached) for approximate location of the service.
- If additional new gas service or renewal of existing service is needed for the proposed conversion, Long Beach Energy Resources will need to review and approve the location for the meter and **buried service line** to be installed. Please consider that the routing of the buried gas service line and clearance requirements for meter may impact the design of the development.

(**Exhibit D,** p. 2, emph. added.)

Furthermore, the City's documents show that there are current plans by Caltrans for street modifications near the Project, including on Pacific Coast Highway. (**Exhibit S,** p. 6.)

As such, the EIR's omission of this vacation issue is prejudicial in light of the Project's traffic and utilities impacts, and the associated risks to the surrounding environment.

## RESPONSE NO. 5-10

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment is incorrect in stating that the Project would require the resizing of natural gas service lines. As discussed above, the commenter relies on a letter from the City's

Development Services Department to the Applicant after undergoing the Conceptual Site Plan review of the Project to make this assertion. The letter referenced in Exhibit D states that if the active gas load increases, then Long Beach Energy Resources will need to increase and upsize the active gas service line. However, as discussed on page 4.14-11 within Section 4.14, Utilities and Service Systems, of the Draft EIR, the projected natural gas demand during Project operations would represent a negligible increase compared to the County's overall natural gas consumption increase. As such, the Project would not require the construction of new or upsized natural gas facilities.

Furthermore, as discussed on page ES-3, within the Executive Summary of the Draft EIR, any activities within the Pacific Coast Highway right-of-way would require a street improvement encroachment permit from Caltrans. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-11

**Second**, the Draft EIR omits the Conditional Use Permit required for open space, lot coverage, and most importantly parking reduction and the associated impacts of the Project apparently improperly relying on AB 2097 for parking reduction. It claims that "AB 2097 applies to this property site which eliminates the requirement for minimum parking requirements for the change in use." (**Exhibit D**, p. 1.)

To be clear, unlike the enumerated discretionary approvals listed in the Draft EIR (DEIR, p. ES-3) and quoted above, which lists only *one* conditional use permit, the Project Applicant has initially sought *two* conditional use permits, one of which was for *parking reduction* and other requirements that would be changed, such as open space. (**Exhibit F** [Project Applicant's invoice showing payment for *two* (2) CUPs].)

And the Project Applicant himself conceded that the Project has an issue with parking that needs to be addressed, stating:

> **In addition** to the **17 surface being removed**, there will be a **net loss** of **35 parking spaces** in the **underground structure**. Regarding parking, we would also like the City to opine on whether/how AB 2097 would apply to the project. This bill will go into effect in January and may offer some relief from parking requirements for the project.

(**Exhibit V**, p. 4 [October 26, 2023 email from Project Applicant, which includes the quoted October 20, 2022 Email from Project Applicant].)

Per the City's own records, the Project includes Adaptive Reuse to address code deficiencies (open space, parking, density). (**Exhibit W** [November 3, 2022 Email between City staff].)

And later, the Project Applicant also conceded that the Project may not necessarily be eligible for AB 2097 and requested the City's opinion on it, noting: "The project site is eligible for AB2097 under the 2016 SCAG map, but not LBTransit map. Have we had a determinate on which map we will use for the parking exemption allowance?" (*Ibid*.)

But rather than address this issue meaningfully, the City swept it under the rug, excluded the additional Adaptive Reuse CUP, and summarily claimed that AB 2097 applies to the Project without further elaboration. Not so.

In particular, AB 2097 provides:

SEC. 2**. Section 65863.2** is added to the Government Code, to read:

**65863.2.** (a) A public agency shall **not** impose or enforce any minimum automobile parking requirement on a **residential**, commercial, or other development **project if** the project is located within **one-half mile** of public transit.

(b) **Notwithstanding** subdivision (a), a city, county, or city and county **may** impose or enforce minimum automobile parking requirements on a project that is located within **one-half mile** of public transit **if** the public agency makes **written findings**, within **30 days** of the receipt of a completed application, that not imposing or enforcing minimum automobile parking requirements on the development would have a **substantially negative** impact, supported by a **preponderance** of the **evidence** in the record, on **any** of the following:

(1) The city's, county's, or city and county's ability to meet its share of the regional housing need in accordance with Section 65584 for low- and very low income households.

(2) The city's, county's, or city and county's ability to meet any special housing needs for the elderly or persons with disabilities identified in the analysis required pursuant to paragraph (7) of subdivision (a) of Section 65583.

(3) Existing residential or commercial parking within one-half mile of the housing development project.

(c) For a housing development project, subdivision (b) shall not apply if the housing development project satisfies any of the following:

(1) The development dedicates a minimum of **20 percent** of the **total number** of **housing** units to very low, low-, or moderate- income households, students, the elderly, or persons with disabilities.

(2) The development contains fewer than 20 housing units.

(3) The development is subject to park ng reductions based on the provisions of any other applicable law.

(d) Notwithstanding subdivision (a), an event center shall provide parking, as required by local ordinance, for employees and other workers.

(e) For purposes of this section:

(1) "Housing development project" means a housing development project as defined in paragraph (2) of subdivision (h) of Section 65589.5.

(2) "Low- and very low income households" means the same as "lower income households" as defined in Section 50079.5 of the Health and Safety Code.

(3) "Moderate-income households" means the same as "persons and families of moderate income," as defined in Section 50093 of the Health and Safety Code.

(4) "Public agency" means the state or any state agency, board, or commission, any city, county, city and county, including charter cities, or

special district, or any agency, board, or commission of the city, county, city and county, special district, joint powers authority, or other political subdivision.

(5) "Public transit" means a major transit stop as defined in Section 21155 of the Public Resources Code.

(6) "**Project**" does not include a project where any portion is designated for use as a hotel, motel, bed and breakfast inn, **or other transient lodging**, except where a portion of a housing development project is designated for use as a residential hotel, as defined in Section 50519 of the Health and Safety Code.

Based on the above-noted, the Project clearly does not qualify for a parking exemption or reduction because:

1) The Project here *is* a *transient lodging* – it is a dormitory – and hence, an exception from AB 2097;
2) The Project here is *not* within ½ mile of transit as defined by AB 2097 and PRC referenced therein; and
3) The Project here does *not* provide *any* affordable housing to eliminate the City's possibility to find special adverse impacts on public health and safety.

That dormitories are a transient lodging facility is confirmed by various agencies and cases. For example, City of Los Angeles requires a checklist for transient facilities, which lists dormitories as an example of those. (**Exhibit G**[8] [City of LA Supplemental Plan Review Checklist for Transient Lodging Rooms].) Various courts have considered dormitories as transient lodging. (*Carolyn v. Orange Park Community Assn.* (2009) 177 Cal.App.4th 1090, 1100 [" 'transient lodging' (like boarding houses, dormitories, resorts, hotels, motels, and inns) and therefore qualify as a public accommodation in its entirety"]; *San Diego Gas & Electric Co. v. Superior Court* (1996) 13 Cal.4th 893, 922 ["In that decision the commission also determined that the term 'residential customer' in section 739 included single-family houses, apartments, condominiums, and mobilehomes, but excluded transient trailerparks, hotels and motels, and other places of temporary occupancy such as hospitals and college dormitories."])

Yet, the Draft EIR is silent on this issue altogether and improperly presumes that the student dormitory here is covered by AB 2097.

Moreover, there is no showing that the Project is within a ½ mile of a qualifying transit stop or that it provide affordable units. (DEIR, p. 4.12-1—4.12-2; 4.12-9.) The Draft EIR simply claims that the Project is within 0.5 miles of a public transit stop. (DEIR, p. 4.12-9 or 4.12-11.) It notes: "Alternative 2 would be subject to AB 2097 parking requirements and would not enforce minimum parking requirements as the Project Site is located within one-half mile of **public transit options including LBT** bus service and the **CSULB Beachside shuttle**." (DEIR, p. ES-18, emph. added.) But LBT is *not* a qualifying major transit stop by itself. AB 2097 defines "public transit" as: "(5) "Public transit" means a *major transit* stop as defined in Section 21155 of the Public Resources Code." Under the referenced PRC § 21155(b): "A major transit stop is as defined in Section 21064.3, except that, for purposes of this section, it also includes *major transit stops* that are included in the applicable regional transportation plan." And, under Public Resources Code § 21064.3:

"Major transit stop" means a site containing any of the following:

(a) An **existing rail** or **bus rapid transit** station.
(b) A **ferry terminal** served by either a bus or rail transit service.
(c) The **intersection** of t**wo or more major bus routes** with a **frequency** of service interval of **20 minutes or less** during the morning and afternoon **peak** commute periods.

(Emph. added.)

There is no indication that the LBT here fits the definition of either PRC sections 21155 or 21064.3, including the requirement that there be at least one other intersecting bus or the requirement of the 20-minute interval frequency of service. To the contrary, based on the Draft EIR's descriptions, the LBT buses appear to be traveling only east/west – i.e., do not intersect.

As for the CSULB shuttle, there is no clear record or assurance of any *existing* CSULB Beachside shuttle that serves or will serve the Project site.

Footnote 8: Also available here: https://ladbs.org/docs/default-source/forms/plan-check-2017/supplemental-plan-review-checklist-no-6---transient-lodging.pdf?sfvrsn=b881f953_6

## RESPONSE NO. 5-11

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment states the commentor's belief that the Project is not eligible for AB 2097, and therefore not eligible for parking reductions and that there are deficiencies at the Project Site. The commentor states that Exhibit W demonstrates the City's awareness of deficiencies at the Project Site.

As described on page 4.12-1 within Section 1.12 Transportation of the Draft EIR, AB 2097 prohibits public agencies or cities from imposing a minimum automobile parking requirement on development projects within a half-mile radius of a major transit stop. This includes residential, commercial, and industrial projects, but does not include hotels, motels, bed and breakfast inns, or other transient lodgings. The Project would adaptively reuse an office building into student residential housing near a major transit stop.

The Project Site is located within 0.5 miles of public transportation. Existing transit services that serve the Project Site include LBT Lines 41, 45, and 46, which provide service to the Metro Downtown Long Beach Station. Additional transit lines also include LBT Lines 171, 175, 91, 111, 112, 121, and 173; which are all within 0.5 miles of the Project Site. All these services would continue to serve the Project Site during Project operations. The Project would not be associated the CSULB Beachside Shuttle. As described in Exhibit D, the City's Development Services Department acknowledges that AB 2097 would apply to the Project Site, which eliminates the requirement for minimum parking requirements.

Notably, neither AB 2097 nor Section 50519 of the Health and Safety Code (HSC) defines "transient lodging" specifically or identifies student housing as transient housing. Rather, the HSC identifies that a residential hotel differs from transient lodging because, in a residential hotel, the hotel is the primary residence for the guests staying there whereas, in transient lodging, the lodging would not be considered the primary residence for the guest. Because student housing would be the primary residence for the students that live there, the Project more closely resembles a residential hotel than transient housing. As such, consistent with the determination made by the City, AB 2097 applies to the Project.

Furthermore, **Exhibit G** refers to the City of LA Supplemental Plan Review Checklist for Transient Lodging Rooms and would not be applicable for the City of Long Beach.

Finally, the Project would require a site plan review of the adaptive reuse of the building to ensure that the Project is consistent with the California Green Building Code Standards and all other building codes in effect at the time of construction. Therefore, any deficiencies would be addressed prior to construction. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-12

Another critical consideration that the DEIR fails to acknowledge is that most student dormitories are located *adjacent* to universities or colleges. This Project is, however, different. As the traffic engineer commented for this Project: "• Land use code 226 (Off-Campus Student Apartment [Mid-Rise]) provides trip rates for the "Adjacent to Campus" land use subcategory, which does not apply to the Project as it is over **0.5 miles from CSULB**." (**Exhibit J** [Traffic Engineer's comments/Planner to DB Applicant Email of March 27, 2024].) As such, the Project students will have to use their cars to be able to get to the University and also address their living needs and necessities, such as shop for food.

Since the Draft EIR fails to provide an accurate Project description of all the discretionary approvals and changes the Project seeks and is based on flawed assumptions, the Draft EIR's project description is inaccurate, incomplete, and non-finite, as a matter of law.

## RESPONSE NO. 5-12

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment questions whether the ITE land use code 226 applies the uses proposed by the Project. As stated on page 4.12-6 within Section 4.12, Transportation, of the Draft EIR and within Appendix H, Trip Generation Analysis and Vehicle Miles Traveled Screening, of the Draft EIR, to account for the Project being over ½ mile from any post-secondary campus, modified rates were developed using ITE trip generation data from the Off-Campus Student Apartment (Low-Rise) land use with the "adjacent to campus" subcategory.

As described on page 4.12-10 through 4.12-11 within Section 4.12 Transportation of the Draft EIR, students residing at the Project Site would have access to transit services. The Project Site is currently served by transit such as LBT Lines 41, 45, and 46, which provide service to the Metro Downtown Long Beach Station; LBT Lines 171, 175, 91, 111, 112, 121, and 173 which are all within 0.5 miles of the Project Site.

Pedestrian access to the Project Site is provided via sidewalks located along Pacific Coast Highway, East Anaheim Street, and Clark Avenue; and bicycle access is provided via bicycle paths on Pacific Coast Highway. Additionally, the Project would provide 150 new bicycle parking spaces that would further promote the use of alternative transportation. Furthermore, as described on page 4.12-10 through 4.12-11within Section 4.12 Transportation of the Draft EIR, transportation impacts would be less than significant as the Project would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

The commenter incorrectly states that the Draft EIR Project Description is incomplete. The Project has provided an adequate Project Description based on the substantial evidence presented in the Draft EIR and the whole record before the Lead Agency. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required

## COMMENT NO. 5-13

**Third,** despite our office's California Public Records Act ("**PRA**") requests and the City's productions as of the date of this comment letter, we have not found the Project's proposed plans and precise changes to the interior and exterior of the Project site. Indeed, the Draft EIR concedes that the Project plans are **not yet** finalized:

"Project plans have **not yet been** developed to identify specific Project features that would support reductions in electrical usage, adjustments were made to the California Emissions Estimator Model (CalEEMod) modeling to represent that the Project would comply with the 2022 California Building Standards Code (2022 CCR Title 24)."

(DEIR, p. 4.6-10, emph. added.)

For this reason, too, the Draft EIR fails to provide an accurate complete and finite project description to allow meaningful impact analysis.

Recently, a similar project and its EIR were struck down by the court for an inaccurate project description. The court stated:

In this case, Millennium's failure to present any concrete project proposal, instead choosing concepts and "impact envelopes" rather than an accurate, stable, and finite project, was an obstacle to informed public participation, "even if we cannot say such input would have changed the project ultimately selected and approved." (*Washoe Meadows*, *supra*, 17 Cal.App.5th at p. 290, 225 Cal.Rptr.3d 238.) Accordingly, the trial court correctly invalidated the EIR and granted the CEQA writ petition.

*Stopthemillenniumhollywood.com v. City of Los Angeles* (2019) 39 Cal.App.5th 1, 20

The Draft EIR here suffers from the flaws similar to those in *StoptheMillenniumHollywood.com,* and is legally flawed and inadequate, as a matter of law.

## RESPONSE NO. 5-13

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The commenter incorrectly states that the Draft EIR does not provide an accurate complete and finite project description. As identified in Section 15124, Project Description, of the State CEQA Guidelines, a project description must include the location and boundaries of a project site, the project's statement of objectives, a general description of the project's characteristics, and the intended uses of the EIR. The Draft EIR contains all of the information required by these guidelines and includes sufficient information allowing for a complete and accurate analysis for each and every required impact area.

Furthermore, the commenter has failed to identify any instances where the Draft EIR contains insufficient information that precluded adequate impact analysis. The precise changes to the interior and exterior are not necessary to provide an accurate environmental analysis. Additionally, as noted in Chapter 2, Project Description, of the Draft EIR, the exterior and façade of the existing building will largely remain the same. In regard to the project features that would reduce electrical usage, a full description of the exact design features is not required to accurately analyze the potential energy impacts for the Project. As discussed on page 4.6-10 within Section 4.6, Greenhouse Gas Emissions, of the Draft EIR, the modeling prepared to analyze energy consumption assumed Project compliance with 2022 Building Standards Code (2022 CCR Title 24), which is required by the Lead Agency, with no other design feature to reduce electricity usage included as a conservative analysis. Any design features that would be included to reduce electricity in the future would only further reduce impacts. As such, findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-14

### B. The Draft EIR's Alternatives are Legally Inadequate and Impermissibly Leave out Feasible Alternatives

The Draft EIR's alternatives are legally inadequate as they omit feasible alternatives, reject alternatives by legally misconstruing CEQA's feasibility requirement, or simply provide legally and factually inaccurate descriptions of alternatives.

This, in part, stems from the narrowly-drawn project objectives, which appear to improperly simply mirror the desired Project rather than provide options to devise an alternative with less environmental impacts, as CEQA requires.

Specifically, the Draft EIR provides the following *objectives*:

- Fulfill the city's **housing** goals by improving access to high quality **housing** and **expanding student housing** opportunities in proximity to open space, public transportation, and a wide range of services and goods.
- Promote **sustainable development** through the **adaptive reuse** of an existing seven-story office building into a **593-bed student** housing development that includes supportive uses and amenities that promote interaction and communication between students such as large lounge areas and active outdoor recreational areas.
- Promote **pedestrian** and **bicycle safety** and **access** to the Project Site by engaging with the existing dedicated bike throughfare along Pacific Coast Highway with bicycle parking and lockers on the subterranean parking level 1.
- **Increase access** to **alternative** transportation options on the Project Site including **zip cars** and **electric scooters**. Increase **accessibility** to the Project Site through a d**edicated ride share** pick-up and drop-off locations along East **Anaheim Street**.
- Provide a development that complements and improves the **visual character** of the area by connecting with the surrounding urban environment through a high level of architectural design, including light materiality, landscape features, and active ground floor uses with open space amenities.

- Provide **safe student housing** through terraced landscape buffers and a security fence and gate.
- Create a development with **high quality design** that supports environmental sustainability through energy efficiency, **water conservation**, and the **reduction of greenhouse gas emissions** through such features as **solar photovoltaic** power, electric vehicle charging stations, energy-efficient appliances, water efficient plumbing fixtures and fittings, and water-efficient landscaping.

(DEIR, p. ES-2—3, emph. added.)

The above-noted objectives do not explain *how* a *student dormitory* increases *housing* in Long Beach or *why* does the Project necessarily need to increase *housing* or *why* can't it simply add more commercial uses or change the type of commercial uses at the Project Site. As yet another evidence of an attempt to draft narrow objectives to precisely mirror the desired project is the EIR's reference to *593* beds in the Project objectives.

Notably, based on these narrowly-drafted objectives and for the noted reasons, the City rejects *two* alternatives of **New Office Tenant Alternative** and **Fewer Unit Alternative** and claims that those are infeasible as they do not allow development of the site with student housing to meet housing demands. (DEIR, p. 5-86.)

In the words of the Court, which found improper alternatives and improper objectives in an analogous situation:

> In taking this artificially narrow approach for describing the project objectives, the County ensured that the results of its alternatives analysis would be a foregone conclusion. It also, as a result, transformed the EIR's alternatives section—often described as part of the "core of the EIR" (*In re Bay-Delta, supra*, 43 Cal.4th at p. 1162)—into an empty formality.

(*We Advocate Through Environmental Review v. County of Siskiyou* (2022) 78 Cal.App.5th 683, 692.)

As such, the EIR is defective for relying on *improper objectives* as described above.

And, as a result and derivatively, the EIR is also flawed for proposing a legally inadequate set or alternatives, which are, in addition, legally flawed by themselves.

## RESPONSE NO. 5-14

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment incorrectly asserts that the Project objectives are narrowly-drawn Project objectives. The Project objectives were designed by the Lead Agency to be consistent with the City's General Plan. As discussed on page 4.9-8 through 4.9-17 within Section 4.8, Land Use and Planning of the Draft EIR, the City's General Plan includes various policies and strategies aimed at implementing sustainable development for adaptive reuse projects and expanding access to housing. As such, the Project objectives would be consistent with the City's General Plan and would be adequate for the Project. Furthermore, the New Office Tenant Alternative and Fewer Unit Alternative would not fully support the Project Objectives as they would fail to provide opportunities for sustainable development and additional housing in the City.

The Project is not associated with CSULB and caters to students living off-campus who would otherwise live in housing that is not restricted for students. By providing housing specifically for students, it alleviates the demand on existing housing opportunities within the surrounding community, thereby supporting the City's objectives to provide more housing opportunities. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-15

**1. No Build/No Project – Alternative 1**

> The Draft EIR's description of the No Build/No Project alternative includes: "The existing **office building** is approximately **120,000 sf,** of which **109,600 sf** is currently **leased** (as of January 2024). The western side of the Project Site adjacent to Clark Avenue includes a surface parking lot, driveway, and landscaping. There is signage for the existing office building on the northern corner of the Project Site along Pacific Coast Highway."

(DEIR, p. ES-18, emph. added.)

The Draft EIR does not specify what kind of offices or commercial uses are present on site. The communications we have obtained from the City indicate that those commercial uses may be medical offices or may be general uses. The Draft EIR in a different section briefly describes the Project site as a medical office site. (Draft EIR, p. 4.9-3 ["medical office building"].) But the information on Internet shows that the Project site is advertised for lease space unrelated to medical offices, and the only medical office space we could find at the Project Site was pro-health medical services at Suite #500. (**Exhibits H-I** [Printouts from website re 5150 Pacific Coast Hwy, Long Beach, CA].)

As the City's own communications confirm (**Exhibit J** [City email of March 27, 2024 to DB Applicant re types of uses, i.e., medical or general offices] & **Exhibit K** [City email of Feb. 14, 2023 asking: "Do you know the current occupancy of the building? Empty, half full, full? This could play a substantial role in determining the CEQA baseline, and in turn, the feasibility of clearing CEQA for the project with an IS/MND or a focused EIR. Total building area is approximately [sic.] 120,000 sf., and 109,600 sf. is currently leased."]), it is important to verify the types of uses on the Project site in order to accurately determine the environmental impacts of the *proposed* Project and alternatives and their impacts as compared to such uses.

Since the EIR fails to identify this critical information about the types of uses at the Project Site, it fails to serve its informational goal by providing the information on the No Build/No Project Alternative.

## RESPONSE NO. 5-15

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment incorrectly states that the Draft EIR does not provide enough information to analyze the No Build/No Project Alternative. As described on page 2-1 within Chapter 2, Project Description, of the Draft EIR, the existing office building is approximately 120,000 SF, of which 109,600 SF is currently leased. Furthermore, as discussed on page 4.9-3 within Section 4.9, Land use and Planning of the Draft EIR, the Project includes medical offices. Nevertheless, the

existing building is categorized as an office building. The Project baseline was evaluated as an existing general office building.

As discussed in CEQA Guidelines 15126.6, the EIR is only required to include sufficient information about each alternative to allowing for a meaningful analysis and comparison with the Project. The Draft EIR's inclusion of the amount of office uses in square feet as well as the size and the location of the building provides enough information to provide a comparative analysis between the alternative, the Project, and the other alternatives included in the Draft EIR. Based on the substantial evidence presented in the Draft EIR, and the whole record before the Lead Agency, the information presented for the No Build/No Project Alternative identified in the Draft EIR are considered adequate and appropriate. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-16

In addition, the EIR fails to specify the number of subterranean or surface parking spaces that exist on the Project site, although all other Alternatives propose to remove the surface parking and rely on the subterranean parking only. Notably, as noted earlier, per the City's records, 17 surface parking spaces and also 34 subterranean parking spaces will be removed by the Project.

As shown in the Alternatives below, the Draft EIR provides a different count of parking stalls per Alternatives 2-4, even though all of those alternatives utilize *only* the subterranean three-level parking and therefore cannot be increased. Notably, even with the lower parking space number mentioned in the Draft EIR for the Project, some of the provided parking will be *tandem,* i.e., back-to-back:

> The Project would provide **0.61 spaces** per bed, which would result in **364 proposed vehicle parking stalls**. The Project would continue to encourage the use of walking, cycling, and transit by maintaining existing pedestrian, bicycle, and transit access to the Project Site. The Project would also provide **150 new parking spaces** and a **rideshare** drop-off and drop-off area, which would further encourage the use of cycling and carpooling.

(DEIR, p. 4.12-10, emph. added.)

The Draft EIR also provides:

The Project would include **three levels** of **subterranean** vehicular parking, for a total of 133,163 SF. There would be a total of **364 parking stalls** (**218 standard** spaces, **19 accessible** spaces, **127 tandem spaces**). The Project would also include **150 bicycle parking spaces** on the **first floor** of subterranean parking. Outdoor amenities would be located throughout the Project Site, including a fitness turf, wading pool, shade structure, and flexible lawn east of Clark Avenue, and an outdoor dining patio west of the Pacific Coast Highway. The exterior of the building would remain the same, with the addition of decorative window film and improvements to the ground level entryways; however, the majority of the adaptive reuse would involve tenant improvements to the interior of the building.

(DEIR, p. 5-1, emph. added.)

As evident from the above two quoted sections, the EIR's described 150 new parking spaces of Project are not *vehicle parking* spaces, but rather *bicycle* spaces. But the EIR fails to clarify this detail, thereby providing a misleading description of the Project against which the Alternatives are compared.

Based on the above-mentioned, it is reasonably foreseeable that parking stalls within the 3-level subterranean parking under some Alternatives that *exceed* the 364 parking stalls will include *even more* tandem spaces, which is not duly disclosed.

## RESPONSE NO. 5-16

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. As described in Chapter 2, Project Description, of the Draft EIR, the Project is currently developed with a seven-story office building with three levels of subterranean parking. The Project would adapt the existing parking on the Project Site to include 364 parking stalls (218 standard spaces, 19 accessible spaces, 127 tandem spaces). The Project would also include 150 bicycle parking spaces. While the exact number of parking stalls is not specified for the existing parking available on site, this information is not necessary to conduct an accurate and adequate environmental review. As discussed in Section 4.12, Transportation, existing vehicle trips are calculated using the ITE's guidance for the land uses on site, not parking. Other than complying with the Lead Agency's parking requirements during operation of the project (of which the project is exempt per AB 2097), parking is not a CEQA topic.

Additionally, please refer to *RESPONSE NO. 5-15*, which discusses that an EIR is only required to include sufficient information about each alternative to allow for a meaningful analysis and comparison with the Project. Identifying an exact amount of parking stalls for each alternative is not necessary to meaningful compare the environmental impacts of each alternative to the Project. As such, the Draft EIR provides an adequate alternatives analysis, and the and the findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-17

### 2. Market Rate Housing – Alternative 2

The Draft EIR's *second* Market Rate Housing Alternative is also inaccurately described. It offers **149 units**, comprised of **65 one-bedroom**, **44 two-bedroom**, **40 three- bedroom** apartments, resulting in approximately **273 bedrooms total**. Among other amenities, a dog park, outdoor BBQ with picnic tables, a flexible lawn with artificial turf, an outdoor patio, and an outdoor pool would be provided. It is unclear if the outdoor pool will be a shallow wading pool as with the Student housing or a deep pool.

Critically, the City mentions that AB 2097 parking requirement reductions will apply and the City would not enforce minimum parking requirements. This claim is inaccurate for several reasons. First, for the same reasons noted in Section IV.A, *supra,* AB 2097 does not apply to this Project. Second, the City has the authority and should enforce parking requirements and make specific adverse impact findings since Alternative 2 offers no affordable units at all.

Relying on AB 2097, Alternative 2 will provide only **273 parking** spaces for **273 units**. Such reliance, again, is misplaced and misleading to decisionmakers and the public.

## RESPONSE NO. 5-17

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment states that Alternative 2 is unclear as it does not provide sufficient information about the Project's amenities and is not eligible for AB 2097. As described on page 5-25, within Chapter 5, Alternatives, of the Draft EIR, Alternative 2 would offer market rate housing and would include 149 units, comprised of 65 one-bedroom, 44 two-bedroom, and 40 three-bedroom apartments, resulting in approximately 273 bedrooms total. This Alternative would offer various amenities for residents, including a laundry room, mailroom, loungeroom, and theatre. Outdoor amenities would include a dog park, outdoor BBQ with picnic tables, a flexible lawn with artificial turf, and an outdoor patio. An outdoor pool would be provided. The commentor states that it is unclear how deep the proposed pool would be under Alternative 2. However, under CEQA alternatives do not need to be analyzed in the same level of detail as the Project. Please refer to *RESPONSE NO. 5-16*.

The comment asserts that Alternative would not be eligible for AB 2097. However, the Project would be a market rate residential project in proximity to major transit stations. As described on page 4.12-5 within Section 4.12, Transportation, of the Draft EIR the Project Long Beach Transit (LBT) has multiple stops that travel along the Project Site frontages, including Line 41, 45, and 46 which travels west/east along East Anaheim Street. These LBT routes provide service to the Los Angeles County Metropolitan Transportation Authority (Metro) Downtown Long Beach Station 3.57 miles southwest of the Project. Additional LBT stops for Lines 171 and 175 are provided 250 feet east of the Project Site. Various other LBT Lines, including Lines 91, 111, 112, 121, and 173, are located within 0.5 miles of the Project Site. Therefore, the Project would be eligible for AB 2097. As such, findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-18

### 3. Senior Living and Student Housing – Alternative 3

The Draft EIR's *third* Alternative is the Senior Living and Senior Housing – where the Draft EIR allocates the *first* floor for *administrative* offices and *amenities*, the *second-third* floors are provided for *senior housing* (50 one-bedroom units), and *third* to *seventh* floors will be *student housing* of 395 beds – 125 one-bedroom, 75 two-bedroom, and 40 three- bedroom units, resulting in a total of 243 dwelling units and 395 beds of student housing. This alternative provides one shared kitchen and lounge on *each floor* from the *third* to *seventh* floors, but no pool.

Here, too, the Draft EIR provides that AB 2097 applies, which is incorrect for reasons stated in Section IV.A, *supra.*

Improperly relying on AB 2097, Alternative 3 would provide a total of **445 parking** spaces to serve the senior living uses (50 spaces for 50 one-bedroom units and 395 spaces for student housing). (DEIR, p. ES-18.) As noted earlier, it follows that *either* all of the parking in excess of 344 will be *tandem* parking or a large part of the 445 parking spaces will be bicycle parking, rather than vehicle parking. The Draft EIR fails to provide those details on this Alternative, along with the feasibility of fitting 445 parking spaces in the 3 levels of subterranean parking where the Project plans to reduce parking by 34 spaces.

Also, as with other alternatives, the Draft EIR here fails to consider parking for employees of the student housing (commercial) portion.

## RESPONSE NO. 5-18

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment summarizes Alternative 3 and states that Alternative 3 is not eligible for AB 2097. As described on page 5-45 within Chapter 5, Alternatives, of the Draft EIR, Alternative 3 would be subject to AB 2097 parking requirements as Alternative 3 would provide housing and would be located within one-half mile of public transit options, including LBT services. Furthermore, the comment states that Alternative 3 fails to consider parking for employees, however, page 5-45 of the Draft EIR states that the Project would provide 50 spaces for residents and employees of the senior living component. Please also refer to *RESPONSE NO. 5-16* and *5-17*. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-19

### 4. Student Housing and Office Space – Alternative 4

Alternative 4 would adaptively reuse the building and develop student housing and office space, with separate entrances and elevators for each. Outdoor amenities would include an outdoor dining patio, patio, and fitness turf wit equipment, but no outdoor pool.

The second to fifth floor would provide 240 dwelling units comprised of 125 one- bedroom, 75 two-bedroom, and 40 three-bedroom units, resulting in the 395 beds overall for student housing. The sixth-seventh floor would provide 34,300 sf. of office space, which – purportedly per SCAG's employment summary report – would require 440 average sf per employee, resulting in approximately 77 office employees.

Alternative 4 – as all other Alternatives 1-3 – would maintain the existing three levels of subterranean parking.

The EIR also inaccurately provides that Alternative 4 would be subject AB 2097 parking requirements and thereby would provide 1 parking spot per student (395 spaces) and 77 spaces for the office component, i.e., **472 parking spaces** to serve both uses. (DEIR, p. ES-19.) For reasons mentioned for Alternative 3, *supra,* the Draft EIR fails to provide accurate information or feasibility of fitting 472 parking spaces in an enclosed 3-level subterranean parking or describe which portion of the noted 472 parking spaces will be vehicular.

In sum, the EIR fails to provide the *feasibility* of all Alternatives 2-4 and their parking allocation; it also fails to accurately inform on the number, configuration, and type of parking spaces that are possible to fit in an enclosed 3-level subterranean parking. This missing information is prejudicial and makes the EIR's discussion of the range of Alternatives legally inadequate, misleading, and unhelpful to make an informed decision.

## RESPONSE NO. 5-19

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment summarizes Alternative 4 and states that Alternative 4 is not eligible for AB 2097. As described on page 5-65 within Chapter 5, Alternatives, of the Draft EIR, Alternative 4

would be eligible for AB 2097 parking requirements as Alternative 4 would be located within one-half mile of public transit options including LBT bus service. As such Alternative 4 would be eligible for AB 2097. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required. Please also refer to *RESPONSE NO. 5-16, 5-17,* and *5-18.*

## COMMENT NO. 5-20

**5. The EIR Fails to Include an Adequate Range of Alternatives, Including a Reduced Alternative to the Project.**

As our Supreme Court noted:

> The process of selecting the alternatives to be included in the EIR begins with the establishment of project objectives by the lead agency. "A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings.... The statement of objectives should include the underlying purpose of the project." (Cal.Code Regs., tit. 14, § 15124, subd. (b).)

*(In re Bay-Delta etc.* (2008) 43 Cal.4th 1143, 1163 ["*In re Bay-Delta*"].)

"Objectives chosen should be broad enough to permit a reasonable range of alternatives. (Cit. omit.)" (*California Oak Foundation v. Regents of University of California* (2010) 188 Cal.App.4th 227, 273–274.)

At the same time, an EIR should be found legally inadequate if it contains an overly narrow range of alternatives. (*Watsonville Pilots Ass'n v. City of Watsonville* (2010) 183 Cal.App.4th 1059, 1087 ("*Watsonville*") [not considering a reduced development alternative was error].) "The purpose of an EIR is not to identify alleged alternatives. . . so that these alleged alternatives may be readily eliminated." *Id.* EIR's failure to analyze a reduced alternative is a CEQA violation. (*Id*. at 1090.)

The Draft EIR here does not include a reduced alternative to the Project. Specifically, the Project proposes 149 student suites for 593 beds, and 364 parking stalls. (DEIR, p. 2-1 & 5-1.) A reduced alternative could be a different configuration of student suites to result in *less* number of beds. But there is no such Alternative provided.

Instead, as listed above, the fewer student housing and beds provided in Alternatives 3-4 necessarily *also* include either *senior housing* or *commercial office* space.

Notably, while the Draft EIR mentions a *Fewer Unit* alternative, it *rejects* that alternative as infeasible and thereby fails to analyze it either. (DEIR, p. 5-86.) But, as mentioned in *Watsonville,* alternatives are not to be listed in order to be rejected as infeasible. As discussed in Section IV.B.6, *infra*, the infeasibility argument in the Draft EIR is also legally flawed and unavailing.
As such, the EIR's alternatives' analysis is legally flawed as it fails to include *all* feasible alternatives, including the required *reduced density* alternative.

## RESPONSE NO. 5-20

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment states the commentors' belief that a Project be required to analyze a reduced alternative under CEQA. As stated in Section 15126.6. *Consideration and Discussion of Alternatives to the Project* of the State CEQA Guidelines, an EIR shall describe a range of reasonable alternatives to the project, selected by the lead agency; however, an EIR need not consider every conceivable alternative to a project. Furthermore, a lead agency must evaluate a "no project" alternative and reasonable project alternatives. As such, a reduced project size may serve as a reasonable project alternative; however, it the lead agency would not be required to analyze a Reduced Project Alternative. The Project is an adaptive reuse of an existing building; therefore, all of the alternatives have been tailored to a reasonable range that would best utilize the space of the existing building, address the project objectives, and be feasible. The Project evaluates four alternatives, including the No Project Alternative, Market Rate Housing, Senior Living and Student Housing, and Student Housing and Office Space, which provide a reasonable range of Project Alternatives as defined under CEQA. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-21

**6. The EIR's Rejection of Two Alternatives as Infeasible Is Meritless**

> The EIR's discussion of alternatives is also lacking and inadequate. As courts noted: The discussion must 'focus on alternatives capable of eliminating any significant adverse environmental effects or reducing them to a level of insignificance, **even if** these alternatives would **impede** to some degree the **attainment** of the **project objectives**, or would be **more costly**.'(Guidelines, § 15126[9], subd. (d)(3).)" (*Kings County Farm Bureau v. City of Hanford, supra,* 221 Cal.App.3d at p. 733, 270 Cal.Rptr. 650.)
>
> > This discussion of alternatives must be "meaningful" and must "contain analysis sufficient to allow informed decision making." (*Laurel Heights, supra,* 47 Cal.3d at pp. 403–404, 253 Cal.Rptr. 426, 764 P.2d 278.) The decision to require mitigation measures does not remove the need to consider project alternatives in the EIR. (*Id.* at pp. 401–402, 253 Cal.Rptr. 426, 764 P.2d 278.) Because the FEIR's discussion of alternatives is "lacking in any concrete information or analysis," it fails to meet this standard.

(*San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 735, emph. added.)

Also, CEQA does not require that Alternatives achieve *all* of the Project's objectives. Instead, it is sufficient that Alternatives achieve *most* of the Project's objectives – assuming, of course, those objectives are also neither too broad nor too narrow, as discussed above. (CEQA Guidelines § 15126.6(a)&(c).)

Here, the Draft EIR rejects two alternatives for allegedly *infeasibility* or *failure to meet* the Project's *housing* objective: (1) New Office Tenant Alternative; and (2) Fewer Unit Alternative. (DEIR, p. 5-

86.) The Draft EIR's reasoning for finding those alternatives are infeasible is that those alternatives do not meet the City's housing goals. For example, for the rejected *New Tenant* Alternative, the Draft EIR provides:

> Redeveloping the Project Site with new office tenants was **considered**. This **alternative** would **not** meet the Project **objectives**, specifically to adaptively reuse an existing underutilized office building with a **student residential building** that would help the City **meet** its **RHNA goal** and **goals** and **policies outlined** in the City of Long Beach **General Plan**. New office tenants would not address the City's **Housing Element goals** and **increase housing opportunities** that would address **unique housing** needs for **special needs residents** such as **students**. Improving the existing Project Site with new office tenants would not fulfill the city's **housing goals** by expanding student housing opportunities in proximity to open space, public transportation, and a wide range of services and goods. Taking these factors into consideration, an office development **alternative** was **not** carried forward for **further analysis**.

(DEIR, p. 5-86, emph.. added.)

Similarly, for the *Fewer Unit* Alternative, the Draft EIR provides:

Redeveloping the Project Site with fewer residential units was considered. This alternative would **not** help to meet the Project's objectives to the **same degree as** the Project. By providing **fewer units** and **beds**, the Project Site would become **underutilized** and would **not** allow the City to reach its **RHNA goals** at the same time **as** the Project **would**. Additionally, **fewer beds** would result in **less housing** in close proximity to open space, public transportation, and a wide range of services and goods in the City. Taking these factors into consideration, a **residential** development alternative was **not carried** forward for **further analysis**.

(DEIR, p. 5-86, emph. added.)

Notably, the Draft EIR fails to explain *how* a student dormitory meets the RHNA goals. And, for a reason. The RHNA is about *housing – not* transient dormitories. Specifically, nowhere in the Gov. Code § 65584, which regulates the housing element of the General Plan, does it mention about dormitories or student housing.

Also, that the proposed alternative would not meet the Project's objectives "to the same degree as the Project" does not determine whether it is feasible or not. As the Draft EIR notes:

… CEQA requires that alternatives evaluated in an EIR be potentially feasible. CEQA **defines feasibility** as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors" (Pub. Res. Code Section 21061.1). Section 15126.6(f)(1) of the CEQA Guidelines identifies the factors to be considered when addressing the feasibility of alternatives, including **site suitability**, economic **viability**, availability of **infrastructure**, general plan **consistency**, other plans or regulatory **limitations**, jurisdictional **boundaries**, and whether the proponent can reasonably acquire, control, or otherwise have access to an **alternative site**.

(DEIR, p. 5-85, emph. added.)

Notably, nowhere in the City's definition or restatement of CEQA, does CEQA define feasibility as the ability to meet the Project objectives to the "same objectives" or to meet *all* of the Project objectives, as the EIR's above-noted two examples of Alternatives note.

Instead, alternatives "shall include those that could feasibly accomplish *most* of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects." (CEQA Guidelines § 15126.6(a)&(c), emph. added) "[T]he discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project…." (CEQA Guidelines § 15126.6(b).)

Also, as described by the Court in an analogous situation: Lastly, Appellants contend that all the County's stated reasons fail to "demonstrate[ ] that the no project alternative is infeasible," reasoning, it appears, that the County's stated reasons are flawed because they are premised on the EIR's unreasonably narrow project objectives. We agree, as mentioned, that the offered project objectives were unreasonably narrow. We also agree that this affected the County's analysis of the no- project alternative and that the County, for this reason, will need to redo its analysis.

(*We Advocate Through Environmental Review v. County of Siskiyou* (2022) 78 Cal.App.5th 683, 692-694, esp. 694.)

Public agencies must refrain from approving projects with significant environmental impacts if there are feasible alternatives that can substantially lessen or avoid those effects. (*Uphold Our Heritagev. Town of Woodside* (2007) 147 Cal.App.4th 587, 597.)

As the Draft EIR admitted, feasible for purposes of CEQA means "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors." (PRC § 21061.1.)

With respect to *economic* factors, "[t]he fact that an alternative may be *more expensive* or *less profitable* is *not sufficient* to show that the alternative is financially infeasible. What is required is evidence that the *additional costs* or *lost profitability* are *sufficiently severe* as to render it *impractical* to proceed with the project." (*Uphold Our Heritage*, *supra*, 147 Cal.App.4th at 599, emph. added (stating also that "the question is not whether [real party] can afford the alternative, but whether the marginal costs of the alternative as compared to the cost of the proposed project are so great that a reasonably prudent property owner would not proceed with the rehabilitation").)

Lastly, the Draft EIR's claims that the two alternatives – Fewer Unit and Other Tenants – will not meet the *housing* goals of the *General Plan* or *Housing Element* are unavailing. We have reviewed the site inventory of the City's most recent housing element and were unable to find 5150 E. Pacific Coast Highway Site of the Project among sites listed as suitable for housing by the City. (**Exhibit L** [Printout of the City's Site inventory of the Housing Element of the General Plan.]) Instead, the Project Site is designated as Community Commercial in the City's Housing Element. (**Exhibit M** [Printout of the City's Site inventory map showing the zoning designation of the Project site].) Notably, the Project seeks General Plan amendments to even *allow* residential uses and also a CUP to allow *special group* uses of

students; in other words, the Project is manifestly inconsistent with the General Plan rather than attempting to accomplish its goals.

In light of the above-noted settled law and legal principles, the City's rejection of the Fewer Units Alternative or Other Tenant Alternatives as infeasible or for failure to provide *housing* and meet the RHNA goals and policies of the City and the City's General Plan is legally and factually unsupported.

Footnote 9: Now, Guidelines § 15126.6.

## RESPONSE NO. 5-21

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment questions the feasibility of the Project alternatives included in the Draft EIR. Project alternatives were reasonably evaluated within Chapter 5 Alternatives of the Draft EIR. As stated within Section 15126.6 of the State CEQA Guidelines, there are no requirements governing the nature or scope of the "reasonable range" of alternatives to be discussed, other than the "rule of reason". The range of alternatives chosen was appropriately based on significant impacts identified in the Draft EIR and as directed by the Lead Agency.

Please refer to *RESPONSE NO. 5-20*. The Project is an adaptive reuse of an existing building; therefore, all of the alternatives have been tailored to a reasonable range that would best utilize the space of the existing building, address the project objectives, and be feasible. The Fewer Units Alternative would not efficiently use the underutilized building on the Project site. Further, the Fewer Units Alternative is typically utilized to reduce the project density or limit of disturbance to reduce Project impacts. Since the Project is adapting an existing building, the Fewer Units Alternative does not reduce the limit of disturbance, and it does not address a significant impact related to increased demand on resources or public services or traffic as the Project would not result in any significant impacts. This has been clarified in Chapter 3, Corrections and Additions, of this Final EIR.

Please also refer to *RESPONSE NO. 5-14*, which explains that providing student housing alleviates demand on the existing housing in the surrounding community. None of the project objectives included in the Draft EIR for the Project state that the project would contribute to the City's RHNA allocation. While some of the alternatives included in the Draft EIR would include residential units that could contribute to the City's RHNA allocation, the objective of the project is to provide student housing and to redevelop an underutilized site.

Findings and conclusions of the Draft EIR are not affected. Changes made in Chapter 3, Corrections and Additions, are clarifying edits that enhance the discussion of the Fewer Units Alternative. The changes do not constitute new information that results in significant new impact. No further response is required.

## COMMENT NO. 5-22

**7. The EIR Fails to List a Preferred Alternative**

The EIR's discussion of alternatives is also incomplete as it does not list a *preferred* alternative, while providing a number of inaccurately-described alternatives. While the EIR mentions the No Build/No Project Alternative 1 and also the Senior Housing and Student Housing Alternative 3 would be the environmentally superior alternatives (DEIR, pp. ES-19—20), it also lists a number of disadvantages leaving the public doubting which *one* of those *two* is the preferred alternative or whether any one of those is actually a preferred alternative at all. We also note that a *preferred* alternative is not the same as the environmentally superior one.

As in *Washoe Meadows Community v. Department of Parks & Recreation* (2017) 17 Cal.App.5th 277, 288-289 ("*Washoe Meadows*"), the EIR here with four alternatives presents a "moving target" (*id*.) typical of a scoping plan, which usually has to be prepared before the EIR is drafted.

In view of the above-noted, the EIR's range and discussion of alternatives are legally inadequate and missing critical information, and the EIR must be recirculated to provide a preferred alternative and an accurate range of alternatives, to allow the public's meaningful evaluation of their impacts and to enable a choice.

## RESPONSE NO. 5-22

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The commentor asserts that the Draft EIR fails to list a Preferred Alternative. According to Section 15126.6 of the State CEQA Guidelines, an alternative's discussion must only identify an environmentally superior alternative that is not the "no project" alternative. As such, a Preferred Alternative is not required by the State CEQA Guidelines. As discussed on page 5-87 within Chapter 5 Alternatives of the Draft EIR, Alternative 3 would be considered the environmentally superior alternative because impacts would be similar or less than the Project. Therefore, the Draft EIR's discussion of alternative is legally adequate. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-23

### C. The Draft EIR is Legally Flawed Since its Baseline Assumptions are Flawed and Inaccurate.

"Without an adequate baseline description, analysis of impacts, mitigation measures and project alternatives becomes impossible." (*County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 953.) " 'An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.'" (*Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 320–321.)

The Draft EIR fails the above-noted informational disclosures of accurate baseline conditions. The Draft EIR fails to disclose the type and hence the intensity of the office uses at the Project Site. The Draft EIR's *one-page* baseline description briefly provides, in part:

> **3.2 Project Site Setting**
>
> **Figure 2-2: Local Vicinity and Surrounding Land Uses Map**, depicts the Project Site and immediate vicinity. The Project Site is located in the eastern part of the City. The Project Site is **generally bounded** by the Pacific Coast **Highway** to the north and east, East Anaheim **Street** to the south, and Clark **avenue** to the west. The Project Site is **surrounded by commercial**, **office**, **residential**, and **religious uses** to the north and east past the Pacific Coast Highway; a **recreational golf course** (Recreational Park Golf Course 18) to the **south**; and **commercial** and **residential** uses to the west.
>
> **3.3 Cumulative Development**
>
> **Section** 15355 of the CEQA Guidelines defines "cumulative impacts" as "**two** or **more** individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." This means that while the impacts of projects on their own may be insignificant, when analyzed in combination with impacts from other projects in the vicinity, they may be significant. CEQA Guidelines section 15130 requires EIRs to discuss the cumulative impacts of a project "when the project's incremental effect is cumulatively considerable."
>
> Each impact analysis discussion provided in **Chapter 4, Environmental Impact Analysis**, includes a cumulative impacts discussion; however, **no Projects** were **identified** within a **1-mile radius** of the Project as meeting the **City's criteria of 5,000 SF** or greater of **new** commercial and/or industrial and greater than 10 **new** dwelling units.

(DEIR, p. 3-1, emph. added.)

**First**, as shown above, the Draft EIR fails to identify the actual uses at the Project Site. And yet, the Project will displace those uses and *move* those to a different location.

Elsewhere, the Draft EIR provides: "The existing office building is approximately 120,000 sf of which 109,600 sf is currently leased (as of January 2024)." (DEIR, p. 4.3- 8.) Also, the Draft EIR fails to identify the types of such uses at the Project site for their intensity purposes; for example, as noted in the City's own communications and in our research (**Exhibits H-K**), how much of the building is leased and the types of uses at the Project site are important to make an accurate baseline for CEQA.

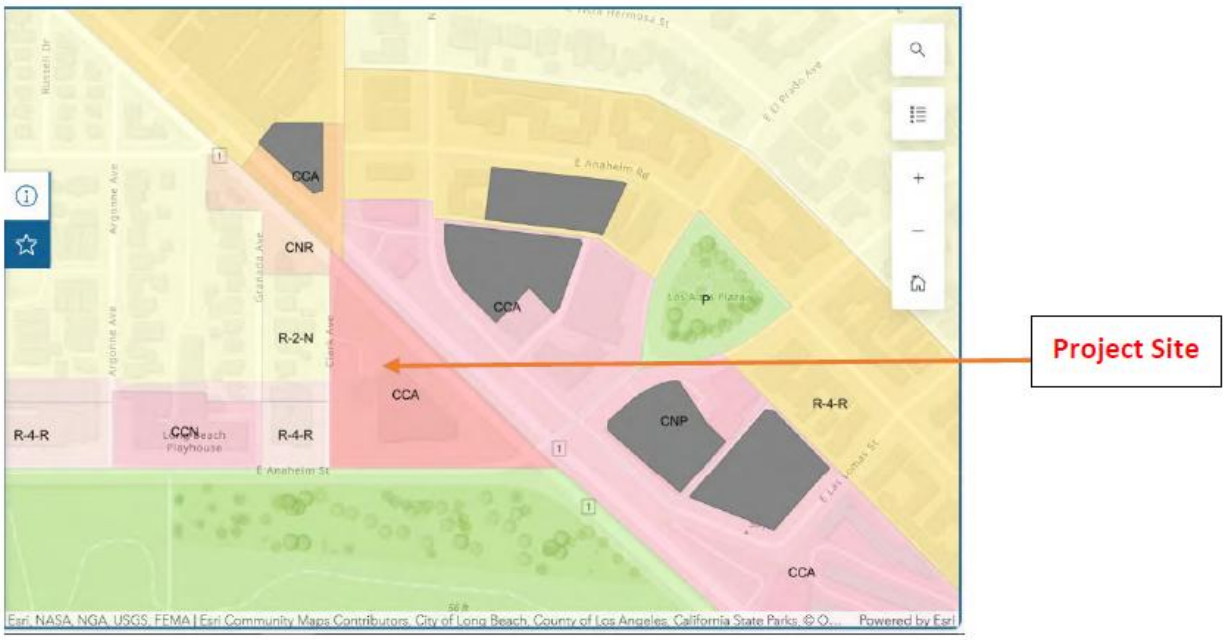
## RESPONSE NO. 5-23

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment incorrectly states that the Draft EIR does not accurately describe baseline conditions. The Draft EIR provides information regarding the Project's existing conditions. As described on page 2-4 within Chapter 2 Project Description of the Draft EIR, the Project Site is currently developed with a seven-story office building and three levels of subterranean parking. The existing office building is approximately 120,000 sf, of which 109,600 sf is currently leased (as of

January 2024). The western side of the Project Site adjacent to Clark Avenue includes a surface parking lot, driveway, and landscaping. In addition to the existing building and small surface parking lot on the ground level, there is a mix of ornamental landscaping on the Project Site, including a tree along Clark Avenue. On the western side of the Project Site, there is a sparsely landscaped open space area. There are four street trees along the Pacific Coast Highway. There is signage for the existing office building on the northern corner of the Project Site along Pacific Coast Highway. Furthermore, the Draft EIR describes the Project's surrounding land uses and zoning. As such, the Draft EIR adequately describes the Project Site's existing conditions. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-24

**Second**, the Draft EIR provides a very brief and generalized summary of surrounding uses of the Project. Based on the map of the Housing Element Site Inventory, the Project is surrounded by residential R-2, R-4 uses, as shown in the screenshot below:




## RESPONSE NO. 5-24

The comment is noted for the record and will be forwarded to decision-makers for their review and condition. The comment incorrectly states that the Draft EIR does not accurately describe surrounding land uses. Pages 2-4 and 2-5 of Chapter 2, Project Description of the Draft EIR contain Table 2-1, Project Site and Surrounding Land Uses, which provides the existing land use designations and zoning for the Project site and land uses per the City of Long Beach's Geospatial Information System (GIS) "Map It" feature. As described in Table 2-1, the surrounding zoning to the north includes parcels zoned as Community Commercial Automobile-Oriented (CCA) District, Moderate-density Multiple Residential (R-4-R) District; Moderate-density Multiple Residential (R-4-R (HL-25)) District. The surrounding zoning to the south includes parcels zoned as Park (P) District.

The surrounding zoning to east includes parcels zoned as CCA District; Neighborhood Pedestrian-Oriented Commercial (CNP) District; and P District. The surrounding zoning to the west includes parcels zoned as R-4-R District, Two-family Residential, standard lot (R-2-N) District, and Neighborhood Commercial and Residential (CNR) District. As such, the Draft EIR accurately describes the surrounding zoning as residential, mixed use, commercial, and recreational uses. No further response is warranted. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-25

Moreover, the Housing Element Site Inventory shows that 5155 E. Pacific Coast Highway Site – just across from the Project site – is marked as suitable for residential development of 79 market-rate units (**Exhibit L,** p. 3), even though per google map images of that site as of the date of this comment letter, that site is not yet developed into a residential use (displays the sign of a Masonic facility), as shown below:




As such, the Draft EIR fails to present an accurate and precise description of land uses around the Project and therefore also taints the impact analysis in the EIR, since the Project's impacts are measured against the existing environmental baseline and land uses, including the density and intensity of the adjacent and proximate land uses.

## RESPONSE NO. 5-25

This comment is noted for the record and will be provided to the decision-makers for review and consideration. The comment incorrectly states that the Draft EIR does not accurately describe the uses surrounding the Project Site. According to the City of Long Beach MapsLB Data portal, the site identified above is currently zoned Commercial (C) and is specifically part of the Community Commercial Automobile Oriented (CCA) District, as further indicated on page 2-4 of Chapter 2, Project Description, of the Draft EIR. Based on the substantial evidence presented in the Draft EIR, and the whole record before the Lead Agency, the environmental baseline in the Draft EIR is

considered adequate and appropriate. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-26

**Third**, the Draft EIR's **cumulative impacts** analysis is flawed. It claims:

> Each impact analysis discussion provided in Chapter 4, Environmental Impact Analysis, includes a cumulative impacts discussion; however, no Projects were identified within a 1-mile radius of the Project as meeting the **City's criteria** of 5,000 SF or greater of **new** commercial and/or industrial and greater than 10 new dwelling units.
>
> (DEIR, p. 3-1, emph. added.)

The claim is factually and legally inaccurate, as it focuses only on *new* uses. Yet, under CEQA, the projects that are deemed related and must be considered for cumulative impact analysis are not only *new* ones*,* but rather "past, present, and probable future projects." Specifically, CEQA Guidelines § 15130(b) provides:

> (b) The discussion of cumulative impacts **shall reflect** the **severity** of the impacts and **their likelihood** of **occurrence**, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the **cumulative impact** to which the **identified other projects contribute** rather than the attributes of other projects which do not contribute to the cumulative impact. The following elements are **necessary** to an adequate discussion of significant cumulative impacts:
>
> (1) Either:
>
> (A) A list of **past**, **present**, and **probable future projects** producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, **or**
>
> (B) A **summary** of **projections** contained in an adopted **local**, **regional** or **statewide plan**, or related **planning document**, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A **summary** of **projections** may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any **such document** shall be **referenced and** made **available** to the **public** at a **location specified** by the lead agency.

(Emph. added.)

The Draft EIR's cumulative impacts discussion manifestly fails to comply with either the option A or B under CEQA Guidelines § 15130(b)(1). It focuses only on the *new* projects for purposes of subsection A, and it fails to name any regional or local plan, much less reference any source of such projections of potential growth and uses for purposes of subsection B. Notably, as mentioned above, even though the Housing Element of the City's General Plan identifies the Project's immediately adjacent (across) 5155 E. Pacific Coast Highway address in the housing site inventory

as a suitable site for housing development – thereby making it a *probable future* project – the Draft EIR claims that there are *no new* projects within 1 mile radius of the Project.

For all the reasons noted above, the EIR's baseline assumptions are inaccurate, which, in turn both make the EIR legally inadequate and also taint the rest of the impact analysis in the EIR, as further detailed below.

## RESPONSE NO. 5-26

This comment is noted for the record and will be provided to the decision makers for review and consideration. The commenter states that the Draft EIR does not adequately characterize cumulative projects. As indicated on page 3-1 within Chapter 3, Environmental Settings of the Draft EIR, the City did not identify any projects within a 1-mile radius of the Project as meeting the City's criteria of 5,000 SF or greater of new commercial and/or industrial and greater than 10 new dwelling units. It is the Lead Agency's discretion to determine the geographic scope of the cumulative projects list. In this case, the City has defined "new" as any development recently approved, currently under construction, or reasonably foreseeable to occur thereby meeting CEQA requirements for analyzing cumulative impacts and maintaining a consistent approach for cumulative analysis project to project. CEQA guidelines do not specify specific criteria for how a lead agency determines past, present, or reasonable foreseeable project or a specific number of projects that must be included in the cumulative analysis.

Additionally, each impact analysis discussion provided in Chapter 4, Environmental Impact Analysis, of the Draft EIR includes a cumulative impacts discussion that is specifically tailored to the resources area that it is analyzing. Therefore, based on the substantial evidence presented in the Draft EIR, and the whole record before the Lead Agency, cumulative impacts identified in the Draft EIR are considered adequate and appropriate. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-27

**D. The Draft EIR's Impact and Mitigation Analysis and Findings are Legally Inadequate and Unsupported by Substantial Evidence.**

For reasons mentioned in Section IV.A-C, the Draft EIR's impact analysis is flawed *ab initio,* since the EIR fails to provide an accurate project description and an accurate baseline, and since it improperly relies on AB 2097 and incorrectly presumes it applies.

In addition, the Draft EIR's impact analysis is flawed as it improperly concludes that certain impacts are less than significant by relying on unsupported baseline assumptions. The Draft EIR noted the following impacts and areas:

> **No Impacts:** aesthetics; agriculture and forestry; mineral resources; wildfire.
>
> **Less than significant impact:** air quality; biological resources; energy; greenhouse gas emissions ("**GHG**"); hazards and hazardous materials; hydrology and water quality; land use and planning; population and housing; public services; recreation; transportation; utilities and service systems.
>
> **Less than significant with mitigation:** cultural resources; geology and soils; noise;

tribal cultural resources.

(DEIR, p. ES-23[10]-25)

As evident from the above-noted, the City qualified the most critical impacts of air quality, GHG, land use, biological resources, hazards, water, population and housing, transportation, utilities, public services as "less than significant." And by qualifying so, the City failed to duly analyze those impacts or provide mitigation for those.

Footnote 10: We noted that the EIR's ES-22 page is missing.

## RESPONSE NO. 5-27

The comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment reiterates the Draft EIR's significance findings. Table ES-1 on pages ES-6 through ES-16 within the Executive Summary of the Draft EIR provides a summary of the environmental impacts, mitigation measures, and residual impacts analyzed in the Draft EIR. Table ES-2 on pages ES-23 through ES-28 within the Executive Summary of the Draft EIR provides a summary of the Project's impacts compared to Alternatives analyzed for the Project. As discussed in Response to Comments No. 5-23 through 5-26, the Project baseline assumptions are accurate and were determined based on an analysis of existing conditions as discussed on page 2-4 through 2.5 within Chapter 2 Project Description of the Draft EIR. Therefore, findings and conclusions of the Draft EIR are not affected.

As noted by Comment No. 5-27, page ES-22 is missing. The page number has been revised in Chapter 3, Corrections and Additions of the Final EIR. Additionally, Table ES-2 in the Executive Summary of the Draft EIR indicated that impacts to noise would be Less than Significant with Mitigation. This has been corrected to Less than Significant in Chapter 3, Corrections and Additions of the Final EIR to reflect the analysis discussed in Chapter 4.10, Noise of the Draft EIR. Findings and conclusions of the Draft EIR are not affected.

## COMMENT NO. 5-28

Similarly and critically for these days, the Draft EIR classified the *wildfire* as "no impact," claiming:

> The Project site is not located in or near an SRA and does not contain lands classified as VHFHSZs. During both construction and operation, Alternative []/Project would be required to maintain adequate emergency access for emergency vehicles as required by the City of Long Beach and the Long Beach Fire Department. Therefore, no impact would occur.
>
> (DEIR, p. ES-27-28.)

However, the devastating wildfires started in Los Angeles since January 7, 2025 and covering various areas, including Pasadena, Altadena, Pacific Palisade, Glendale, Simi Valley, and others, show that wildfires may develop everywhere – not just in the SRA areas or lands classified as VHFHSZ (**Exhibit N** [Information on LA Wildfires and their effect on Residents of Long Beach].)

Long Beach is not any more protected from wildfires than Los Angeles. Therefore, potential impacts of wildfires and availability of evacuation routes and possibilities are all critical concerns for the Project. These concerns are even more pronounced where, as here, the Project proposes to bring

593 beds for students and potentially 593 cars to the area, apart from employees and service personnel at the dorm.

As detailed below, the Draft EIR's conclusions about "less than significant impacts" are legally and factually unsupported.

## RESPONSE NO. 5-28

The comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment expresses concern that the Draft EIR found no impact related to wildfire impacts and incorrectly states that the City of Long Beach is no more protected from wildfires than the portions of Los Angles adjacent to wildlands. As described on page 6-22 within Chapter 6, Other CEQA Considerations, of the Draft EIR, the Project Site is not located within a Very High Fire Hazard Severity Zone (VHFHSZ) in either the State Responsibility Area (SRA) or a Local Responsibility Area (LRA). The nearest VHFHSZ in the SRA is located approximately 16 miles northeast of the Project Site in the City of Brea. The nearest VHFHSZ in the LRA map is located approximately 10 miles west of the Project Site in Rolling Hills Estates. The Project is located in a well-developed highly urbanized area not susceptible to wildfires and is not located near any wildlands that could exacerbate fire risk. Implementation of the Project would not impair an adopted wildfire emergency response plan or emergency evacuation plan. Project design and site access would be required to adhere to the requirements of the Long Beach Fire Department's (LBFD) regulations and the City's Building Code, including the City's Fire Code. Infrastructure associated with Project would not exacerbate wildfire risk and the Project would not be located in an area with potential to expose occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, nor would the Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Accordingly, the Project would not result in wildfire impacts. Based on the substantial evidence presented in the Draft EIR, and the whole record before the Lead Agency, Wildfire impacts in the Draft EIR are considered adequate and appropriate. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-29

### 1. Air Quality Impacts

The Draft EIR's air quality analysis is flawed as it is based on a methodology that improperly understates the Project's impacts. As the Draft EIR describes, sources of operational air quality impacts include *transportation* and *energy*:

> Operation of the Project results in emissions from **area sources** (e.g., landscaping, maintenance equipment.), **mobile sources** (e.g., automobiles and trucks), and **energy sources** (e.g., natural gas usage). **Area source** emissions would be produced through **evaporation** of **solvents** in surface coatings such as primers, paints, and varnishes. In addition, **area source** emissions would include emissions from use of **landscaping** equipment and consumer products such as **detergents**, **cleaning compounds**, **personal care** products, and lawn and garden products. These emissions were calculated using defaults provided in CalEEMod.

> **Energy source** emissions would include emissions produced through the use of **natural gas** CalEEMod defaults were used to estimate the natural gas usage for the Project.
>
> **Mobile source** emissions were primarily derived from **vehicle trips** generated by the Project, including employee trips to and from the site and truck. Trip generation rates and vehicle fleet mix used in the analysis are further discussed in **Section 4.18**, Transportation. Emissions estimates for on-road travel was calculated using CalEEMod.

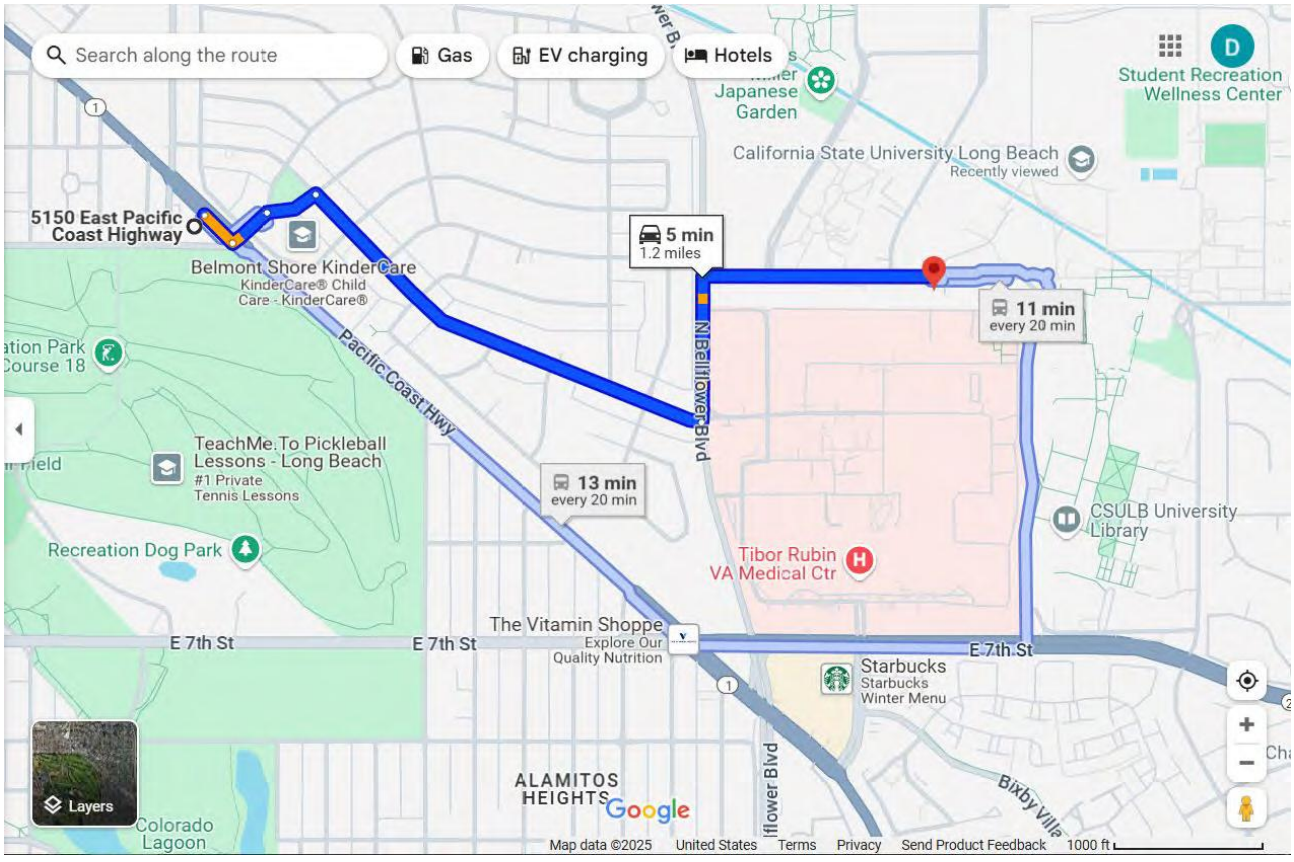
(DEIR, p. ES-4.2-11—12, emph. added.)

And, for operational impacts from vehicles, the EIR provides:

> For construction, CalEEMod calculates emissions from off-road equipment usage and on-road vehicle travel associated with haul, delivery, and construction worker trips. Per the Trip Generation and Vehicle Miles Screening Report prepared by Kimley-Horn for the Project, the Project is anticipated to generate approximately **507 daily vehicle trips**.

(DEIR, p. 4.2-11, emph. added.)

It is questionable, however, how a Project proposing 593 beds for students of the Long Beach University located more than 1 mile away will nonetheless generate only 507 daily vehicle trips. As the screenshot below shows, the proposed Project is about 5 minutes drive away from the University:




It is reasonably foreseeable that all 593 students may have their own cars and may generate over 1000 vehicle trips per day – to and from the University. Moreover, it is reasonably foreseeable that the students may generate *other and additional* daily trips as they may use their cars for *other chores*, since there is no showing that the 5150 E. Pacific Coast Highway site is next to stores. As such, the

EIR's estimate of 507 daily trips is clearly erroneous and understated, and hence the EIR's operational air quality impacts analysis which relies on that low-estimate 507 daily vehicle trips is clearly erroneous as well. While the Draft EIR elsewhere explains that the 507 daily vehicle trips are based on crediting the daily trips from the *existing office uses*, this crediting is unsupported and erroneous for many reasons, including the *intensity* of the office uses (day, hours) compared with student housing, and the fact that the existing uses will not be extinguished but will merely relocate elsewhere and continue to *add* to vehicle miles.

Moreover, the Project must also count the air quality and trip volumes of the existing uses at the Project site since those will not be extinguished either but rather move to a different area. Those additional trips include trips generated by various offices of the allegedly mostly leased Project Site, including the vehicle trips of the alleged medical office located at the Project site. Instead, the Draft EIR not only failed to consider the additional trips of the existing offices that will move elsewhere but also improperly *credited* the trips from such uses from the Project's vehicular trip estimates to arrive at 507 vehicle trips for the Project, as shown in Table 4.12-2 below:

**Table 4.12-2: Project Trip Generation**

| Land Use | Size | Unit | ADT[1] | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | In | Out | Total | In | Out | Total |
| **Proposed Land Use** | | | | | | | | | |
| Off-Campus Student Apartment (Mid-Rise) (Modified Rates for Over ½ Mile from Campus) | 593 | bedrooms | 1,695 | 25 | 30 | 55 | 76 | 85 | 161 |
| **Existing Land Use** | | | | | | | | | |
| General Office Building | 109.6 | ksf | -1,188 | -147 | -20 | -167 | -27 | -131 | -158 |
| ***Net Project Trips*** | | | ***507*** | ***-122*** | ***10*** | ***-112*** | ***49*** | ***-46*** | ***3*** |

ksf = thousand square feet
Source: Kimley-Horn and Associates, TGA VMT Memorandum, 2024.

(DEIR, p. 4.12-2.)

The EIR's crediting of 1,188 trips from the existing land uses, and thereby crediting of their generated air quality emissions was error.

That crediting of the existing but not extinguished uses was error is confirmed by the OPR's guidance and expert report on an analogous project moving the existing uses to a different area. (**Exhibit O,** pp. 2-7 [SWAPE Report on the GUSD project].)

As a result of these omissions and erroneous calculation of vehicle trips and crediting of existing trips, the Draft EIR also failed to consider the *health impacts* from the air pollution and provide for mitigation. (**Exhibit O,** pp. 7-13 [need for updated health risk assessment] and pp. 13-18 [proposed mitigation measures for air quality].)

## RESPONSE NO. 5-29

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment states that the air quality analysis is incorrect because it underestimates

the vehicle trips that would be generated by the Project. The Project trip rate is based on the industry standard ITE guidelines. The rates and definition of the Off-Campus Student Apartment land use provided by ITE would most closely reflect the anticipated traffic for the Project. Additionally, the Project's net trip generation estimate is conservative (higher) since it was assumed that the number of bedrooms equals the number of beds (593) whereas in operation, there will likely be bedrooms that contain more than one bed. Second, the trips generated by the relocated office use will not impact the Project and Project Site. Therefore, the net increase in trips specific to the new Project Site remains reflective of the anticipated conditions. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-30

In addition, the EIR fails to consider the impacts of the massive increase of *energy* impacts and hence *air quality* pollution: increase in the use of natural gas. Specifically, while the existing *office* uses at the Project site may be using gas or may have gas service connections, it is reasonably foreseeable that the proposed 593-bed project, which will include kitchens, bathrooms, and other appliances, will need more use of natural gas.

Notably, the City's documentations confirm this by noting that the Project will need to *upsize* the gas pipes and replace the existing ones:

- Long Beach Energy Resources currently maintains an **active gas service** line feeding the existing building on the lot that will need to be **upsized**/**renewed** if loads increase due to the conversion. See GIS map (attached) for approximate location of the service.
- If additional new gas service or renewal of existing service is needed for the proposed conversion, Long Beach Energy Resources will need to review and approve the location for the meter and buried service line to be installed. Please consider that the routing of the buried gas service line and clearance requirements for meter may impact the design of the development.

(**Exhibit D,** p. 2, emph. added.)

And yet, the Draft EIR fails to provide an accurate information about the Project's operational impacts from natural gas uses, claiming:

> "Regarding natural gas, construction activities **typically do not** require natural gas. Additionally, the Project's projected **natural gas** demand during Project operations would represent a **negligible** increase compared to the **County's overall natural gas** consumption increase."
>
> (DEIR, p. 4.14-11, emph. added.)

There is no support for the City's statement that the construction of the Project will not require use of natural gas. To wit, some construction equipment and processes do use natural gas. (**Exhibit P,** p. 11 [LSI engines use gasoline, propane, and compressed natural gas as fuel. The LSI Fleet Regulation includes some electric-powered equipment.]) The Project – despite its adaptive reuse – still plans and proposes construction work, including to put a wading pool for students, build other amenities, make street improvements and underground utilities extending beyond the Project site.

## RESPONSE NO. 5-30

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment The majority of construction equipment in general utilizes gasoline and diesel fuel as the source. These are the more conservative options as the criteria pollutants released during exhaust and fugitive dust activities. Diesel consumption is more conservative, but in reality, if some equipment is supplied by alternative fuels the emissions and energy usage would be less. While individual pieces of equipment may include compressed natural gas as a fuel source, it would not be significant and substantially increase capacity for the County. As described on Table 4.4-2 within Section 4.4 Energy of the Draft EIR, the energy use associated with equipment, hauling, and worker trips are included in the analysis.

As discussed on pages 4.4-10 through 4.10-11 within Section 4.10 Noise of the Draft EIR, operations of the Project would generate demand for natural gas, electricity, and fuel. CARB approved CalEEMod was utilized for the modeling, using default assumptions for the County and air district. However, the individual Project would result in less than 0.002 percent of the County's energy use. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-31

More critically, there is no support for the Draft EIR's comparison of the Project's natural gas uses with the *County's* [not even City's] natural gas consumption increase and, based on that comparison alone, to conclude that the Project will have only a "negligible increase" and therefore no significant impacts. The Draft EIR's understatement of the Project's natural gas impacts and hence the associated air quality impacts further make the EIR's air quality analysis legally and factually flawed and unsupported.

For all of the above-noted reasons, the EIR's analysis of air quality impacts from various sources is flawed, making the EIR legally inadequate and improperly leading to a Project with significant impacts, including on public health, that are left unmitigated.

## RESPONSE NO. 5-31

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. As stated above in Response NO. 5-30, natural gas and fuel usage for the Project were quantified using CalEEMod and compared to existing County energy demand. The California Energy Commission (CEC) provides energy data at the County level, therefore projects are evaluated for their contribution to the existing demand. Typically, projects below 1 percent are considered to have a less than significant impact to energy capacity. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-32

**2. Impacts on Biological Resources and Public Services**

The EIR fails to even list biological resources as a separate study area for the EIR. (DEIR, p. 4.1-1.) The Draft EIR mentions that its initial study analyzed the biological impacts of the Project and found "no impacts." (Draft EIR, p. 5-8.) The Draft EIR's analysis of biological resources is nothing but conclusory:

> As discussed in the Initial Study, included in **Appendix A** of this Draft EIR the Project would have a less than significant impact to biological resources, including adverse effects on any special status species, riparian habitat or other sensitive natural community, federally protected wetlands, native resident or migratory fish and wildlife species, and would not conflict with any local policies or ordinances protecting biological resources. Therefore, impacts to biological resources be less than significant.
>
> Alternative 1 would involve no construction nor operations on the Project Site that would impact biological resources. Therefore, there would be no impacts to biological resources, and impacts would be less under Alternative 1 than the Project.

(DEIR, p. 5-8.)

In the meantime, Appendix A to the Draft EIR notes:

"Adjacent to the existing building, the **existing surface parking**, **walkways**, and **landscaping** would be **removed** and would be **replaced** by **new outdoor amenities**. A security fence and gate would be provided around the perimeter of the Project Site. Project design would also include lighting of entryways, publicly accessible areas, parking areas, and common building and open space residential areas for security purposes."

(DEIR, Appendix A, p. 13/pdf p. 26, emph. added.)

Also, Draft EIR, Appendix A, Section 4.4 provides:

*4.4e Would the Project conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

**Less Than Significant Impact.** The proposed Project Site is located in an urbanized area and is highly disturbed with minimal vegetation. The proposed Project would not affect any protected biological resources. The existing tree located on Clark Avenue would be preserved. There are currently **four street trees** located on the **periphery** of the proposed Project Site along Pacific Coast Highway. **These trees** would **not** be **removed** as part of the proposed Project. The City does **not** have a **tree preservation** policy or ordinance; however, LBMC Chapter 14.28, Trees and Shrubs, regulates and controls the planting, maintenance, and removal of trees on City streets.

(DEIR, Appendix A, pp. 31-32/pdf pp. 44-45, emph. added.)

## RESPONSE NO. 5-32

This comment is noted for the record and will be provided to the decision makers for review and consideration. This comment states that the Draft EIR fails to list biological resources as a separate study area of the Draft EIR. However, the Initial Study analyzed the Project's impacts to biological

resources. This analysis can also be found on pages 6-10 through 6-14 within Chapter 6, Other CEQA Considerations of the Draft EIR, which states that impacts to Biological Resources would be Less than Significant. Review of the USFWS's Information for Planning and Consultation (IPaC) database identified four listed species and one candidate species with likelihood to occur in the environs of the Project Site. The California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDB) identified nine State species of special concern with potential for occurrence in the Long Beach quadrangle. The potential for finding any of these species on the Project Site or in areas around the Project Site is very low because the Project Site is highly disturbed and located in an urbanized area. It is unlikely that the Project Site would support these species or their habitats. Accordingly, the Project would not have a substantial adverse effect on any species identified as a candidate, sensitive, or special-status species in local and regional plans, policies, or regulations, or by the CDFW or USFWS.

Furthermore, as indicated in the Initial Study, the Project is an urbanized area and would not affect any protected biological resources. There are currently four street trees located on the periphery of the Project Site along Pacific Coast Highway. These trees would not be removed as part of the Project. Furthermore, the City does not have a tree preservation policy or ordinance; however, LBMC Chapter 14.28, Trees and Shrubs, regulates and controls the planting, maintenance, and removal of trees on City streets. As such, there would be no impact to biological resources. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-33

In addition, the EIR admits that there *are* trees on the Project site, and it appears to concede that those trees *will* be removed and also that those trees may provide habitat for nesting birds. But the Draft EIR fails to provide any more information or mitigation other than require a nesting bird survey 14 days prior to commencement of the Project and then suggesting that construction activities should not occur during the general avian breeding season "to the extent feasible":

> The Project **Site contains** ornamental landscaping, **trees along Clark Avenue and Pacific Coast Highway**, and a sparsely landscaped open space area. It is unlikely that the ornamental landscaping on-site would provide suitable habitat for any native resident or wildlife species. However, the **existing trees may** provide **habitat** for **nesting birds**. Most bird nests and eggs are protected under the California Fish and Game Code (CFGC) Section 3503 and the Migratory Bird Treaty Act (MBTA). **Project construction activities** and **tree maintenance** activities should **occur** outside of the general **avian breeding** season of **February 1st to through August 31st** to the **extent feasible**. **If** Project- related construction, demolition, and tree maintenance activities **cannot** occur outside of the general avian breeding season (February 1st to through August 31st), a **pre-activity nesting bird survey** shall be conducted **prior** to the onset of the aforementioned activities, within a maximum of **14 days** prior to commencement.

(DEIR, Appendix A, p. 31/pdf p. 44, emph. added.)

Critically, since the EIR fails to consider biological impacts, the noted mitigation and recommendation for a survey is not even in the mitigation plan and hence is not binding either.

As such, the City's Draft EIR or its Appendix A to which the EIR refers for biological resources provides no definitive answer as to how many trees will be removed as a result of the Project, while at the same time admitting that trees will be removed and providing no enforceable protection for nesting birds for which such trees serve as a habitat.

In sum, the EIR's findings that no biological impacts will result are unsupported and its biological impact analysis is legally inadequate as it *omits* information.

## RESPONSE NO. 5-33

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment requests further information about the trees that may be impacted by the Project. As described on page 6-12 within Chapter 6, Other CEQA Considerations of the Draft EIR, there are currently four street trees along the periphery of the Project Site along Pacific Coast Highway. These trees would not be removed as part of the Project. Furthermore, as described in the Draft EIR, protected bird nests and eggs are protected under the California Fish and Game Code (CFGC) Section 3503 and the Migratory Bird Treaty Act (MBTA). Furthermore, any Project construction activities and tree maintenance activities would occur outside of the general avian breeding season of February 1st to through August 31st to the extent feasible. If Project- related construction, demolition, and tree maintenance activities cannot occur outside of the general avian breeding season (February 1st to through August 31st), a pre-activity nesting bird survey shall be conducted prior to the onset of the aforementioned activities, within a maximum of 14 days prior to commencement as enforced by the MBTA. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-34

Also, similar to biological impacts, the Draft EIR fails to consider the Project's impacts to *public services* and instead references its analysis of public service impacts in the Appendix A to the EIR, i.e., the initial study, stating:

> As discussed in **Section 4.15, Public Services**, of the Initial Study included in **Appendix A** of this Draft EIR, the Project would have a less than significant impact in regard to Public Services.
>
> Impacts to fire protection services, police protection services, schools, parks, and other public facilities would be less than significant.

(DEIR, p. 5-80.)

And Section 4.15 in the Appendix A is not any more informative. It provides: Impact Analysis

> *4.15a Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physical altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection?*

> Less Than Significant Impact. The City of Long Beach Fire Department (LBFD) operates 23 fire stations throughout the City. Three fire stations are located within 1 mile of the Project Site: LBFD Station 4 at 411 Loma Avenue LBFD Station 14 at 5200 East Elliot Street, and LBFD Station 17 at 2247 Argonne Avenue, located approximately 1.2 miles southwest, 0.95-mile south, and 1.2 miles southwest of the Project Site, respectively.
>
> The LBFD responded to approximately 80,000 calls in 2022. In February 2022, the latest month for which data was available, the LBFD made 4,981 calls; however, 4,180 (84 percent) of those calls were for medical service, and 587 (12 percent) of calls made for fire protection. In fiscal year **2022**, the LBFD arrived on scene **within six minutes** for approximately 33.8 percent of emergency calls.
>
> The proposed Project would adaptively reuse an existing seven-story office building and introduce housing for students which **could incrementally increase demand** for fire **protection services**. Therefore, there is **potential** for an **increase** in **service calls** to the **LBFD** due to an **increase** in **student residents** on the Project Site. **However**, according to **LBMC Section 18.16.050**, Fire Facilities Impact Fee, all residential and nonresidential developments would be required to **pay** a **Fire** Facilities **Impact Fee** to support a potential for an increase in need for fire protection services. Impacts associated with **fire protection** services would be **less than significant**. **This issue** will **not** be carried forward for further analysis in the EIR.
>
> (DEIR, Appendix A, pp. 53-54/pdf pp. 66-67, emph. added.)

The Initial Study relies on the payment of impact fees for the Project's potential impacts on other public services, including schools, police, and other governmental facilities. (DEIR, Appendix A, pp. 54-55.)

However, the City's reliance on solely impact fees to conclude the Project will have less than significant impacts – while also adding 593 student residents to the area for a University about one mile away – is wholly unsupported by facts and legally misplaced. Critically, impact fees, without more, cannot be sufficient to conclude the Project will have less than significant impacts. Payment of fair share impact fees by a Developer are not proper mitigation measures for the City unless those "mitigation measures require the City to undertake an *action"*; i.e., to "prepare" the fair share plans and unless the City provides that those are feasible and not speculative, i.e., provide an estimate of the cost to prepare the fair share plans, if any, and the estimate of how much the mitigation measures themselves in those plans will cost or how they will be implemented. (*California Clean Energy Committee v. City of Woodland* (2014) 225 Cal.App.4th 173, 197.)

In sum, the EIR's analysis of biological and public services impacts is legally inadequate and missing critical good faith disclosures, information, and much needed mitigation for the changes the Project proposes, including 593 students added to the site, and physical changes to the surrounding environment, which will be affected.

## RESPONSE NO. 5-34

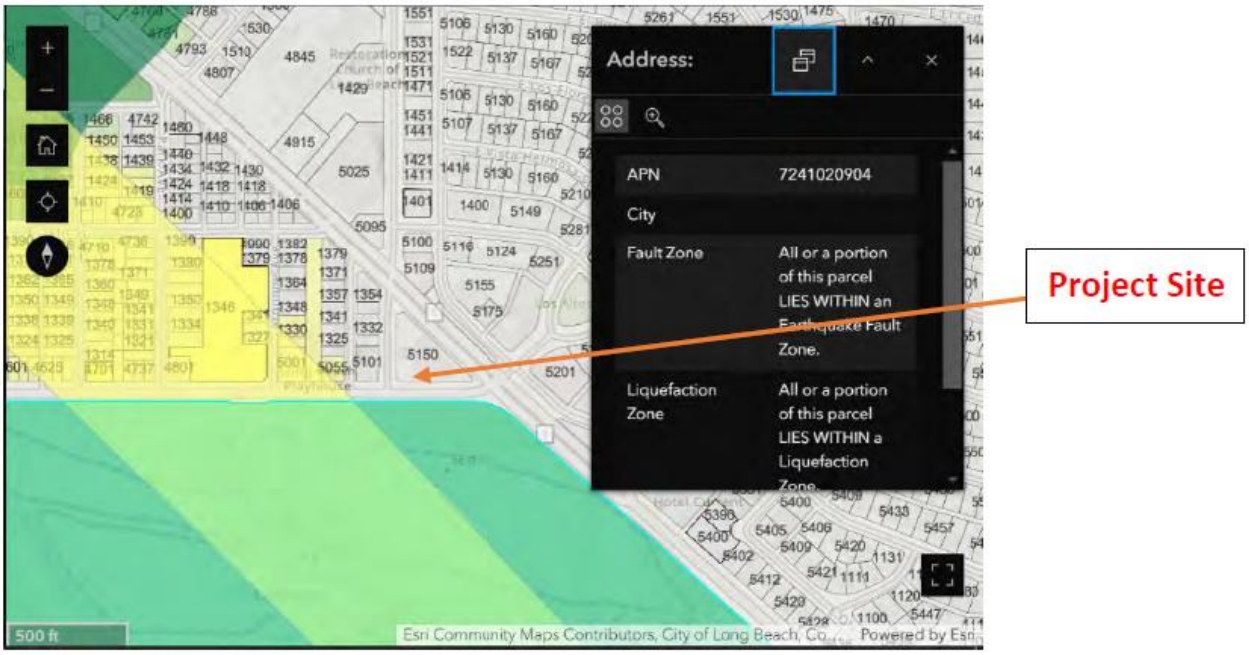
This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment suggests that the potential Project impacts to public services has not been fully analyzed. However, the Project would be required to comply with City regulations that have been created to address increased demand for services, as applicable. As described on page 6-17 through 6-19 within Chapter 6, Other CEQA Considerations, of the Draft EIR, the Project's addition of 593 students could incrementally increase the demand for fire protection services. To account for an increase in residents, the Project would be required to abide by LBMC Section 18.16.050, Fire Facilities Impact Fee, which requires that all residential and nonresidential developments pay a Fire Facilities Impact Fee to support a potential for an increase in need for fire protection services. Similarly, as described in Chapter 6, Other CEQA Considerations, impacts associated with other public services, including schools, police, and other governmental facilities would be less than significant. As specified on page 6-18, within Chapter 6 Other CEQA Considerations of the Draft EIR, the Project Site is within the boundaries of the Long Beach Unified School District (LBUSD) which serves public school needs for the City of Long Beach. Under the provision of SB 50, school districts are authorized to collect fees to offset the costs associated with increasing school capacity as a result of development and related population increases; therefore, impacts associated with schools would be less than significant. Furthermore, as specified on page 6-18 within Chapter 6 Other CEQA Considerations of the Draft EIR, new residential and nonresidential developments would be required to comply with LBMC Section 18.15.060 and pay a Police Facilities Impact Fee to support a potential for an increase in need for police protection services. Therefore, impacts to police protection services would be less than significant.

Lastly, the Project would have less than significant impacts with regards to other governmental facilities libraries. As discussed on page 6-19 within Chapter 6 Other CEQA Considerations of the Draft EIR, the City of Long Beach is served by twelve libraries located throughout the City. Residents at the Project Site would have access to the Brewitt Neighborhood Library, located 0.6 miles to the west of the Project Site and libraries at their respective colleges. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

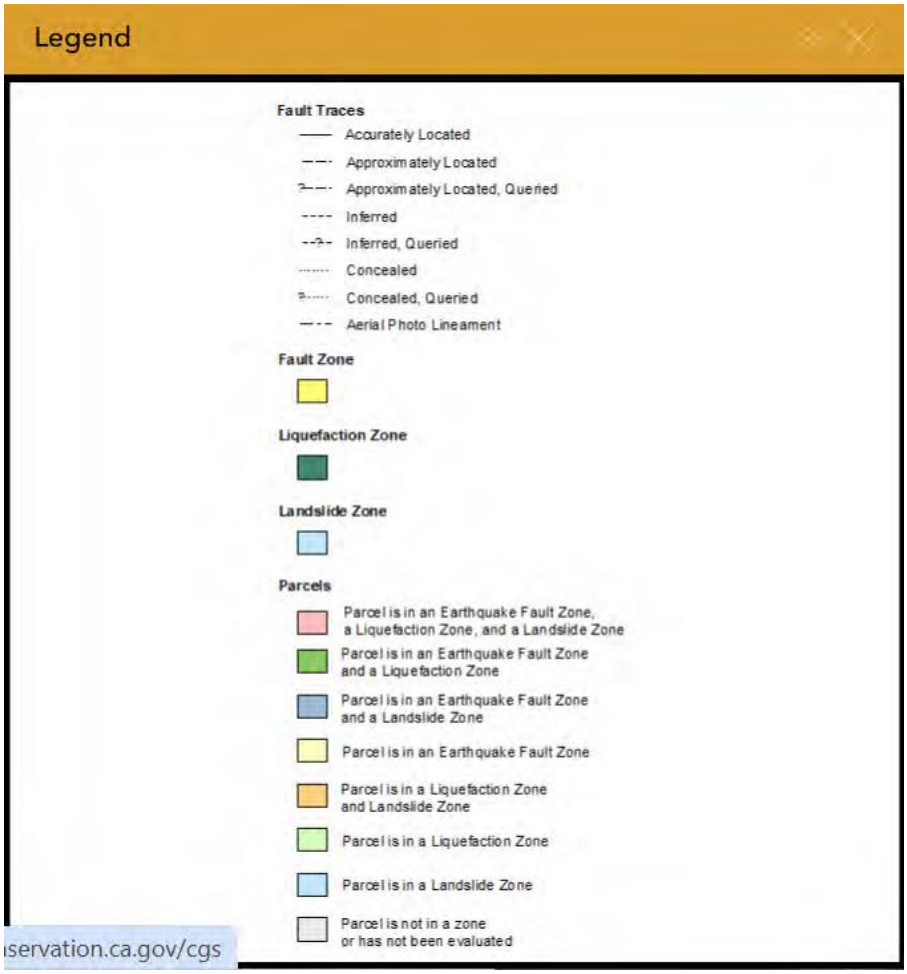
## COMMENT NO. 5-35

### 3. Geology Impacts

While the Project Site itself is not within the earthquake or liquefaction zone, the Alquist-Priolo Map shows that it is *immediately across* from the Project Site is located within the earthquake and liquefaction zone, as shown in the screenshot below, marked in green and yellow:




The legend of the Earthquake Map below shows that the yellow stands for the earthquake fault, while the green color stands for liquefaction:




Nonetheless, the Draft EIR provides a very brief Geology/Soils impact analysis (DEIR, pp. 4.5-1—4.5-5), disclaiming any impacts and failing to mention about the Project's close proximity to the earthquake fault and liquefaction zone. It states:

> As determined by the Initial Study, the Project would have **no impact** in regard to the **rapture** of a **known earthquake line**, **ground failure** and **liquefaction**, **landslides**, **lateral spreading**, **subsidence**, **liquefaction** or **collapse**, **expansive soils**, and **soils incapable** of **supporting** the **use** of **septic tanks** or **alternative wastewater disposal** systems. Furthermore, the Project would not **directly** or **indirectly cause** potential substantial **adverse effects**, including the **risk** of **loss**, **injury**, or **death** involving **strong seismic ground shaking** or result in substantial **soil erosion** or the **loss** of **topsoil**. As such, impacts with respect to **seismic ground shaking** and **soil erosion** or the loss of topsoil would be **less than significant**, and **no further** analysis is required.
>
> (DEIR, p. 4.5-4, emph. added.)

As such, the Draft EIR completely fails to acknowledge the potential that bringing a high-density and high-intensity Project with 593 beds/students, employees, and potentially 593 or more cars, of which only a fraction will be accommodated in the subterranean parking and about 127 of which parking will be *tandem* parking, may cause geological or soil impacts. In other words, the Project proposes

to bring many people into the area without providing adequate and safe parking and also creating potential gridlocks in case of earthquake, landslides, impeding evacuation possibilities for those students and others residing or working nearby, and endangering the surrounding environment as a result.

## RESPONSE NO. 5-35

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment expresses concern that potential geological hazards near the project site and that the Project parking configuration will prevent evacuation. As described on page 6-12 through 6-15 within Chapter 6, Other CEQA Considerations, of the Draft EIR, the Project Site is not located within an earthquake, liquefaction, or landslide zone. Generally, impacts related geologic hazards are site-specific and localized. The Project Site is located in Southern California, which is characterized by high regional seismicity. As such, the Project would be required to adhere to the California Building Standards Code (California Code of Regulations, Title 24) and the Uniform Building Code (UBC) as stated in LBMC Chapter 18.68, *Earthquake Hazard Regulations.* Therefore, the Project would not directly or indirectly cause potential adverse effects involving seismic ground shaking. The Project is not located within an earthquake-induced landslide zone nor is it in a location conducive to landslides.

Furthermore, the Project would be required to undergo site plan review for the adaptive reuse of the building, which includes review of project site ingress and egress by Fire officials. Approval of the site plan specifically requires that the parking is configured in a way that allows for site circulation. Additionally, as discussed on page of Section 4.12, Transportation, of the Draft EIR, the Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, and impacts would be less than significant.

Moreover, the Project will involve the adaptive reuse of an existing building, and no significant ground disturbance would be required. As an adaptive reuse Project, Project construction would not cause significant geological impacts. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-36

The Project's potential geological impacts and hazards are even more pronounced in light of the Project's potential non-suitability for residential uses. Specifically, the Project is a 7-story landmark building made of glass/mirror, as shown below:



(See also, **Exhibit R** [Printout of the Project's image and advertised office space].) And, as the City and Fire Department noted, it is questionable whether the Project – and its 7 stories of a glass building – is code-compliant for the proposed residential uses:

| | | |
|---|---|---|
| 2 | High Rise / Low Rise building determination:<br>• City permit records reviewed; original project Certificate of Occupancy was not found. Proposed next step from City of LB is to provide an analysis of 1976 UBC vs. current building code to determine high-rise building requirements then vs. today. Existing conditions may be grand-fathered into current project depending upon the conclusion from this analysis and further research. S111 to provide copes of original drawings with 1976 UBC analysis.<br>• Bret A. – LB Fire to check City's annual inspection list of high-rise buildings to determine if the existing building has been considered a high-rise. | S111/ LB Fire |

(**Exhibit E,** p. 1.)

Notably, based on the Alquist-Priolo map screenshot above, the Project is within several feet of both the earthquake fault and liquefaction areas. As such, the Project and its accommodation of 593 students, employees in a glass building, as well as providing parking for about half of those students and in tandem (back-to-back) parking within an enclosed 3 *subterranean* levels may exacerbate the safety risks of earthquake and liquefaction next to the Project site.

These risks to people's life and safety are further exacerbated by the fact that, as noted below, the Project is located in the methane zone, which is prone to cause fires and further may destabilize the Project site and soils.

The Draft EIR's failure to discuss the above-noted hazards and geologic risks makes the EIR legally inadequate.

## RESPONSE NO. 5-36

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment expressed concern regarding seismic hazards related to the Project. Please refer *to RESPONSE No. 5-35*. As described on page 6-14 within Chapter 6, Other CEQA

Considerations of the Draft EIR, the Project would be required to adhere to the California Building Standards Code (California Code of Regulations, Title 24) and the Uniform Building Code (UBC) as stated in LBMC Chapter 18.68, *Earthquake Hazard Regulations.* Therefore, the Project would not directly or indirectly cause potential adverse effects involving seismic ground shaking and a less than significant impact would occur. Furthermore, the Project would be required to undergo site plan review for the adaptive reuse of the building. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-37

**4. GHG Impacts**

The Draft EIR concludes that the Project will have less than significant GHG Impacts. The Draft EIR's GHG impact analysis is flawed for several reasons.

**First**, the Draft EIR concedes the **long-term impacts** of GHG:

> GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants (TACs), which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have **long atmospheric lifetimes** (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe.

(DEIR, p. 4.6-11, emph. added.)

For construction impacts, the EIR presumed 6-8 hours work for a year from January 2025 through March of 2026:

> Construction equipment employed would include excavators, tractors, graders, cranes, forklifts, loaders, backhoes, welders, paving equipment, cement and mortar mixers, and air compressors. Each piece of equipment was assumed to operate between six to eight hours a day during the applicable phase of construction. For purposes of the analysis, construction of the Project is expected to commence in January 2025 and would end in March 2026.

(DEIR, p. 4.6-13.)

However, the assumptions for building the Project are not warranted because – as of January 2025 – the Project's EIR is still being reviewed.

Moreover, the City's records show that the Project will include undergrounding and upsizing utilities, including gas, for which additional construction activity will have to occur:

> Developer proposes improvements that may impact existing under- and above ground utilities through and adjacent to the project site, such as gas lines, street light conduits and utility poles and overhead lines, and along the perimeter streets adjacent to the project site. The Developer shall be responsible for all design, applicable utility approval, permitting, relocation work, easements relocation and

> commissioning as required by the interested agency and shall work with each utility directly.

(**Exhibit S,** p. 6.)

There is no evidence that the additional construction for purposes of utilities, including outside of the Project site, has been assessed for GHG impacts.

## RESPONSE NO. 5-37

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment suggests that the impacts related to GHG emissions are not fully analyzed. However, the Project primarily includes tenant improvements, which does not require significant construction or ground disturbance. However, as a conservative approach, the construction equipment modeled in CalEEMod (page 54 of Appendix B, Park Tower Student Housing Air Quality and Greenhouse Gas Analysis included in the Draft EIR) includes excavators, graders, and tractors. As previously discussed, the Project is expected to require minimal ground disturbance, primarily for landscaping, and will not require any significant excavation. Additionally, the construction emissions also show a conservative worst-case day, where multiple pieces of equipment are operating simultaneously for 6-8 hours per day continuously. In reality, an individual piece of construction equipment operates for a few minutes or hours before another piece is used. Therefore, the construction emissions shown in Table 4.2-6 within Section 4.2 Air Quality of the Draft EIR are conservative and less than significant.

Construction activities were modeled to begin in January 2025. This is conservative as construction equipment fleets continue with technological advancements and cleaning of fleets as older equipment is phased out. Therefore, in reality when construction begins in 2026 or later, construction fleets will be cleaner than earlier years. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-38

As for *operation* impacts, the Draft EIR's impact analysis was based on the incorrect and legally erroneous assumptions regarding the Project's GHG-related traffic and energy impacts. Specifically, the Draft EIR notes:

> Operation of the Project results in emissions from **area sources** (e.g., **landscaping**, **maintenance equipment**, and **consumer products**), **mobile sources** (e.g., automobiles and trucks), **energy sources** (e.g. electricity and natural gas), **water** and **wastewater** conveyance, and **fugitive refrigerants** from **air conditioning** and **refrigerators**.
>
> **Energy source** emissions would include emissions produced through generation of **electricity** and the **use** of **natural gas**. The Project would be **subject** to **compliance** with the energy conservation measures mandated **by Title 24 of the California Building Standards** and California's 2022 Building Energy Efficiency standard. CalEEMod assumed compliance with the 2019 Title 24 standards by default, which is conservative as the 2022 Title 24 standards are currently applicable.

> **Mobile source emissions** were primarily derived from **vehicle trips generated** by the Project, including **residence** and **employee trips** to and from the site and **occasional truck trips** for delivery or pick-up. Trip generation rates used in the analysis were derived from the 5150 Pacific Coast Highway Development, City of Long Beach Trip Generation Analysis and Vehicle Miles Traveled Screening (**Transportation Analysis**), included as Appendix H. Based on the Project's Transportation Analysis, the Project would result in a **net total** of **507 additional** daily trips.

(DEIR, p. 4.6-14, emph. added.)

## RESPONSE NO. 5-38

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment suggests that Project's operational GHG impacts assumptions are flawed. Please see *RESPONSE NO. 5-29* and *5-30* above. The Project includes the appropriate ITE rate for trip generation and model defaults for assumptions related to energy demand and consumption. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-39

**First**, it is reasonably foreseeable that the Project will significantly add to the energy, natural gas, water/wastewater uses by bringing 593 people on the Project Site, along with commercial kitchens, refrigeration in each one of 149 rooms and the amenity, kitchen, pool, and other areas. The EIR, however, appears to rely solely on the Project's compliance with Title 24 of the California Building Standards to claim that the energy impacts will be low. (*Ibid.*) However, as courts noted, compliance with the building or any other code is not an adequate assessment of mitigation where the code does not address CEQA considerations, including "whether a building should be constructed at all, how large it should be, where it should be located, whether it should incorporate certain resources, or anything else external to the building's envelope." (*California Clean Energy Committee v. City of Woodland* (2014) 225 Cal.App.4th 173, 211.) There is no evidence that the Title 24 building code was designed to lessen GHG impacts or that it will necessarily reduce GHG impacts to insignificant levels.

## RESPONSE NO. 5-39

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment states that reliance on building codes to evaluate impacts related to energy and utilizes is not an acceptable form of evaluation. As mentioned above in *RESPONSE NO. 5-29* and *5-30*, the Project correctly evaluated energy and trip uses based on the land use. Additionally, the Project's impacts to air quality, energy, and GHG emissions did not solely rely on building code compliance; they were modeled to evaluate potential impacts. The assumptions were derived from default values in the CalEEMod air quality model that are based on industry-accepted data and protocols. Specifically, the User's Manual for the CalEEMod model (version 2022.1)

emphasizes that *"CalEEMod utilizes widely accepted methodologies for estimating emissions combined with default data that can be used when site-specific information is not available. Sources of these methodologies and default data include the United States Environmental Protection Agency's (USEPA) AP-42 emission factors, California Air Resources Board's (CARB) vehicle emission models, and studies commissioned by California agencies such as the California Energy Commission (CEC) and California Department of Resources Recycling and Recovery (CalRecycle)... When no customized information was provided, and no regional differences were defined for local air districts, statewide default values are utilized...For any project that substantially deviates from the types and features included in the surveys, site-specific data that are supported by substantial evidence should be used, if available…There are several opportunities for the user to change the defaults in the model; however, the user is required to provide justification for all changes made to the default settings (e.g., reference more appropriate data sources) in the Justification box before the user will be able to proceed to the next screen*." As there were no site-specific circumstances to justify any deviation from industry-accepted assumptions, the air quality analysis relied on the model's default assumptions for operational use. The comment fails to demonstrate that the use of CalEEMod default assumptions was inappropriate here or provide evidence that such assumptions are inaccurate or improper for the Project. Therefore, no revisions to the Draft EIR are required. Findings and conclusions of the Draft EIR are not affected.

## COMMENT NO. 5-40

**Second**, the Draft EIR's GHG impact analysis ignores the principle of *additionality.* The Project brings *additional* impacts that have not been considered by any plan, since the Project site is not even zoned for residential or high-density uses – it was simply an office building for years. This principle of *additionality* – i.e., requirement that the reduction of GHG impacts must be *in addition* to the reduction otherwise required by law or existing regulations - is found in the Health and Safety Code and recently emphasized by the court. (Health & Safety Code section 38562(d)(2) ["the reduction is in addition to any greenhouse gas emission reduction otherwise required by law or regulation, and any other greenhouse gas emission reduction that otherwise would occur"; *Golden Door Properties, LLC v. County of San Diego* (2020) 50 Cal.App.5th 467, 514-515. ["Additionality is an important requirement because if non-additional (i.e., 'business-as-usual') projects are eligible for carbon [offset] ... then the net amount of greenhouse gas emissions will continue to increase and the environmental integrity of carbon reduction projects will be called into question." *Id*. at 514].)

## RESPONSE NO. 5-40

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment incorrectly suggests that the methodology for reviewing GHG emission in the Draft EIR is incorrect. The Draft EIR evaluates the Projects GHG impact within Section 4.6, Greenhouse Gase Emissions, starting on page 4.6-1. Page 4.6-13 within Section 4.6, Greenhouse Gas Emissions of the Draft EIR outlines the methodology and thresholds used for the analysis. Specifically, the Draft EIR relies on the suggested significance thresholds included in Appendix G to the State CEQA Guidelines, which is the standard practice of the City for EIRs. As noted in the Draft EIR, and supported by Section 15065.7(c) of the State CEQA Guidelines, a lead agency's ability to consider thresholds supported by substantial evidence. Therefore, the City has the discretion and ability to use its qualified CAP to fulfill the requirements for the State requirements (AB 32, SB 32,

and 2022 Scoping Plan), which form the basis for the GHG analysis. Therefore, a project consistent with the CAP would have a less than significant CEQA impact related to GHG emissions. Table 4.6-4 and Table 4.6-5 within Section 4.6 Greenhouse Gas Emissions of the Draft EIR discuss the Project's GHG emissions for construction and operations. The Project would result in a less than 1.4 $MTCO_2e$ per person threshold. Therefore, the operation of the Project is evaluated for GHG impacts in the Draft EIR. Additionally, as stated on page 4.6-18 within Section 4.6 Greenhouse Gas Emissions of the Draft EIR, majority of the Project's emissions would be related to energy and mobile sources which would decrease as technology advancements and regulations are implemented.

Moreover, it is generally the case that an individual project of this size and nature is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory. GHG impacts are recognized as exclusively cumulative impacts. The Project as well as other cumulative related projects would also be subject to all applicable regulatory requirements, which would further reduce GHG emissions. The Project would not conflict with the CAAP Checklist, the RTP/SCS, the CARB Scoping Plan, or any other GHG reduction plan. Therefore, incremental and cumulative GHG emissions for the Project were evaluated and found to be less than significant. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-41

**Third**, the Draft EIR's GHG impact analysis is flawed, as it relies on the understated transportation impact analysis which erroneously concludes that the Project will have only 507 vehicle trips per day. As also noted earlier in the air-quality Section IV.D.1 section above, the EIR's conclusion of 507 vehicle trips per day is based on the erroneous crediting of over 1,100 trips of the *allegedly* present existing uses on the Project site. However, there is no evidence in the EIR that the present land uses (office use) produce about 1,100 vehicle trips currently. The EIR does not even account for the *types* of such present uses, as noted earlier.

## RESPONSE NO. 5-41

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment reiterates its concern that the Project trips are underestimated. Please refer to *RESPONSE NO. 5-29* above. The trip generation for the Project relies on the appropriate land use identified by the ITE and represents a conservative analysis as it utilizes the number of beds rather than the number of bedrooms for the analysis. Therefore, the methodology utilized to calculate the trip generation is appropriate. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-42

Fourth, a major flaw in the Draft EIR's GHG impact analysis is that it credits the GHG impacts of present uses and discounts those – including for natural gas use, energy use, water use, and, most importantly, vehicle trips – from the proposed uses. Such crediting, however, is legally erroneous since the existing uses will not be extinguished by the Project but rather move to a different location. As noted by expert SWAPE in an analogous project review:

> However, **relying** on the proposed Project's **net GHG** emissions, rather than the Project's total GHG emissions, is **incorrect** and **inconsistent** with recent guidance set forth by the **Office** of **Planning** and **Research** (OPR). In the Final Statement of Reasons for the GHG-specific Guidelines,***55**[11] OPR concluded that lead agencies cannot simply consider whether a project increases or decreases GHG emissions at the project site, but must consider the effect that the project will have on the larger environment.
>
> Accordingly, **if** a lead agency wants to use a **net approach** by subtracting existing on-site emissions from the project emissions, it **must support** that decision with substantial evidence **showing** that those **existing emissions** sources **will be extinguished** and **not simply displaced**.***56**[12]Review of the Project's GHG analysis, however, demonstrates that the GHG emissions generated from the 32,233 square foot general office building that will be demolished were subtracted from the proposed Project's GHG emissions, without substantial evidence showing that all of these existing GHG emissions sources on the Project site would be extinguished by the proposed Project, and not simply move elsewhere leading to increased total cumulative GHG emissions over the applicable GHG thresholds. As a result, the Project's GHG impact is underestimated and inadequately addressed.

(**Exhibit O**, p. 21, emph. added.)

It is, therefore, manifest that the Draft EIR's crediting of existing office uses towards the Project's GHG impacts is in error. The Draft EIR provides no showing that the existing uses will be extinguished and not simply displaced.

Footnote 11: Footnote 55 referenced in SWAPE's comment provides and refers to the source: "Final Statement of Reasons, pp. 83-84, *available at,* http://resources.ca.gov/ceqa/docs/Final_Statement_of_Reasons.pdf

Footnote 12: Footnote 56 referenced in SWAPE's comment provides: "See CEQA Guidelines, § 15064.4, subd. (a) ("The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based on available information, to describe, calculate, or estimate the amount of greenhouse gas emissions resulting from a project.")"

## RESPONSE NO. 5-42

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. This comment is incorrect. As demonstrated in Table 4.6-5 within Section 4.6 Greenhouse Gas Emissions of the Draft EIR, the Project GHG emissions include the complete service population of 593 students and 50 employees. The emissions shown include net new trips, but the other sources are new for the Project Site and do not take credit for existing uses on site. As discussed above, the methodology for traffic impact is consistent with industry approach and protocol. In addition, future vehicle emissions would continue to decrease as regulatory and market standards lead to cleaner fleets. The Project also includes consistency with the City's CAP. Please also refer to *RESPONSE NO. 5-40*. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-43

**Fifth**, the Project's GHG impact conclusions of less than significant impacts are also flawed since it relies on its alleged compliance with Title 24 code and installation of solar system and EV chargers. The Draft EIR provides:

> Project operations would benefit from the implementation of current and potential future energy regulations including the SB 100 renewable electricity portfolio target of 60 percent renewable energy by 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045. It should be noted that the Project would comply with the **2022 Title 24** Part 6 **Building Energy Efficiency** Standards (2022 Energy Code). Among other updates, the **2022 Energy Code** includes updated standards including **new electric heat pump** requirements for **offices** and banks; and the **expansion** of **solar PV** and battery storage standards to additional land uses including offices. Projects whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Energy Code. Title 24 is part of the State's plans and regulations for **reducing emissions** of **GHGs** to meet and exceed AB 32 and SB 32 **energy reduction** goals. Therefore, the Project would have a less than significant impact on GHG emissions.
>
> (DEIR, p. 4.6-18—4.6-19, emph. added.)

However, the Project fails to provide any specifics as to *how* it will provide for solar roof for a Project that proposes simply an *adaptive* reuse of the *existing glass* building and has no such existing roof accommodations. The feasibility of solar panels on a glass building is also questionable and there is no respective analysis in the Draft EIR.

## RESPONSE NO. 5-43

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment requests further clarification on whether compliance with Title 24 as well as solar energy systems and EV chargers affect the significance conclusions for GHG emission impacts. As discussed in Table 4.6-5, within Section 4.6, Greenhouse Gas Emissions, of the Draft EIR, the Project GHG emissions do not include Title 24 code compliance such as EV chargers, water and heat efficiency, and solar system installation outside of the default assumptions in CalEEMod. The intent of the paragraph from the Draft EIR is to provide information for the public on additional non-quantified programs and features that would further reduce GHG emissions.

However, as noted in Chapter 2, Project Description, of the Draft EIR, the Project would include EV parking spaces as part of the project design, which would further reduce project impacts than what is quantified in the Draft EIR.

Additionally, power grids and utility companies will continue to become cleaner as they meet their own RPS and State targets which will result in individual projects with lowering GHG emissions. Please also refer to *RESPONSE NO. 5-40* through *5-42*. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-44

Similarly, as to EV-chargers, the Draft EIR claims:

The Project would also include a number of EV parking spaces. Particularly, **10 percent** of the **total number** of **parking spaces** would be EV charging spaces **capable** of supporting future Level 2 EV supply equipment (EVSE), **25 percent** of the total number of parking spaces would be **EV ready**, and **5 percent** of the total number of parking spaces would be equipped with **EVCS**.

(DEIR, p. 4.9-8, emph. added.)

However, this 10% of total number of parking spaces is notably based on the Draft EIR's *reduced parking* and its presumption that such reduced parking is proper and allowed here under AB 2097. For reasons stated earlier, the Project is not eligible for AB 2097 since, among other things, the Project is not for a residential use but rather transient (dorm) use, the Project provides no affordable units, and the Project is not even located within ½ mile of a qualifying major traffic stop.

For all of these reasons, the Draft EIR's GHG impact analysis is flawed. The Project does not *reduce* GHG impacts as required by state policies and plans. Instead, it significantly adds to the GHG impacts and erroneously relies on *net* GHG impacts.

## RESPONSE NO. 5-44

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment suggests that reduced parking would have an impact on the methodology utilized to evaluate GHG emissions in the Draft EIR. As discussed in *RESPONSE NO. 5-42* and *5-43*, the Project GHG analysis does not result in net GHG emissions but new emissions associated with the Project. The Project results in less than the 1.4 $MTCO_2e$ service population threshold. The conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-45

### 5. Hazards and Hazardous Materials Impacts

The Draft EIR concludes that the Project's hazards and hazardous materials impacts will be less than significant despite the fact that there are admittedly potential recognized environmental conditions ("**REC**") on the Project site and solely based on the fact that the Project Site has been redeveloped into an office building. The Draft EIR provides, in pertinent parts:

> Historical and Present Uses on the Project Site
>
> The Project Site is currently developed with an approximately 120,000 sf office building with three subterranean parking levels, surface parking lot, and associated landscaping. Stationary equipment at the Project Site includes **three cable-traction elevations**, a **15,000-gallon underground water storage tank**, **hot water heaters**, **compressors**, a **cooling tower**, **dry-type transformers**, a fire pump, and a sump. Carbon monoxide monitors are located throughout the subterranean parking levels.
>
> The Project Site reconnaissance consisted as part of the Phase I ESA included an inspection of the Project Site and a perimeter survey of the surrounding properties in compliance with American Society for Testing and Materials (ASTM) standards. The **survey identified potential sources** of **environmental concern** including a **cooling water treatment**

> **container**, **electrical equipment** containing **PCBs**, **self- luminescent tritium** exit **signs**, the **sump**, and the **underground water storage** tank. However, these items were found to **appear** in **working order** with no signs of **staining** or **leaking** or **hazardous substances**, and none of these items are expected to represent a significant environmental condition.
>
> **Historic tenants** at the Project Site include a **gasoline station** from at least 1931 to 1952; a **restaurant** from 1953 to 1969; and a **gasoline station** with a car wash from 1972 to 1979. Various professional tenants have occupied the Project Site since 1981. The existing office building is occupied by various professional office tenants.
>
> As noted in the Phase I ESA, **historic occupancy** of the Project Site as a **gasoline station** from 1931 to 1952 and a **gasoline station** with a car wash from 1972 to 1979 **may represent** an **environmental concern**. **However**, given that the Project Site **has been** redeveloped with an **existing office building** with **three subterranean parking levels**, the **historic occupancies** of **gasoline stations** at the Project Site are **not likely** to **represent** a significant environmental concern.

(Emph. added.)

## RESPONSE NO. 5-45

The comment summarizes the existing conditions of the Project Site as described on page 4.7-7 through 4.7-11 within Section 4.7, Hazards and Hazardous Materials of the Draft EIR. As described on page 4.7-12 through 4.7-15 within Section 4.7 Hazards and Hazardous Materials of the Draft EIR, the Project would have a less than significant impact related to hazards. Furthermore, as described in the Phase I ESA included in Appendix E of the Draft EIR, given that the Project Site has been redeveloped with an existing office building and three subterranean parking levels, the historic occupancies of the gasoline stations at the Project Site are not likely to represent a significant environmental concern. As the Project Site has been developed since the gasoline station occupied the Project Site, the Project Site is not likely to create a significant hazard to the public or the environment. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-46

**First**, the Draft EIR's reliance on the Phase I ESA speculation that, "given that the Project Site has been redeveloped with an existing office building with three subterranean parking levels, the historic occupancies of gasoline stations at the Project Site are not likely to represent a significant environmental concern" is misplaced. While the Project's prior redevelopment may have been safe for *commercial office* and *non- residential* uses and for the present building's design and location, it may not necessarily be safe for the Project's proposed transient housing uses and changes to the landscaping, where the Project involves people residing, eating, sleeping at the Project site for extended periods of time, as well as removal of landscaping, construction of new amenities, a wading pool, and undergrounding of utilities.

Notably, each Phase I ESA is only good for one year and requires renewed analysis and review of databases. For example, a prior gasoline station that had an underground storage tank may not have been leaking before, but it may be leaking now. (**Exhibit S** [Geoforward.com website information, where Geoforward is an environmental firm preparing ESAs].) As also stated in an upcoming LACBA webinar series:

> In the current real estate market, we are seeing many existing commercial properties being evaluated under **alternative redevelopment options** including residential or community uses. Along with the challenges of local permitting and entitlement processes, there are sometimes **overlooked elements** such as the **need** to **take** a **closer look** at the site **conditions** from an **environmental** standpoint. As an example, there may be land use covenants that need to be amended or removed; clients may have a series of "**clean**" **Phase I reports** and not realize that those reports did **not sufficiently** consider a **potential residential land use**, particularly in the current **vapor intrusion** regulatory atmosphere; there may be additional investigation/remediation work necessary to enable a change in land use.

(**Exhibit U,** emph. added [Informational re LACBA webinar series].)

As such, Phase I ESA's or the Draft EIR's reliance on the rebuilding of the Project site to conclude that the Project Site is *clean* and safe from hazards is not supported.

## RESPONSE NO. 5-46

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment states that the Phase I ESA, included in Appendix E within the Draft EIR is inaccurate because it assumes that because the Project was redeveloped the historic occupancies such as the gasoline stations at the Project Site is not likely to represent significant environmental concern. Furthermore, the comment states the commentor's belief that the Phase I is only valid for one year and requires a renewed analysis and review of databases. As described within the Phase I ESA, included as Appendix E within the Draft EIR, due to the redevelopment of the Project Site with an office building and subterranean garage, the Project Site is not likely to represent an environmental concern. As part of the development of the existing office building, significant environmental impacts would have been addressed.

The Phase I ESA was prepared in February 28, 2024 and provides an analysis of currently and readily available documents, including maps, aerial photographs, governmental databases of known hazardous waste sites and underground tanks. Therefore, the analysis presented in the Phase I ESA is relevant and provides the most up to date information. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-47

**Second**, the Draft EIR fails to mention several critical details from the Phase I ESA, including all of the Phase I ESA findings of "identified" hazardous materials on the Project Site, as shown in the screenshot below from the Phase I ESA:

## 4.1 SITE RECONNAISSANCE FINDINGS

| Yes | No | Observation |
|---|---|---|
| | X | Aboveground Storage Tanks (ASTs) and Underground Storage Tanks (USTs) |
| X | | Identified Hazardous Materials |
| X | | Polychlorinated Biphenyls (PCBs) – Electric or Mechanical Equipment Likely to Contain Fluids |
| X | | Radioactive Man-Made Materials |
| | X | Pits, Ponds, and Lagoons |
| | X | Septic Tanks and Cesspools |
| X | | Wells, Cisterns, Sumps, and Drains |
| | X | Wastewater or Grease Interceptors |
| | X | Interior Stains or Corrosion |
| | X | Strong, Pungent, or Noxious Odors |
| | X | Pools of Liquid |
| | X | Stained Soil or Pavement |
| | X | Stressed Vegetation |
| X | | Other |

(DEIR, Appendix E, p. 4/pdf p. 13.)

Also, Phase I ESA acknowledges that the Project Site is listed on *several* **hazardous materials** databases, as shown from the Phase I ESA's screenshot below:

Environmental Databases

The Site was identified on numerous environmental databases due to being a hazardous waste generator in 1999, 2013, 2017, and 2020. No violations were identified on these databases. The Site was identified on the HAZNET database for generating the following hazardous waste:

- Off-specification, aged, or surplus organics in 2016, 2018, 2020, and 2021
- Liquids with pH less than or equal to two in 2020
- Other organic solids in 2020 and 2021

The Site was also identified on the Emergency Response Notification System (ERNS) and the California Hazardous Material Incident Report System (CHMIRS) on April 7, 2007, for the release of dirt and dust from the roof that washed down with a non-butyl based soap into the storm drain due to operator error. The cleanup was completed by Infiniti Environmental. No further cleanup was required. The appearance of the Site on these databases reflects proper disposal of hazardous waste. Based on a lack of violations and that the release of dirt, dust, and soap was cleaned up, these listings are not considered to represent a significant environmental concern.

0503.1009.0_Phase_I_ESA ii

(DEIR, Appendix E/Phase I ESA, p. ii/pdf p. 6.)

Critically, the Draft EIR discounts the methane risks at the Project site, which – per Phase I ESA – need to be studied. As the Phase I ESA provides:

> The Site is located within the City of Long Beach Methane Gas Mitigation Zone recognized by the Long Beach Department of Development Services. For sites within the Methane Gas Mitigation Zone, the Long Beach Department of

> Development Services, through Chapter 18.79 of the Long Beach Building Code, requires that subsurface soil vapor sampling for methane be conducted prior to any new development.

(DEIR, Appendix E/Phase I ESA, p. iv/pdf p. 8.)

> Hazards and dangers of methane gas and oil wells have been acknowledged by the City of Los Angeles,[13] including Division 71, Sec 91.7101 through 91.7109, as well as CA Building Code, both of which require specific mitigation measures.

Based on So-Cal's caution:

**"METHANE AND HEALTH AND SAFETY"**

> Methane is non-toxic and creates no hazard when inhaled in limited quantities; however, if large quantities of natural gas or methane is allowed to displace air, lack of oxygen may result in suffocation.
>
> Methane can be flammable when mixed with air between certain concentrations (4.5 percent to 15 percent) and where there is an ignition source.
> SoCalGas® conducts extensive safety programs to prevent the escape of natural gas from its system; and as a health and safety precaution, adds a distinctive odor to natural gas so most people can easily notice its presence.
> If you smell a natural gas odor, hear the hissing sound of gas escaping or see other signs of a leak, REMAIN calm. DON'T smoke or light a match, candle or other flame. DON'T turn electrical appliances or lights on or off, operate machinery, or use any device that could create a spark. IMMEDIATELY EVACUATE the area, and from a safe location, call SoCalGas at 1-800-427- 2200, or call 911 if the damage results in a natural gas leak that may endanger life or cause bodily harm or property damage."[14]

Thus, methane gas may be dangerous to public health depending on its concentrations.

In addition, the City of Los Angeles' Methane Ordinance mentions about *fire* hazards of methane:

> "WHEREAS, there was a **fire** in the **Fairfax Area** of the City of Los Angeles in **1985**, due to **high volume** of **methane gas seepage** through cracks in the concrete floor of a building;
>
> WHEREAS, in Council File No. 01-1305, the City Council directed the City's Departments of Building and Safety, Engineering, and Planning, as well as, the Chief Legislative Analyst and Office of Administrative and Research Services, to form a work group and recommend uniform safety requirements regarding methane, for **all future** development throughout the City;
>
> WHEREAS, a study by the work group was conducted regarding areas throughout the City of Los Angeles **to identify areas** where subsurface methane gas may be found;…"

In light of these fire hazards and according to these directives, the City of Los Angeles mapped *all* the sites in the Project as being in *methane zone.*

Further, the City of Los Angeles' methane ordinance provides *general* methane mitigation measures, and *specific* methane mitigation measures. Thus, under SEC. 91.7103. GENERAL METHANE MITIGATION REQUIREMENTS:

> All new buildings and paved areas located in a Methane Zone or Methane Buffer Zone shall comply with these requirements and the Methane Mitigation Standards established by the Superintendent of Building. The Methane Mitigation Standards provide information describing the installation procedures, design parameters and test protocols for the methane gas mitigation system, which are not set forth in the provisions of this division.

The City of LA's methane ordinance then lists numerous mitigation standards, including methane testing at the project sites, that must be followed by the City of Long Beach and not ignored.

In addition, the Methane Ordinance provides *additional* remedial measures: "SEC. 91.7109. ADDITIONAL REMEDIAL MEASURES. 91.7109.1.

> **General Remedial Measures.**
>
> In the event the concentration of methane gas in any building located in a Methane Zone or Methane Buffer Zone reaches or exceeds 25 percent of the minimum concentration of gas that will form an ignitable mixture with air at ambient temperature and pressure, the owner shall hire an engineer to investigate, recommend and implement mitigating measures. These measures shall be subject to approval of this Department and the Fire Department. 91.7109.2.
>
> **Abandoned Oil Well.**
>
> Any abandoned oil well encountered during construction shall be evaluated by the Fire Department and may be required to be re- abandoned in accordance with applicable rules and regulations of the Division of Oil, Gas and Geothermal Resources of the State of California. Buildings shall comply with these provisions and the requirements of **Section 91.6105 of this Code**, **whichever is more restrictive**."

(Emph. added.)

In addition, Section 91.6105 of the Building Code provides:

> **SEC. 91.6105. SEPARATION FROM OIL WELLS.**
>
> **(Amended by Ord. No. 186,488, Eff. 12/27/19.)**
>
> No school, hospital, sanitarium or **assembly occupancy** shall be within **200 feet** from the center of the oil well casing.
>
> No public utility fuel manufacturing plant or public utility electrical generating, receiving or distribution plant shall be located within 200 feet from the center of the oil well casing.

**No building more than 400 square feet** (37 m $^2$ ) in area **and taller than 36 feet in height** shall be erected **within 50 feet** from the center of an oil well casing.

**A distance separation** between the exterior wall of the building and the **center of an oil well casing** shall be maintained with a horizontal distance equal to **1-1/2 times the building's height,** provided however, that that distance need not exceed 200 feet. The building height for this provision shall be measured vertically from the adjacent lowest ground elevation to the ceiling of the top story.

**EXCEPTIONS:** The distance separation may be reduced to the following:

1. 35 feet separation if a solid 6 inches thick masonry wall and no shorter than 6 feet tall to be constructed within 50 feet from the building in between the oil well and all portions of the building.
2. 26 feet if any portion of the building exterior walls within 50 feet from the center of an oil well casing shall be constructed with no openings and one hour fire resistive construction with a 3 foot high fire rated parapet.
3. 15 feet if any portion of the building exterior walls within 50 feet from the center of an oil well casing shall be constructed with no openings and two-hour fire resistive construction with a 3 foot high fire rated parapet.

The provisions specified within this section shall not apply to oil wells that have been abandoned per LAMC Section 57.5706.3.16 and in accordance with the applicable rules and regulations of the Division of Oil, Gas, and Geothermal Resources of the State of California.

Footnote 13: https://www.ladbs.org/docs/default-source/publications/ordinances/methane-code---ordinance-no-175790.pdf?sfvrsn=d8eeb53_10

Footnote 14: https://www.socalgas.com/stay-safe/methane-emissions/methane-and-health-and-safety#:%7E:text=Methane%20is%20non%2Dtoxic%20and,oxygen%20may%20result%20in%20suffocation

## RESPONSE NO. 5-47

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. This comment asserts that the Draft EIR failed to disclose all of the Phase I ESA findings. Findings discussed in the Phase I ESA are discussed within Section 4.7 Hazards and Hazardous Materials in the Draft EIR. The Phase I ESA prepared for the Project was included in Appendix E of the Draft EIR. Historical findings discussed in the Phase I ESA are discussed on pages 4.7-7 through 4.7-12 of the Draft EIR. As described within the Phase I ESA, the hazardous materials listed were not considered to represent a significant concern. Furthermore, the Phase I ESA states that the Project Site is located within the City of Long Beach Methane Gas Mitigation Zone. Chapter 18.79 of the LBMC requires that subsurface soil vapor sampling for methane be conducted prior to any new development. As discussed on page 4.7-9 through 4.7-10 within Section 4.7 Hazards and Hazardous Materials of the Draft EIR, the Project would be an adaptive reuse of the existing office building with minimal grading and excavation, therefore, Chapter 18.79 of the LBMC would not be applicable for the Project and the Project would not conduct subsurface soil vapor sampling for methane. Regardless, as described on page 4.7-13 in Section 4.7, Hazards and Hazardous Materials, of the Draft EIR, the Project would be required to survey the existing building on-site for the presence of ACM, LBP, and PCBs and remove any ACBMs, LBP, or PCBs in

compliance with Cal/OSHA and SCAQMD standards. Compliance with the regulatory requirements associated with Project construction would reduce impacts to less than significant. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-48

Here, Phase I ESA of the Project provides that there are *wells* and *sumps* on the Project site. Phase I ESA also provides that the Project is located in methane zone. And the Project proposes to bring 593 students onto the Project site. Moreover, despite the adaptive reuse of the existing building, the Project site will involve grading and construction, including to upsize or add utility pipes. In other words, the Project involves soil disturbance. It is, therefore, reasonably foreseeable that the Project presents a fire and contamination risks for both the students on the Project site and also the surrounding environment due to the disturbance of soils on the Project Site.

And notwithstanding, the Draft EIR disclaims the need for further methane testing or methane dangers by relying only on the claim that no re-development is anticipated at the Project site. The Draft EIR claims:

> Methane
>
> The Project Site is located within the City of Long Beach Methane Gas Mitigation Zone. For sites within the Methane Gas Mitigation Zone, the Long Beach Department of Development Services, through Chapter 18.79 of the Long Beach Municipal Code, requires that subsurface soil vapor sampling for methane be conducted prior to any new development. Therefore, a methane survey would be required if the Project Site is to be re-developed. The **Project involves** the **adaptive reuse** of the existing office building on-site and does not include any new development within the Project Site. **As such**, Chapter 18.79 of the Long Beach Municipal Code is not applicable to the Project, and the Project would **not conduct** subsurface **soil vapor sampling** for methane.

(DEIR, p. 4.7-9—4.7-10, emph. added.)

For reasons mentioned above, the City's disclaimer of methane hazards disregards the fire risks, as well as the fact that the Project proposes *both* re-development (construction activities and soil disturbance) *and* also change of use from office to student dormitory, requiring methane testing to prevent methane contamination.

## RESPONSE NO. 5-48

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. This comment states that the Project is located within the City of Long Beach Methane Gas Mitigation Zone. As described on page IV within the Phase I ESA, within Appendix E of the Draft EIR, the Project Site is located within the City of Long Beach Methane Gas Mitigation Zone.

Prior to any new development, a Project within this zone would be required to comply with Chapter 18.79 of the LBMCand conduct soil vapor sampling for methane. The Project would involve the adaptive reuse of an existing building and would not require any significant excavation that would

expose the Project to hazardous conditions. Furthermore, as described in the Draft EIR, as the Project is an adaptive reuse of an existing building, which would require minimal grading and earthwork activities. Therefore, the Project would not require subsurface soil vapor sampling for methane. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-49

Lastly, Phase I ESA admits that the Project Site may have asbestos, lead, PCB, radon and other hazardous materials which are dangerous for people's health:

> The current Site building was constructed prior to bans using asbestos-containing building materials (ACBMs), lead-based paint (LBP), and polychlorinated biphenyls (PCBs) in electrical equipment came into effect in 1989, 1978, and 1978, respectively. No testing is known to have been performed to evaluate for the presence of ACBMs, LBP, or PCBs at the Site.

(DEIR, Appendix E, Phase I ESA, p. iv/pdf p. 8.)

And yet, no testing of the Project site for asbestos, lead, PCBs or radon was requested at the time of Phase I ESA or was performed, while radon testing exceeded safety levels at one location. (DEIR, Appendix E, Phase I ESA, pp. 5-7.)

It is undisputed that both lead and asbestos are dangerous to people's health. While intact asbestos by itself may not be hazardous, damaged or disturbed asbestos may release asbestos fibers and become a health hazard.[15] Per Occupational Health and Safety Administration's **("OSHA")** description:

> **What are the hazards of asbestos?**
>
> Asbestos is well recognized as a health hazard and its use is now highly regulated by both OSHA and EPA. Asbestos fibers associated with these health risks are too small to be seen with the naked eye. Breathing asbestos fibers can cause a buildup of scar-like tissue in the lungs called asbestosis and result in loss of lung function that often progresses to disability and death. Asbestos also causes cancer of the lung and other diseases such as mesothelioma of the pleura which is a fatal malignant tumor of the membrane lining the cavity of the lung or stomach. Epidemiologic evidence has increasingly shown that all asbestos fiber types, including the most commonly used form of asbestos, chrysotile, causes mesothelioma in humans.
>
> (OSHA's Definition of "Asbestos" on its Official Website.)[16]
>
> Similarly, *lead* is dangerous to people and their families. Per OSHA's report:
>
> Lead has been poisoning workers for thousands of years. Lead can damage the central nervous system, cardiovascular system, reproductive system, hematological system, and kidneys. When absorbed into the body in high enough doses, lead can be toxic.

> In addition, workers' lead exposure can harm their children's development. Short-term (acute) overexposure–as short as days--can cause acute encephalopathy, a condition affecting the brain that develops quickly into seizures, coma, and death from cardiorespiratory arrest.
>
> Short-term occupational exposures of this type are highly unusual but not impossible. Extended, long-term (chronic) overexposure can result in severe damage to the central nervous system, particularly the brain. It can also damage the blood-forming, urinary, and reproductive systems. There is no sharp dividing line between rapidly developing acute effects of lead and chronic effects that take longer to develop.
>
> (OSHA report, 2004 *Lead in Construction,* p. 3)[17]

OSHA also documents the adverse effects of lead on people's reproductive health:

> REPRODUCTIVE RISKS
>
> Lead is toxic to both male and female reproductive systems. Lead can alter the structure of sperm cells and there is evidence of miscarriage and stillbirth in women exposed to lead or whose partners have been exposed. Children born to parents who were exposed to excess lead levels are more likely to have birth defects, mental retardation, or behavioral disorders or to die during the first year of childhood.
>
> Workers who desire medical advice about reproductive issues related to lead should contact qualified medical personnel to arrange for a job evaluation and medical followup--particularly if they are pregnant or actively seeking to have a child. Employers whose employees may be exposed to lead and who have been contacted by employees with concerns about reproductive issues must make medical examinations and consultations available.

(OSHA report, 2004 *Lead in Construction,* p. 4.)

The Project's unmitigated impacts of lead and asbestos (and the disturbance of the soil of a potentially contaminated site, as discussed *infra*) may have significant impacts and broader consequences, including through polluting the wetlands, the groundwater and the surface waters close to the Project Site. As described by the report on the Federal Aviation Administration's website:

> Water resources are surface waters and groundwater that are important in providing drinking water and in supporting recreation, transportation and commerce, industry, agriculture, and aquatic ecosystems. **Surface** water, **groundwater**, **floodplains**, and **wetlands do not** function as **separate** and isolated components of the watershed, but rather as a **single**, **integrated** natural system. **Disruption** of any one part of this system can have **consequences** to the functioning of the **entire** system.

14.1. Wetlands

For regulatory purposes under the Clean Water Act (CWA), the term wetlands means areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a

prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Areas covered with water for such a short time that there is no effect on moist-soil vegetation are not considered wetlands, nor are the waters of streams, reservoirs, and deep lakes. **Wetlands** provide many benefits to the **human**, **biological**, and **hydrological** environment, including **habitat** for **fish** and **wildlife**, **water quality** improvement, **flood storage**, and opportunities for **recreation**.

(FAA Report/Publication, 2/2020, p. 14-2, emph. added.)[18]

CEQA Guidelines mandate: "*Special emphasis should be placed on environmental resources that are rare or unique to that region and would be affected by the project.* The EIR must ... permit the significant effects of the project to be considered in the full environmental context." (CEQA Guidelines § 15125(c), italics added.) The EIR here fails this mandate.

The Draft EIR fails to duly address the dangers of the aforementioned hazards by relying solely on regulatory compliance:

> Project construction would include grading and export of minor amounts of construction debris. Construction activity would comply with SCAQMD Rule 403, addressing fugitive dust sources, Rule 1166 addressing VOC emissions from excavating, grading, handling, and treating VOCcontaminated soil, and Rule 1466, requiring minimization of off-site fugitive dust emissions from earth-moving activities at sites containing specific toxic air contaminants. Compliance with the regulatory requirements associated with Project construction and the requirements of the NPDES Construction General Permit would reduce impacts to less than significant during Project construction activities.

(DEIR, p. 4.7-13.)

The EIR's reliance on regulatory compliance measures is not warranted and does not support its finding that the Project's hazards impacts will be less than significant.

Footnote 15: *See*, https://www.cpsc.gov/safety-education/safety-guides/home/asbestos-home;;*see also*, medical conditions associated with asbestos:https://www.atsdr.cdc.gov/asbestos/health_effects_asbestos.html
Footnote 16: 6 See, https://www.osha.gov/asbestos
Footnote 17: See, https://www.osha.gov/sites/default/files/publications/osha3142.pdf
Footnote 18: See also, various regulations to protect wetlands from potential adverse impacts at pp. 14-2—5:
https://www.faa.gov/about/office_org/headquarters_offices/apl/environ_policy_guidance/policy/faa_nepa_order/desk_ref/media/14-water-resources.pdf

## RESPONSE NO. 5-49

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. This comment mentions that the Phase I ESA, included in Appendix E of this Draft EIR states that the Project Site may have asbestos-containing materials (ACM), lead-based paint (LBP), Polychlorinated Biphenyls (PCB), radon, and other hazardous materials. As described on

page 4.7-12 and 4.12-13 within Chapter 4.7 Hazards and Hazardous Materials of the Draft EIR, the Project would be required to survey the existing building for the presence of ACM, LBP, PCB, and radon. In accordance with the National Emission Standards for Hazardous Air Pollutants (NESHAPS) and SCAQMD regulations, all suspect materials, finishes, and coating that would be impacted by renovation or demolition regardless of the date of construction would be surveyed for the presence of ACBMs by State-licensed asbestos consultants, as well as for LBP and PCBs. The removal of any ACBMs, LBP, or PCBs would be conducted in compliance with Cal/OSHA standards. Cal/OSHA standards regulate handling and disposal of asbestos encountered during construction work such as demolition and excavation. SCAQMD Rule 1403 establishes requirements to prevent asbestos emissions during building demolition, including requirements for asbestos surveying, notification, ACBM removal procedures and time schedules, ACBM handling and clean-up procedures, and storage, disposal, and landfilling requirements for asbestos-containing waste materials (ACWM). Rule 1403 requires records maintenance, including waste shipment records, and are required to use appropriate warning labels, signs, and markings. Similarly, LBP standards include exposure assessment, safety requirements, and employee training pertaining to lead exposure and handling. Building materials with a PCB concentration of 50 ppm or greater would be properly disposed according to TSCA standards. Therefore, compliance with Cal/OSHA and SCAQMD standards would ensure that any hazardous impacts be reduced to less than significant. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-50

Last but not least, Phase I ESA does not provide conclusive evidence that no *gas* station *USTs* are present on the Project site and also concedes that the Project site has been historically used as a dry cleaner site, presenting yet another REC overlooked by the EIR:

> According to EDR, this address was identified on the EDR Historical Dry Cleaners database in 1976 and on the Long Beach UST database with no tanks listed. While this address is not currently associated with the Site, it is likely a historic Site address based on its location and reviewed building permits. Permits reviewed indicated that a gasoline station and a car wash were demolished in 1979, prior to the development of the current Site structure in 1981. Based on the UST listing indicating no tanks and that the Site consists of three subterranean parking levels, USTs associated with the former gasoline station were likely removed prior to or during redevelopment of the Site.
>
> (DEIR, Appendix E, Phase I ESA, p. 18/pdf p. 27.)

By understating the above-noted myriad of hazards and hazardous materials impacts, the Draft EIR also understates the Project's adverse impacts on human health and fails to duly mitigate those. For this purpose, the Draft EIR is legally inadequate, as it fails its informational and good faith disclosure purpose of CEQA and leaves the decisionmakers uninformed about the Project's impacts and environmental price tag.

## RESPONSE NO. 5-50

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment states that the Phase I ESA, provided in Appendix E of the Draft EIR does not state if there are gas station USTs present at the Project Site. As discussed on page 25 of the Phase I ESA, no USTs were listed on the Long Beach UST database. Based on the UST listing, there are no tanks at the Project Site and that the Project site consists of three subterranean parking levels, which indicates that the historic occupancies of gasoline stations at the site are not likely to represent an environmental concern. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-51

The Draft EIR's findings of less than significant land use impacts is also flawed as it relies on the erroneous assumption that the Project's consistency with the General Plan and applicable plans can be achieved by simply *changing* those plans. The Draft EIR also presumes that the Project is close to a major transit stop. Not so.

The Draft EIR concedes that the Project seeks General Plan amendments and concludes that – *with* the approval of such amendments – the Project will not have land use impacts and will not have conflicts with applicable plans:

> Project Impacts
>
> *Threshold LUP-2: Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?*
>
> Impact LUP-2: Less than Significant Impact.
>
> The Project Site is designated as a CC PlaceType per the City's General Plan Land Use Element. The CC PlaceType permits commercial uses that are automobile oriented. The Project proposes a General Plan Amendment/Map Change to change the existing land use designation of the Project Site from CC to NSC-Moderate. The NSC-Moderate PlaceType accommodates moderate density mixed use development that is typically located near single-family neighborhoods.5 The NSC-Moderate PlaceType adheres to the Project's need for residential occupancy. Upon City approval of the General Plan Amendment/Map Change, the Project would be consistent with the NSC-Moderate PlaceType as a residential use for students.
>
> The Project Site is zoned as CCA, which permits retail and service uses for an entirety community including convenience and comparison shopping for goods and associate services. The Project also proposes a Zoning Code Amendment/Map Change to modify the existing zone from CCA to MU-3. Special Group Residences are permitted in the MU-3 Zoning District with approval of a CUP; the Project includes an application for the required CUP to allow for dormitory use as a Special Group Residence. The MU-3 Zoning District is intended for the highest intensity neighborhood activity centers in proximity to bus routes and multi-modal corridors. The Project Site, with its proximity to multiple transit facilities and freeways, would be consistent with the purpose of the MU-3 Zoning District, upon approval of the proposed Zoning Code Amendment/Map Change by the City.

> The following analysis describes the Project's consistency with current regional and local plans and policies pertaining to land use and planning, which were outlined in further detail in the Regulatory Framework discussion above.
>
> Accordingly, upon approval of the Project's entitlements by the City, the Project would not conflict with the Project Site's General Plan and zoning designations, SCAG 2024 RTP/SCS, General Plan, or Zoning Ordinance. As such, the Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, and impacts would be less than significant.
>
> (DEIR, p. 4.9-4—4.9-5.)
>
> The City's reasoning is incorrect. The EIR has to reveal the Project's inconsistency and conflicts *as against* the existing (unchanged) applicable plans. "The Planning and Zoning Law does not contemplate that general plans will be amended to conform to zoning ordinances. The tail does not wag the dog. The general plan is the charter to which the ordinance must conform." (*Lesher Communications, Inc. v. City of Walnut Creek* (1990) 52 Cal.3d 531, 538-544.)

## RESPONSE NO. 5-51

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The commentor claims that the Project is not consistent with the General Plan Land and is not located near a major transit stop. As described on page 4.9-4 through 4.9-5, within Section 4.9 Land Use and Planning in the Draft EIR, upon approval of the Project's entitlements by the City, the Project would not conflict with the Project Site's General Plan and zoning designations, SCAG 2024 RTP/SCS, General Plan, or Zoning Ordinance. As such, the Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, and impacts would be less than significant. The Project Site is designated as a CC PlaceType per the City's General Plan Land Use Element. The CC PlaceType permits commercial uses that are automobile oriented. The Project proposes a General Plan Amendment/Map Change to change the existing land use designation of the Project Site from CC to NSC-Moderate. The NSC-Moderate PlaceType accommodates moderate density mixed use development that is typically located near single-family neighborhoods.5 The NSC-Moderate PlaceType adheres to the Project's need for residential occupancy. Upon City approval of the General Plan Amendment/Map Change, the Project would be consistent with the NSC-Moderate PlaceType as a residential use for students.

The Project Site is zoned as CCA, which permits retail and service uses for an entirety community including convenience and comparison shopping for goods and associate services. The Project also proposes a Zoning Code Amendment/Map Change to modify the existing zone from CCA to MU-3. Special Group Residences are permitted in the MU-3 Zoning District with approval of a CUP; the Project includes an application for the required CUP to allow for dormitory use as a Special Group Residence. The MU-3 Zoning District is intended for the highest intensity neighborhood activity centers in proximity to bus routes and multi-modal corridors. The Project Site, with its proximity to multiple transit facilities and freeways, would be consistent with the purpose of the MU-3 Zoning District, upon approval of the proposed Zoning Code Amendment/Map Change by the City. Therefore, the Project would be consistent with current regional and local plans and policies

pertaining to land use and zoning. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-52

Also, separate from CEQA, if a Project, as here, is inconsistent with the general plan, it not only may cause land use impacts but it also violates the City's General Plan and, in turn, violates the State Planning and Zoning Law's requirement that the proposed projects be consistent with General Plans, to ensure orderly growth.

Moreover, to the extent the City relies on the Project's purported consistency with the General Plan based on the alleged proximity of the Project to transit corridors (DEIR, p. 4.9-6), that reliance is misplaced. There is no evidence that the Project is indeed close to public transit, as it is contemplated by CEQA or law, including AB 2097. (See Section IV.A, *supra.*) One bus line traveling east/west is not sufficient to constitute a major transit stop, as discussed earlier. A major transit stop is, by definition, an *intersection* of two or more buses lines. There is also no evidence that the existing bus line traveling east/west meets the presently updated 20-minute service intervals at peak hours.

## RESPONSE NO. 5-52

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration and will be forwarded to decision-makers for their review and consideration. As discussed in Response to Comment No. 5-51, as described on page 4.9-4 through 4.9-5, within Section 4.9 Land Use and Planning in the Draft EIR, upon approval of the Project's entitlements by the City, the Project would not conflict with the Project Site's General Plan and zoning designations, SCAG 2024 RTP/SCS, General Plan, or Zoning Ordinance. As such, the Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, and impacts would be less than significant. Furthermore, as discussed on page 2-4 within Chapter 2 Project Description of the Draft EIR, the Long Beach Transit (LBT) has multiple stops that travel along the Project Site frontages, including Line 41, 45, and 46 which travels west/east along East Anaheim Street. These LBT routes provide service to the Los Angeles County Metropolitan Transportation Authority (Metro) Downtown Long Beach Station 3.57 miles southwest. Additional LBT stops for Lines 171 and 175 are provided 250 feet east of the Project Site. Various other LBT Lines, including Lines 91, 111, 112, 121, and 173, are located within 0.5 miles of the Project Site. As such, the Project is located in proximity to a major transit stop. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-53

Similarly, the City's consistency finding based on the claim that the Project reduces air quality and GHG impacts (DEIR, p. 4.9-6) is misplaced. As discussed earlier, the Project's GHG and air quality analyses are legally flawed and improperly rely on *net* impacts and also on understated vehicle miles or trips. It is reasonably foreseeable that the Project may have significant air quality and GHG impacts and not reduce those.

As such, the City's conclusion of less than significant impacts and consistency with the General Plan is legally inadequate, erroneous, and violates both CEQA and the State's Planning and Zoning Law and the City's own General Plan.

## RESPONSE NO. 5-53

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. As discussed in Response 5-29, the methodology regarding ITE rate and trip lengths are appropriate. The air quality and GHG emissions are based on CalEEMod default, and no net emissions were analyzed for the purposes of CEQA. The GHG emissions analysis included quantitative analysis, consistency with City's CAP and consistency with State policies and goals. Therefore, the air quality and GHG emissions are conservative and consistent with industry standards. No revisions to the Draft EIR are necessary. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-54

**7.Traffic, Emergency, and Cumulative Impacts**

In view of the above noted inadequate project description, inaccurate baseline assumptions, and improper reliance on *vehicle trip credits* and AB 2097, the Project may have significant traffic and parking impacts. Briefly, the EIR presumes that the Project will generate only 507 daily trips, solely based on crediting and discounting over 1,100 daily vehicle trips of the present office uses. **First**, there is no evidence that the present uses indeed generate over 1,100 daily vehicle trips. **Second**, even if they do, those trips should not be discounted but rather *added* to the Project's impacts since those offices will not close down but rather move to a different location and continue to generate trips.

## RESPONSE NO. 5-54

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. First, the present office use is estimated to generate over 1,100 daily trips based on industry standard data from the Institute of Transportation Engineers (ITE). This estimate is derived from data collection at similar sites and considers the scale of office activities. Additionally, the project's net trip generation estimate of 507 daily trips is conservative (higher) since it was assumed that the number of bedrooms equals the number of beds (593) because in actuality there will be some bedrooms that contain more than one bed. Second, the trips generated by the relocated office use will not impact the project and proposed site. The trip generation for the relocated office will be considered in their updated location through a separate analysis. Therefore, the net increase in trips specific to the new project site remains reflective of the anticipated conditions. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-55

**Third**, the Project improperly claims that it qualifies for AB 2097 parking reduction and hence ignores the impacts of the reduced parking while at the same time providing tandem parking, and far less parking spaces for potentially 593 cars (of 593 students). The secondary impacts of parking shortage are still a concern for CEQA. They generate more traffic, more gridlock, more air quality, GHG, noise, and other impacts.

## RESPONSE NO. 5-55

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment discusses potential impacts associated with parking at the Project Site.

It should be noted that parking on its own, is not considered a CEQA issue. The Project would provide 364 parking stalls (218 standard spaces, 19 accessible spaces, and 127 tandem spaces). As indicated in Section 4.12 Transportation of the Draft EIR, projects located within half-mile of a major transit stop are generally eligible for the automobile parking reduction provided by AB 2097. This includes residential projects such as the Project; therefore, the Project would qualify for AB 2097 parking reduction. As stated on page 4.12-5 within Section 4.12 Transportation of the Draft EIR, the Project Site is located within a variety of transit services. Long Beach Transit (LBT) has multiple stops that travel along the Project Site frontages, including Line 41, 45, and 46 which travels west/east along East Anaheim Street. These LBT routes provide service to the Los Angeles County Metropolitan Transportation Authority (Metro) Downtown Long Beach Station 3.57 miles southwest of the Project. Additional LBT stops for Lines 171 and 175 are provided 250 feet east of the Project Site. Various other LBT Lines, including Lines 91, 111, 112, 121, and 173, are located within 0.5 miles of the Project Site. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-56

**Fourth**, the City disregards the Project's cumulative impacts by claiming that there are no related *new* projects within 1 mile. However, as noted earlier, cumulative impacts are not limited only to the Project's impacts along with *new* uses, but rather past, present, and probable future projects. Also, the Housing Element of the City's General Plan marks the 5155 E. Pacific Coast Highway site as a potential residential development site, which does constitute a *new probable future* project for purposes of a cumulative impact analysis. In addition, the City's records show that Caltrans may be implementing certain transportation changes near the Project site:

1. Pacific Coast Highway is a State highway under the jurisdiction of the California Department of Transportation (Caltrans). A street improvement encroachment permit from (Caltrans) will be required for all work within the Pacific Coast Highway right-of-way. The Developer shall contact Caltrans to request additional information regarding its permitting process and provide a copy of the approved permit and design plans to the Department of Public Works.

   m. There appear to be ongoing/future City and Caltrans street improvement projects adjacent to the project site along Anaheim Street and Pacific Coast Highway. As such, Anaheim street may be under a street moratorium when the project construction commences. The Developer shall provide written approval from the City to implement any street

improvements prior to the end of the existing moratorium, in the form of a discretionary permit for excavation. Any work within a street under moratorium requires a complete grind and overlay from block to block and the Applicant shall adhere to this requirement. Applicant shall also coordinate with Caltrans regarding any conflict with their proposed improvements along Pacific Coast Highway.
(**Exhibit S**, p. 6.)

In sum, the City's traffic impact analysis *omits* critical details; the Project's traffic impacts and potential conflicts with other plans, and also improperly relies on flawed and incorrect baseline assumptions to understate the Project's impacts. For these reasons, the Draft EIR is legally deficient as to traffic impact analysis and fails good faith disclosures and informational mandates of CEQA.

## RESPONSE NO. 5-56

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. This comment claims that the Project did not identify any new projects within 1 mile of the Project Site; however, Caltrans may be implementing transportation projects near the Project Site as described within Exhibit S. As described on page 3-1 within Chapter 3 Environmental Setting of the Draft EIR, Section 15335 of the CEQA Guidelines defines "cumulative impacts" as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." This means that while the impacts of projects on their own may be insignificant, when analyzed in combination with impacts from other projects in the vicinity, they may be significant. CEQA Guidelines section 15130 requires EIRs to discuss the cumulative impacts of a project "when the project's incremental effect is cumulatively considerable." The City did not identify any projects within a 1-mile radius of the Project as meeting the City's criteria of 5,000 SF or greater of new commercial and/or industrial and greater than 10 new dwelling units that could be analyzed as part of the Cumulative Development analysis. Therefore, there are no cumulative developments that could be analyzed as part of the Project. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-57

### 8. Noise Impacts

The Draft EIR identifies the following sensitive receptors near the Project:

**Table 4.10-7: Sensitive Receptors**

| Receptor Description | Distance[1] and Direction from the Property Line of Project Site |
|---|---|
| Multi-Family Residential Dwellings | 55 feet to the west |
| Single-Family Residential Dwellings | 55 feet to the west |
| Rock Christian Fellowship | 175 feet to the east |
| Cambrian Homecare | 290 feet to the east |

1. Distances are measured from the Project Site boundary to the property line.
Source: Google Earth, 2024

(DEIR, p. 4.10-13.)

Yet, the Draft EIR concludes the Project will have no construction noise impacts since – for some reason – construction will be mostly located 170 feet from sensitive uses. This estimate is flawed,

however, since construction equipment and trucks may still be driving, parking, staging, or idling *near* the sensitive receptors and generate noise close to sensitive receptors.

## RESPONSE NO. 5-57

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. As discussed in the footnote on page 4.10-16 within Section 4.10 Noise of the Draft EIR, the construction noise analysis follows FTA methodology of evaluating construction noise from the main construction activity area. The purpose of this approach is that in reality construction activities would occur throughout a Project Site and not be concentrated at a single point near sensitive receptors. However, as shown in Table 4.10-9, within Section 4.10 Noise of the Draft EIR, Project construction noise levels are far below the 90 dBA $L_{eq}$ noise standard. Findings and Conclusion of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-58

Also, the Draft EIR's conclusion of no operational noise impacts is based on understatement of parking and traffic volumes. The Draft EIR claims, for example, that the Project's parking will have no noise impacts since it is enclosed in 3 levels of subterranean parking. However, the Draft EIR fails to acknowledge that the subterranean parking fails to provide parking for all 593 students and employees. As such, a *part* of the Project's generated parking uses may be on-street and will not be enclosed, thereby generating traffic noise.

## RESPONSE NO. 5-58

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. Parking is not a CEQA topic. In addition, the trip generation for the Project is consistent with industry protocol and methodology (see *RESPONSE NO. 5-29*). Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-59

Similarly, the Draft EIR claims that the Project will have less *traffic* noise only because it improperly presumes that the current uses already generate over 1,188 daily trips and that the Project's net trips, therefore, will be only 507 or even 291:

> *Operational Traffic Noise*
>
> According to the Project's Traffic Generation Analysis and Vehicle Miles Traveled Screening (Kimley-Horn, 2024), the Park Tower Student Housing Project would result in approximately 1,695 daily trips. The existing use on site generates 1,188 daily trips. Therefore, compared to the existing condition, the Project is anticipated to generate 507 net daily trips. The project is expected to generate a net of 291 average daily trips, which would result in noise increases on project area roadways. In general, a traffic noise increase of less than 3 dBA is barely perceptible to people, while a 5 dBA increase is readily noticeable (Caltrans, 2013). Generally, traffic volumes on project area roadways would have to

> approximately double for the resulting traffic noise levels to increase by 3 dBA. According to Citywide Traffic Flow maps, the roadways in the project area have between 10,000 and 26,300 daily trips. Therefore, the Project would not result in a doubling of trips and permanent increases in ambient noise levels more than 3 dBA would not occur. Therefore, there would not be any new operational traffic noise impacts. (Draft EIR p. 4.10-19.)

For all reasons mentioned in Section IV.B.1, *supra,* the Draft EIR's presumptions about the reduced traffic trips and crediting of the 1,188 trips are in error, making its conclusion of no traffic noise impacts also unsupported.

For this reason, too, the Draft EIR is legally inadequate and fails CEQA's informational mandates.

## RESPONSE NO. 5-59

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment is incorrect; the Draft EIR does not take credit for the existing transportation noise related to the previous land use. As discussed in *RESPONSE NO. 5-29*, the transportation and VMT analysis was prepared using ITE and industry standards. The operational traffic noise discussion states the proposed Project would have slightly more trips than the existing use. However, for the purposes of noise modeling, a roadway would need to have a doubling of vehicles to have a noticeable 3 dB increase in noise. As the Project is increasing trips by less than double the existing (1,188) it is logical that there would not be a perceptible increase. In addition, the roadways in this area have between 10,000 and 26,300 daily trips. This means the Project would have to have the same number to increase noise to a perceptible level. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required

## COMMENT NO. 5-60

### V. CONCLUSION

In view of the above-noted concerns, we respectfully request that the comment period for the EIR be extended and continued and the EIR to be recirculated to include the omitted information and provide meaningful analysis, identification, and mitigation of impacts as CEQA requires. We also request that a Phase II ESA be conducted to resolve and investigate issues that Phase I skipped or understated, including but not limited to soil sampling, methane testing, and asbestos and other hazards evaluation of the Project site. "CEQA contemplates *serious* and not superficial or pro forma consideration of the potential environmental consequences of a project." (*Leonoff v. Monterey County Bd. of Supervisors* (1990) 222 Cal.App.3d 1337, 1347, 272 Cal.Rptr. 372; emphasis added*; Burbank-Glendale-Pasadena Airport Authority v. Hensler* (1991) 233 Cal.App.3d 577, 593, fn. 3.)

If the City has any questions or concerns, please feel free to contact my Office.

## RESPONSE NO. 5-60

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. This comment requests that the City extend the comment period of the Draft EIR and that a Phase II be performed to analyze potential hazards at the Project Site. This comment is noted for the record. The City extended the EIR public review for an additional 45-days from January 27, 2025 through March 12, 2025. The City uploaded the Draft EIR and all appendices to the City's website and the Governor's Office of Land Use and Innovation State Clearinghouse portal on January 23, 2025. Additionally, the City notified the Long Beach Press Telegram, which published the Notice of Availability, and filed the Notice of Availability at the Los Angeles County Registrar-Recorder/County Clerk on January 27, 2025. All interested parties were notified about the extension of the public review period through a Notice of Time Extension of Public Review and Comment Period. Furthermore, a Phase II ESA would not be required as the Phase I ESA included in Appendix E of the Draft EIR determined that there is no evidence for designating the Site as a REC, HREC, or CREC based on reviews of historic documents and present site conditions. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-61

### Exhibit A

Soil Water Air Protection Enterprise ("SWAPE") is pleased to provide the following draft technical report explaining the significance of worker trips required for construction of land use development projects with respect to the estimation of greenhouse gas ("GHG") emissions. The report will also discuss the potential for local hire requirements to reduce the length of worker trips, and consequently, reduced or mitigate the potential GHG impacts.

## RESPONSE NO. 5-61

The comment is noted for the record and will be forwarded to decision-makers for their review and consideration. This comment provides a general introduction to the comments raised in this letter. Responses to the comments contained in this letter are provided in *RESPONSE NO. 5-61* through *5-64*. Because the comment does not raise a substantive issue on the content of the Draft EIR, no further response is warranted.

## COMMENT NO. 5-62

### Worker Trips and Greenhouse Gas Calculations

The California Emissions Estimator Model ("CalEEMod") is a "statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects."[1] CalEEMod quantifies construction-related emissions associated with land use projects resulting from off-road construction equipment; on-road mobile equipment associated with workers, vendors, and

hauling; fugitive dust associated with grading, demolition, truck loading, and on-road vehicles traveling along paved and unpaved roads; and architectural coating activities; and paving.[2]

The number, length, and vehicle class of worker trips are utilized by CalEEMod to calculate emissions associated with the on-road vehicle trips required to transport workers to and from the Project site during construction.[3]

Specifically, the number and length of vehicle trips is utilized to estimate the vehicle miles travelled ("VMT") associated with construction. Then, utilizing vehicle-class specific EMFAC 2014 emission factors, CalEEMod calculates the vehicle exhaust, evaporative, and dust emissions resulting from construction-related VMT, including personal vehicles for worker commuting.[4]

Specifically, in order to calculate VMT, CalEEMod multiplies the average daily trip rate by the average overall trip length (see excerpt below):

> "$VMT_d = \Sigma(\text{Average Daily Trip Rate}_i * \text{Average Overall Trip Length}_i)_n$
> Where:
> n = Number of land uses being modeled."[5]

Furthermore, to calculate the on-road emissions associated with worker trips, CalEEMod utilizes the following equation (see excerpt below):

> "$\text{Emissions}_{pollutant} = VMT * EF_{running,pollutant}$
> Where:
> $\text{Emissions}_{pollutant}$ = emissions from vehicle running for each pollutant
> VMT = vehicle miles traveled
> $EF_{running,pollutant}$ = emission factor for running emissions."[6]

Thus, there is a direct relationship between trip length and VMT, as well as a direct relationship between VMT and vehicle running emissions. In other words, when the trip length is increased, the VMT and vehicle running emissions increase as a result. Thus, vehicle running emissions can be reduced by decreasing the average overall trip length, by way of a local hire requirement or otherwise.

### Default Worker Trip Parameters and Potential Local Hire Requirements

As previously discussed, the number, length, and vehicle class of worker trips are utilized by CalEEMod to calculate emissions associated with the on-road vehicle trips required to transport workers to and from the Project site during construction.[7] In order to understand how local hire requirements and associated worker trip length reductions impact GHG emissions calculations, it is important to consider the CalEEMod default worker trip parameters. CalEEMod provides recommended default values based on site-specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with project type. If more specific project information is known, the user can change the default values and input project- specific values, but the California Environmental Quality Act ("CEQA") requires that such changes be justified by substantial evidence.[8] The default number of construction-related worker trips is calculated by multiplying the number of pieces of equipment for all phases by 1.25, with the

exception of worker trips required for the building construction and architectural coating phases.[9] Furthermore, the worker trip vehicle class is a 50/25/25 percent mix of light duty autos, light duty truck class 1 and light duty truck class 2, respectively."[10] Finally, the default worker trip length is consistent with the length of the operational home-to-work vehicle trips.[11] The operational home-to-work vehicle trip lengths are:

> "[B]ased on the ***location*** and ***urbanization*** selected on the project characteristic screen. These values were ***supplied by the air districts or use a default average for the state***. Each district (or county) also assigns trip lengths for urban and rural settings" (emphasis added). [12]

Thus, the default worker trip length is based on the location and urbanization level selected by the User when modeling emissions. The below table shows the CalEEMod default rural and urban worker trip lengths by air basin (see excerpt below and Attachment A).[13]

**Worker Trip Length by Air Basin**

| Air Basin | Rural (miles) | Urban (miles) |
|---|---|---|
| Great Basin Valleys | 16.8 | 10.8 |
| Lake County | 16.8 | 10.8 |
| Lake Tahoe | 16.8 | 10.8 |
| Mojave Desert | 16.8 | 10.8 |
| Mountain Counties | 16.8 | 10.8 |
| North Central Coast | 17.1 | 12.3 |
| North Coast | 16.8 | 10.8 |
| Northeast Plateau | 16.8 | 10.8 |
| Sacramento Valley | 16.8 | 10.8 |
| Salton Sea | 14.6 | 11 |
| San Diego | 16.8 | 10.8 |
| San Francisco Bay Area | 10.8 | 10.8 |
| San Joaquin Valley | 16.8 | 10.8 |
| South Central Coast | 16.8 | 10.8 |
| South Coast | 19.8 | 14.7 |
| **Average** | **16.47** | **11.17** |
| **Minimum** | **10.80** | **10.80** |
| **Maximum** | **19.80** | **14.70** |
| **Range** | **9.00** | **3.90** |

As demonstrated above, default rural worker trip lengths for air basins in California vary from 10.8- to 19.8-miles, with an average of 16.47 miles. Furthermore, default urban worker trip lengths vary

from 10.8- to 14.7- miles, with an average of 11.17 miles. Thus, while default worker trip lengths vary by location, default urban worker trip lengths tend to be shorter in length. Based on these trends evident in the CalEEMod default worker trip lengths, we can reasonably assume that the efficacy of a local hire requirement is especially dependent upon the urbanization of the project site, as well as the project location.

Footnote 1: "California Emissions Estimator Model." CAPCOA, 2017*, available at:* http://www.aqmd.gov/caleemod/home.

Footnote 2: "California Emissions Estimator Model." CAPCOA, 2017*, available at:* http://www.aqmd.gov/caleemod/home.

Footnote 3: "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.aqmd.gov/docs/defaultsource/caleemod/01_user-39-s-guide2016-32_15november2017.pdf?sfvrsn=4, p. 34.

Footnote 4: "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/defaultsource/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 14-15.

Footnote 5: "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 23.

Footnote 6: "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 15.

Footnote 7: "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.aqmd.gov/docs/defaultsource/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 34.

Footnote 8: CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 1, 9.

Footnote 9: "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 34.

Footnote 10: "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 15.

Footnote 11: "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 14.

Footnote 12: "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 21.

Footnote 13: "Appendix D Default Data Tables." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4, p. D-84 – D-86.

## RESPONSE NO. 5-62

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. This comment provides an example of local hiring. No response is required. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-63

### Practical Application of a Local Hire Requirement and Associated Impact

To provide an example of the potential impact of a local hire provision on construction-related GHG emissions, we estimated the significance of a local hire provision for the Village South Specific Plan ("Project") located in the City of Claremont ("City"). The Project proposed to construct 1,000 residential units, 100,000-SF of retail space, 45,000-SF of office space, as well as a 50-room hotel, on the 24-acre site. The Project location is classified as Urban and lies within the Los Angeles-South Coast County. As a result, the Project has a default worker trip length of 14.7 miles.14 In an effort to evaluate the potential for a local hire provision to reduce the Project's construction-related GHG emissions, we prepared an updated model, reducing all worker trip lengths to 10 miles (see Attachment B). Our analysis estimates that if a local hire provision with a 10-mile radius were to be implemented, the GHG emissions associated with Project construction would decrease by approximately 17% (see table below and Attachment C).

| Local Hire Provision Net Change | |
|---|---|
| **Without Local Hire Provision** | |
| Total Construction GHG Emissions (MT $CO_2e$) | 3,623 |
| Amortized Construction GHG Emissions (MT $CO_2e$/year) | 120.77 |
| **With Local Hire Provision** | |
| Total Construction GHG Emissions (MT CO2e) | 3,024 |
| Amortized Construction GHG Emissions (MT $CO_2e$/year) | 100.80 |
| ***% Decrease in Construction-related GHG Emissions*** | ***17%*** |

As demonstrated above, by implementing a local hire provision requiring 10 mile worker trip lengths, the Project could reduce potential GHG emissions associated with construction worker trips. More broadly, any local hire requirement that results in a decreased worker trip length from the default value has the potential to result in a reduction of construction-related GHG emissions, though the significance of the reduction would vary based on the location and urbanization level of the project site.

This serves as an example of the potential impacts of local hire requirements on estimated project-level GHG emissions, though it does not indicate that local hire requirements would result in reduced construction-related GHG emission for all projects. As previously described, the significance of a local hire requirement depends on the worker trip length enforced and the default worker trip length for the project's urbanization level and location.

Footnote 14: "Appendix D Default Data Tables." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4, p. D-85.

## RESPONSE NO. 5-63

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. This comment provides an example of local hiring. No response is required. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 5-64

Disclaimer

SWAPE has received limited discovery. Additional information may become available in the future; thus, we retain the right to revise or amend this report when additional information becomes available. Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable environmental consultants practicing in this or similar localities at the time of service. No other warranty, expressed or implied, is made as to the scope of work, work methodologies and protocols, site conditions, analytical testing results, and findings presented. This report reflects efforts which were limited to information that was reasonably accessible at the time of the work, and may contain informational gaps, inconsistencies, or otherwise be incomplete due to the unavailability or uncertainty of information obtained or provided by third parties.

## RESPONSE NO.5-64

The comment provides a disclaimer of the information available to SWAPE. Because the comment does not raise a substantive issue on the content of the Draft EIR, no further response is warranted.

## COMMENT NO. 5-65

**EXHIBIT B**

## RESPONSE NO. 5-65

Exhibit B contains the curriculum vitae of Dr. Paul Rosenfeld, a specialist in Risk Assessment and Remediation. This comment does not concern any environmental issue or information addressed or contained in the Draft EIR. Therefore, no further response is warranted.

## COMMENT NO. 5-66

**EXHIBIT C**

## RESPONSE NO.5-66

Exhibit C contains the curriculum vitae for Matthew F. Hagemann, P.G, C.Hg. QSD, QSP. This comment does not concern any environmental issue or information addressed or contained in the Draft EIR. Therefore, no further response is warranted.

## COMMENT NO. 5-67

**EXHIBIT D**

## RESPONSE NO. 5-67

Exhibit D contains a letter from the City of Long Beach to the Applicant. Please refer to *RESPONSE NO. 5-9* for a discussion about Exhibit D.

## COMMENT NO.5-68

**EXHIBIT E**

## RESPONSE NO. 5-68

Exhibit E contains meeting minutes from the Pre-Development Meeting for the Project. Please refer to *RESPONSE NO. 5-9* for a discussion about Exhibit E.

## COMMENT NO. 5-69

**EXHIBIT F**

## RESPONSE NO. 5-69

Exhibit F contains a Fee Description of all fees associated with the Project. This comment does not concern any environmental issue or information addressed or contained in the Draft EIR. Therefore, no further response is warranted.

## COMMENT NO.5-70

**EXHIBIT G**

## RESPONSE NO. 5-70

Exhibit G contains the Supplemental Plan Review Checklist No. 6 from the City of Los Angeles Department of Building and Safety. Exhibit G is not relevant to the Project, as the Project is located in the City of Long Beach as described in *RESPONSE NO. 5-11.*

Furthermore, this comment does not concern any environmental issue or information addressed or contained in the Draft EIR. Therefore, no further response is warranted.

## COMMENT NO. 5-71

### EXHIBIT H

Exhibit H contains building information about the Park Tower.

## RESPONSE NO. 5-71

This comment does not concern any environmental issue or information addressed or contained in the Draft EIR. Therefore, no further response is warranted.

## COMMENT NO. 5-72

### EXHIBIT I

## RESPONSE NO. 5-72

Exhibit I contains information about ProHealth Partners.

This comment does not concern any environmental issue or information addressed or contained in the Draft EIR. Therefore, no further response is warranted.

## COMMENT NO. 5-73

### EXHIBIT J

## RESPONSE NO. 5-73

Exhibit J includes an email correspondence between the City of Long Beach and the Applicant on March 27, 2024. Exhibit J provides Traffic Engineering comments.

## COMMENT NO. 5-74

### EXHIBIT K

## RESPONSE NO. 5-74

Exhibit K contains an email correspondence between the City and the Applicant discussing preliminary data needs for the Project. This exhibit is part of the public record. Therefore, no further response is warranted.

## COMMENT NO. 5-75

**EXHIBIT L**

## RESPONSE NO. 5-75

Exhibit L contains a site inventory of the City of Long Beach Housing Element. This comment does not concern any environmental issue or information addressed or contained in the Draft EIR. Therefore, no further response is warranted.

## COMMENT NO. 5-76

**EXHIBIT M**

## RESPONSE NO. 5-76

Exhibit M contains printouts of the search of the Project Site on the Housing Element Site Inventory Map. This comment does not concern any environmental issue or information addressed or contained in the Draft EIR. Therefore, no further response is warranted.

## COMMENT NO. 5-77

**EXHIBIT N**

## RESPONSE NO. 5-77

Exhibit N contains informational articles on the Wildfires in Los Angeles in January 2025.

As discussed in *RESPONSE NO. 5-28*, the Project would have no impact to wildfires. Therefore, no further response is warranted.

## COMMENT NO. 5-78

**EXHIBIT O**

Exhibit O contains comments on the Glendale Unified School District Site Apartment Project from SWAPE.

## RESPONSE NO. 5-78

This comment does not concern any environmental issue or information addressed or contained in the Draft EIR. Therefore, no further response is warranted.

## COMMENT NO. 5-79

### EXHIBIT P

## RESPONSE NO. 5-79

Exhibit P contains a Guide to Off-Road Vehicle and Equipment Regulations from the California Air Resources Board. This comment does not concern any environmental issue or information addressed or contained in the Draft EIR. Therefore, no further response is warranted.

## COMMENT NO. 5-80

### EXHIBIT Q

### RESPONSE NO. 5-80

Exhibit Q contains an email communication between City Staff and Mitchell M. Tsai Law Firm asking for Appendix B, dated December 11, 2024. The City extended the Draft EIR public review for an additional 45-days from January 27, 2025 through March 12, 2025. The City uploaded the Draft EIR and all appendices to the City's website and CEQAnet. All interested parties were notified about the extension of the public review period through a Notice of Time Extension of Public Review and Comment Period.

## COMMENT NO. 5-81

### EXHIBIT R

## RESPONSE NO. 5-81

Exhibit R contains an overview of the Premier Long Beach Virtual Office in Long Beach. This comment does not concern any environmental issue or information addressed or contained in the Draft EIR. Therefore, no further response is warranted.

## COMMENT NO. 5-82

**EXHIBIT S**

## RESPONSE NO. 5-82

Exhibit S contains an email correspondence, dated November 18, 2022 between the City and the Applicant and a Technical Advisory Committee Conditions of Approval issued by the Department of Public Works, Customer Guidelines for New Gas Service Installations from Long Beach Energy Resources, and a notice of a Full Technical Advisory Committee Meeting. Please refer to a discussion of Exhibit S in *RESPONSE NO. 5-10.*

## COMMENT NO. 5-83

**EXHIBIT T**

## RESPONSE NO. 5-83

Exhibit T contains an article from GEO FORWARD, titled, "How Long is a Phase I Environmental Assessment Good For?"

Please refer to *RESPONSE NO. 5-46* for further information about the preparation of the Phase I ESA. No further response is warranted.

## COMMENT NO. 5-84

**EXHIBIT U**

## RESPONSE NO. 5-84

Exhibit U contains information from LACBA's webinar on Real Estate Land Use Conversions – Environmental Consideration.

This comment does not concern any environmental issue or information addressed or contained in the Draft EIR. Therefore, no further response is warranted.

## COMMENT NO. 5-85

**EXHIBIT V**

## RESPONSE NO. 5-85

Exhibit V contains an email correspondence between the City of and the Applicant on October 2022 which states that there is no formal relationship between CSULB and the applicant. The Project would not be affiliated with CSULB. This comment does not concern any environmental issue or information addressed or contained in the Draft EIR. Therefore, no further response is warranted.

## COMMENT NO. 5-86

**EXHIBIT W**

## RESPONSE NO. 5-86

Exhibit W contains an email correspondence between the City and Alejandro Sanchez Lopez and Alexis Oropeza dated, November 3, 2022. Exhibit B discusses AB 2097 and the adaptive use of the Project Site. Please refer to Response to Comment 5-11 for a discussion of Exhibit W.

## LETTER NO. 6

Mitchell M.Tsi
139 South Hudson Avenue, Suite 200
Pasadena, California 91101

Received March 11, 2025

### COMMENT NO. 6-1

On behalf of the Western States Regional Council of Carpenters ("**Western Carpenters**" or "**WSRCC**"), my Office is submitting these *Supplemental* comments on the Draft Environmental Impact Report ("**Draft EIR**") of the Park Tower Student Housing Project ("**Project**") of the City of Long Beach ("**City**"), proposed at 5150 E. Pacific Coast Highway, Long Beach, CA ("**Project Site**").

The Western Carpenters is a labor union representing almost 90,000 union carpenters in 12 states, including California, and has a strong interest in well-ordered land use planning and in addressing the environmental impacts of development projects.

According to the Notice of Availability ("**NOA**") of the Project's Draft EIR:
"The Project will adaptively **reuse** an **existing seven**-story **office** building with **three levels** of subterranean **parking** located at 5150 Pacific Coast Highway in the City of Long Beach (City), California. The existing office building is approximately **120,000 square feet** (sf), of which **109,600 sf** is **currently leased**. The Project would involve the **adaptive reuse** of the existing building into a **private dormitory** (**housing** for **students**) with **149 student** residential **suites** (**593 beds**). The Project is proposing a **General Plan Amendment** from the current **Community Commercial** (CC) **Placetype** to the **Neighborhood Serving Center** (NSC-Moderate) Placetype, which would **permit residential** uses. The Project would also require a **Zoning Code Amendment/Map Change** to change the existing zone **from Community Commercial Automobile Oriented** (CCA) to **Mixed-Use** (MU 3) to allow for the Project's **student** residential uses and to **enable** the Project to take advantage of the adaptive **reuse development** standards. The Project would also require the **approval** of a **Conditional Use Permit** (CUP) to allow the "**Special Group Residence**" and **Site Plan review** of adaptive reuse."
(NOA, emph. added.)

### RESPONSE NO. 6-2

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. This comment provides a summary of the Project. Please refer to the detailed Project information as stated within Chapter 2 Project Description of the Draft EIR. Because the comment does not raise a substantive issue on the content of the Draft EIR, no further response is warranted.

### COMMENT NO. 6-2

The Project's above-mentioned description, as well as state agency comments confirm that the Project may have significant impacts, including transportation, related air quality, greenhouse gas emissions, noise, and hazards impacts on highways and freeways, which need to be addressed.

Hence, it is of utmost importance that the Project be implemented by *skilled contractors* to minimize the construction impacts and hazards to the surrounding environment from the Project.

Individual members of the Western Carpenters live, work, and recreate in the City and surrounding communities and would be directly affected by the Project's environmental impacts.

## RESPONSE NO. 6-2

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. A described in the Draft EIR, the Project would have less than significant impacts related to transportation, air quality, greenhouse gas emissions, noise, and hazards. Because the comment does not raise a substantive issue on the content of the Draft EIR, no further response is warranted.

## COMMENT NO. 6-3

The Western Carpenters expressly reserves the right to supplement these comments at or prior to hearings on the Project, and at any later hearing and proceeding related to this Project. (Gov. Code, § 65009, subd. (b); Pub. Res. Code, § 21177, subd. (a); see *Bakersfield Citizens for Local Control v. Bakersfield* (2004) 124 Cal.App.4th 1184, 1199-1203; see also, *Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal.App.4th 1109, 1121.)

The Western Carpenters incorporates by reference all comments raising issues regarding the Environmental Impact Report (EIR) submitted prior to certification of the EIR for the Project and approval of the Project. See *Citizens for Clean Energy v City of Woodland* (2014) 225 Cal.App.4th 173, 191 (finding that any party who has objected to the project's environmental documentation may assert any issue timely raised by other parties).

Moreover, the Western Carpenters requests that the City **provide advance notice** for any and all notices referring or related to the Project issued under the California Environmental Quality Act (**CEQA**) (Pub. Res. Code, § 21000 *et seq.*), and the California Planning and Zoning Law ("**Planning and Zoning Law**") (Gov. Code, §§ 65000–65010). California Public Resources Code Sections 21092.2, and 21167(f) and California Government Code Section 65092 require agencies to mail such notices to any person who has filed a written request for them with the clerk of the agency's governing body.

## RESPONSE NO. 6-3

This comment is noted for the record and will be provided to decision makers for their review and consideration. Because the comment does not raise a substantive issue on the content of the Draft EIR, no further response is warranted.

## COMMENT NO. 6-4

**I. THE CITY'S EXTENSION OF THE COMMENT PERIOD AS REQUESTED BY WSRCC IS MUCH APPRECIATED**

As an initial matter, WSRCC appreciates the City's extending of the comment period to comply with CEQA, as previously requested by the Western Carpenters on January 23, 2025. This extension provided us – and we believe others as well – an opportunity to have a meaningful review of the EIR and all of its later uploaded studies and materials supporting the EIR and to provide an informed and meaningful input.

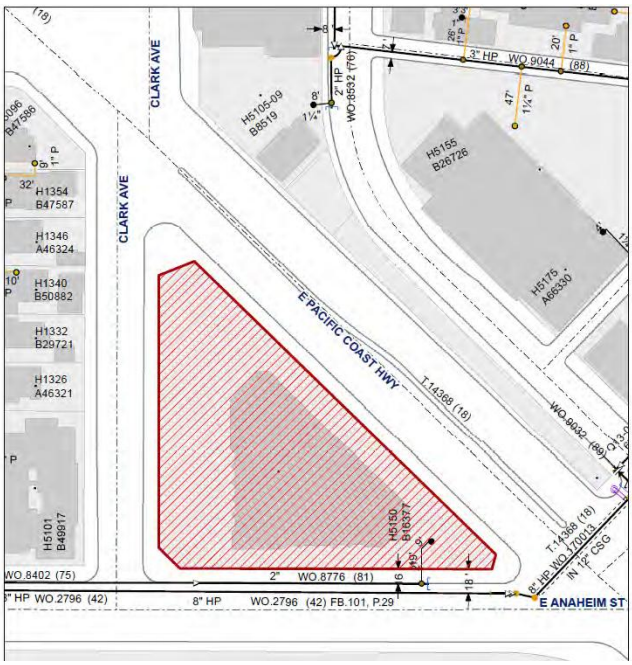
## RESPONSE NO. 6-4

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. This comment acknowledges the City's extension of the public review and comment period. Because the comment does not raise a substantive issue on the content of the Draft EIR, no further response is warranted.

## COMMENT NO. 6-5

### II. THE DEIR FAILS TO CONSIDER THE AIR QUALITY AND HUMAN HEALTH AND SAFETY IMPACTS OF THE PROJECT IN LIGHT OF ITS PROXIMITY TO PACIFIC COAST HIGHWAY

The Project is located next to the Pacific Coast Highway and it is also bordered by other streets, as shown below:




According to the California Environmental Agency's Air Resources Board ("CARB")'s Technical Advisory:

> **Street**, **highway**, and **freeway ramp intersections** have been found to be **pollution hot spots**. This is mainly due to frequent deceleration and acceleration and the increased frequency and duration of idling at intersections. As a result, intersection

> **alternatives** that **reduce** the **frequency** of **stops**, **acceleration**, and **idling** can generally **benefit air quality** at and around intersections.

(**Exhibit 1,** p. 20, emph. added [CARB's Technical Advisory re "Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways"].)[1]

CARB's Technical Advisory further reminds and provides its related findings and recommendations from 2005 on impacts of siting residential structures within 500 feet of freeways, urban roads, or rural roads, as follows:

> The 2005 Land Use Handbook recommends that health protective distances (**500 feet at minimum**, if there is no site-specific information available) be implemented to **separate sensitive** uses from **freeways**, **urban roads** with **100,000 vehicles/day**, or **rural roads** with **50,000** vehicles/day.*19 This recommendation is based on research showing that pollutant concentrations decline significantly as you move farther away from pollution sources, including freeways and **other busy traffic corridors** [13-15] and epidemiological studies that indicate that **spending time** in **proximity** to **traffic emissions sources** may lead to **adverse health** effects **beyond** those associated with **regional air** pollution in **urban areas** [16-21].

(**Exhibit 1**, p. 12, emph. added.)

And CARB's Technical Advisory informs of *additional* research that has occurred since 2005 and found that the previously suggested 500 feet buffer was understated and needs to increase to 1,000 feet to duly protect people. (**Exhibit 1,** pp. 12-14.) As part of the new findings and recommendations, therefore, CARB suggests other means to address the air pollution issues and reduce impacts on human beings, as follows:

These recent studies highlight the importance of protecting at-risk populations/communities from traffic emissions and indicate that **exposure reduction strategies** may be needed to protect people that live and spend time in environments that are more than 500 feet from high volume roadways. This does not mean that nothing .**developed within this distance**. In fact, as previously discussed, a compact development pattern is a key strategy in reducing **GHG** emissions and improving **public health** through physical activity and it has many other benefits. Instead, **planners** and **developers** may want to consider **siting non-sensitive uses** and **developments** that will be **primarily used** and **occupied** during the **daytime**—such as **commercial uses** and **offices**. In addition to optimizing land use when near-roadway pollution concentrations drop off more sharply with distance, **commercial** and **office buildings** are often equipped with **indoor filtration systems** that can remove particulates from the air inhaled by building occupants, and these buildings are more likely to have **permanently closed** or **sealed windows**. This means that, when these buildings are sited close to roads, people that spend time in them are less likely to breathe harmful pollutants and experience negative health impacts. Plus, people typically spend less time at work than at home, meaning that the duration of exposure at work is shorter. These approaches, along with strategies to reduce traffic emissions, disperse pollution and clean indoor air—all discussed in this Technical Advisory—will reduce exposure.

(**Exhibit 1,** p. 14, emph. added.)

CARB's advisory is precisely on point here. The Project here borders Pacific Coast Highway, which statistically sees on average 100,000 cars in the City of Long Beach, CA. (**Exhibit 4** [7th & PCH intersection; 2nd & PCH intersection].)

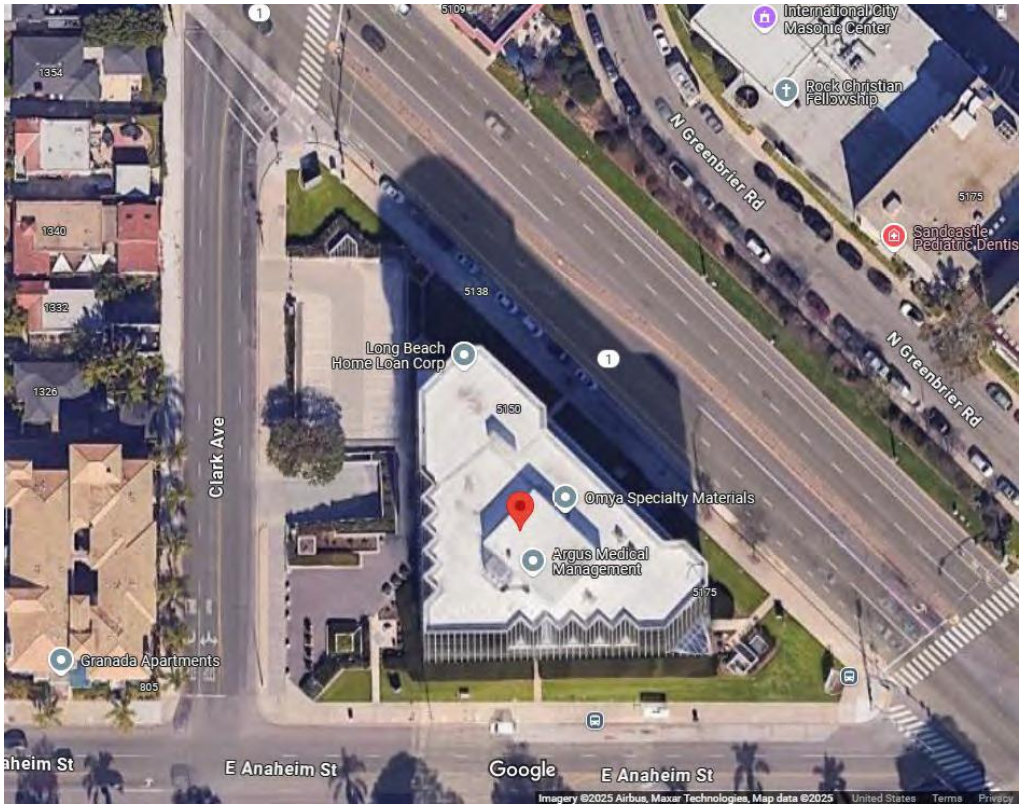
Further, the Project site is currently occupied by *commercial* uses where people do not live but attend for business purposes during the day and for short periods of time. (DEIR, p. 6-8.) In contrast, the Project proposes to bring 593 students who will reside at the Project site during school year.

Moreover, the Project proposes a pool (#10), outdoor daybeds (#12), and other outdoor amenities (as #11) that are directly adjacent to the Pacific Coast Highway, as shown in the screenshot of the Project's conceptual plan from the DEIR below:




(DEIR, p. 2-16.)

In contrast, the Project Site's Google bird view image shows *no outdoor* amenities at the Project site, including adjacent to the Pacific Coast Highway, as shown below:




As such, the Project Site's present commercial uses are compatible with CARB's guidance whereas its proposed residential uses will continuously expose the Project's own occupants to air quality pollution, especially near the Pacific Coast Highway.

Moreover, since the Project will significantly increase the amount of traffic in the area and on the Pacific Coast Highway by bringing about 593 cars of students and more cars from employees, as well as by suggesting that students may use bicycles which may further slow down the traffic and cause car idling on the Pacific Coast Highway for various safety reasons, the Project will necessarily increase air pollution impacts not only for the Project's own occupants, but also for people residing within 500 to 1000 feet of the Pacific Coast Highway. Per the DEIR, there are sensitive residential uses within as close as 55-290 feet of the Project and hence Pacific Coast Highway:

**Table 4.10-7: Sensitive Receptors**

| Receptor Description | Distance[1] and Direction from the Property Line of Project Site |
|---|---|
| Multi-Family Residential Dwellings | 55 feet to the west |
| Single-Family Residential Dwellings | 55 feet to the west |
| Rock Christian Fellowship | 175 feet to the east |
| Cambrian Homecare | 290 feet to the east |

1. Distances are measured from the Project Site boundary to the property line.
Source: Google Earth, 2024

(DEIR, p. 4.10-13.)

Further, the noted impacts will be even more severe and serious in light of the fact that the sensitive receptors and the Project's own occupants represent the *most vulnerable* population groups – students, children, elderlies and people with various diseases. (**Exhibit 1,** p. 2.) As CARB's Technical Report mentions:

> **Need for this Technical Advisory**
>
> The primary public health concern regarding roadways near existing and future developments is the possibility that at-risk populations/communities—like **children**, **pregnant** women, the **elderly**, and those with **serious health** problems affected by air pollution—will be exposed to traffic emissions. In California, there are several instances of **schools** and **other sensitive** locations such as **daycare** facilities located near **major roadways**, particularly in non-white and economically disadvantaged neighborhoods [6, 7]. Studies show that these populations can experience serious health impacts, including worsening of asthma and cardiovascular disease and adverse birth outcomes because of exposure to traffic-related air pollution. Additionally, studies show that poor and minority communities are more likely to live near busy roadways, and therefore may be more at-risk for the health effects related to exposure to traffic emissions [8, 9].

(**Exhibit 1,** p. 3, emph. added.)

Footnote 1: Also available at: https://ww2.arb.ca.gov/sites/default/files/2017-10/rd_technical_advisory_final.pdf

## RESPONSE NO. 6-5

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The comment states that the Project fails to consider impacts to air quality and human health in proximity to the Pacific Coast Highway. As described within Section 4.2 Air Quality of the Draft EIR, the Project would have less than significant impacts related to air quality. As described on page 4.2-16 within Section 4.2 Air Quality, of the Draft EIR, the Project would not expose sensitive receptors as construction-related and operational emissions would not exceed SCAQMD thresholds, thus impacts would be less than significant. Furthermore, as described on page 4.2-16, the SCAQMD methodology states that off-site mobile emissions from the Project should not be included in the emissions compared to Localized Significance Thresholds (LST). Project-related emissions would not exceed the regional thresholds or the LSTs, and therefore would not exceed the ambient air quality standards or cause an increase in the frequency or severity of existing violations of air quality standards. Therefore, sensitive receptors would not be exposed to criteria pollutant levels more than the health-based ambient air quality standard. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

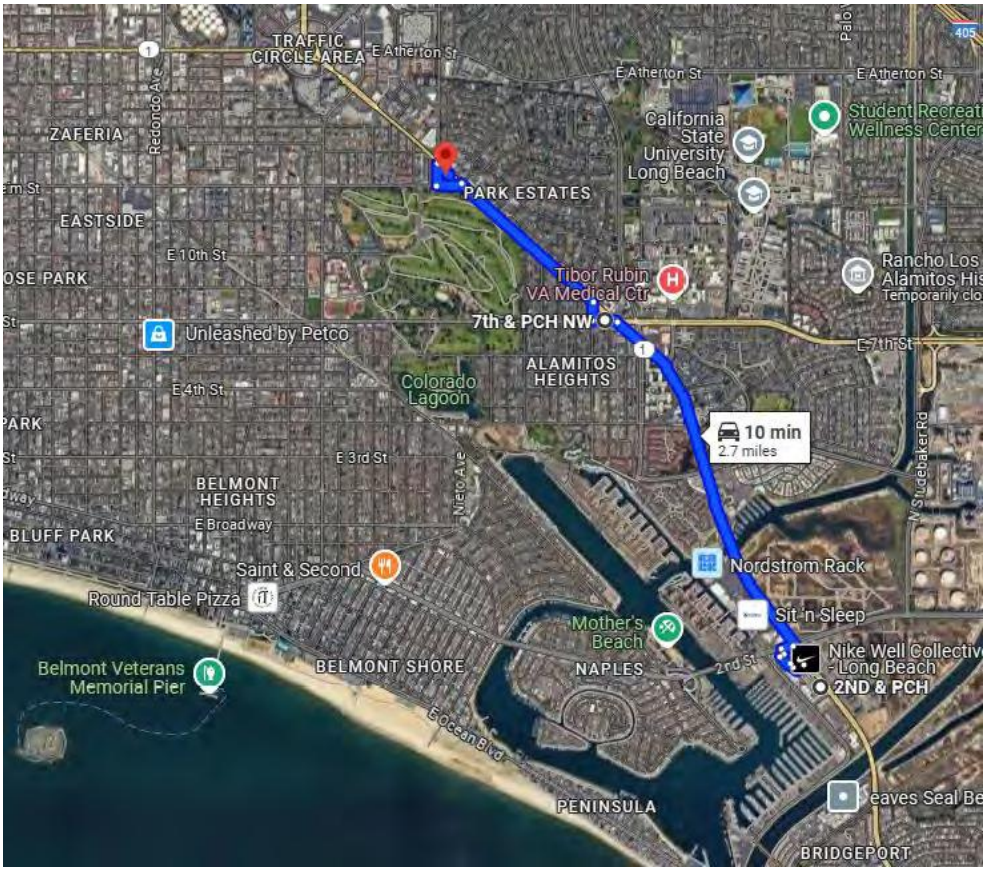
## COMMENT NO.6-6

Notably, the DEIR's reliance on bicycles or other alternative transportation means is misplaced as it fails to consider that the Project's occupants and others will be *more severely* exposed to the air pollution impacts of the busy Pacific Coast Highway when walking or riding near the Project. These air pollution impacts are *in addition to* the risk of fatalities in Long Beach, which does not appear to be declining and which will reasonably foreseeably deter public reliance on alternative transportation means as compared with the use of cars. (**Exhibit 3** [Articles re Pedestrian Fatalities in Long Beach on PCH, one of the Long Beach's deadliest streets].)

Compounding the risk of traffic-related air quality, GHG, and health and safety risks of the Project is statistical data that the number of cars that travel on Pacific Coast Highway in Long Beach, California varies by location, with some areas seeing over 100,000 cars per day. (See Exhibit 4

[Intersection of 7th and PCH is at 142,000 cars (close to the State University where the students would be traveling from to the Project Site); Intersection of the 2nd and PCH is at about 100,000 cars per day].)

The Project Site is close to the 7th and PCH, as shown in the Google map below, with the Project site marked with a red bubble:




The fact that the Pacific Coast Highway has on average 100,000 cars per day in the City of Long Beach squarely mandates the City planners and elected decisionmakers to disapprove the Project in light of the CARB's guidance to *not* site residential projects near high-volume roadways, i.e., urban roads with 100,000 cars per day, such as the Pacific Coast Highway. (Cal. Pub. Res. Code § 21151.8; **Exhibit 1,** p. 2).

The above-noted reasons and evidence show that bringing a 593-bed student housing at the Project site within 500 feet of a Pacific Coast Highway – which has on average 100,000 cars per day in the City of Long Beach, CA and which traffic load will significantly increase by the Project's more intensive residential uses by students driving to/from the State University on a daily basis as well as to other shopping areas that are not closely located – will have significant air quality impacts and significantly increase health and safety impacts on both the Project's own occupants and nearby residents and sensitive receptors.

For these reasons, the DEIR's air quality analysis is inaccurate as it fails to accurately disclose and fully account for the Project's impacts on air quality and human beings by siting a student housing residential Project next to the Pacific Coast Highway.

## RESPONSE NO. 6-6

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. Contrary to the commenter's assertion, the Project is not required to prepare a Health Risk Assessment (HRA), as such an assessment was not necessary or appropriate under the applicable circumstances.

The City relies on methodology established by SCAQMD for preparation of CEQA air quality analyses. SCAQMD shares responsibility with the California Air Resources Board (CARB) for ensuring that all state and federal ambient air quality standards are achieved and maintained throughout all of Los Angeles County. Although SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with new development projects within the Air Basin, such as the Project. Instead, SCAQMD published the CEQA Air Quality Handbook in November 1993 to assist lead agencies, as well as consultants, project proponents, and other interested parties, in evaluating potential air quality impacts of projects proposed in the Air Basin. The CEQA Air Quality Handbook provides standards, methodologies, and procedures for conducting air quality analyses and was used extensively in the preparation of the air quality analysis for this report.

The SCAQMD is the Air District in charge of implementing, regulating, and enforcing the Hot Spots Program in the South Coast Air Basin. The SCAQMD has promulgated rules in furtherance of the Hot Spots Act,[1] and prepared supplemental guidelines for preparing HRAs as a supplement to OEHHA's guidance manuals.[2] These SCAQMD rules and supplemental guidelines provide guidance for the preparation of HRAs for stationary and certain mobile sources.[3] While these rules and guidelines indicate HRAs should be prepared for certain industrial projects, they do not require HRAs to be prepared as part of CEQA documents that evaluate the construction and operational impacts of residential and/or commercial projects, like the proposed residential and commercial Project.[4]

SCAQMD published and adopted the *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*, which provides recommendations regarding the siting of new sensitive land uses near potential sources of air toxic emissions (e.g., freeways, distribution centers, rail yards, ports, refineries, chrome plating facilities, dry cleaners, and gasoline dispensing facilities.[5] SCAQMD recommends that HRAs be conducted for substantial sources of DPM (e.g., truck stops and warehouse distribution facilities that generate more than 100 trucks per day or more than 40 trucks with operating transport refrigeration units). The proposed Project does not include any of the listed uses. As discussed on page 4.10-19 within Section 4.10, Noise of the Draft EIR: "According to Citywide Traffic Flow maps, the roadways in the project area have between 10,000 and 26,300 daily trips." Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

[1] See SCAQMD Rules and Regulations XIV – Toxics and Other Non-Criteria Pollutants, Rules 1401 and 1402.
[2] SCAQMD, *AB 2588 and Rule 1402 Supplemental Guidelines for Preparing Risk Assessment for the Air Toxics "Hot Spots" Information and Assessment Act,* September 2024, Available at: https://www.aqmd.gov/docs/default-source/planning/risk-assessment/forms-and-guidelines/ab-2588-supplemental-guidelines-2024.pdf?sfvrsn=6 (accessed June 2025).
[3] SCAQMD, Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis, August 2003.
[4] SCAQMD Final EA, pages 1-2 and 2-23, September 2016. Affected facilities are those in identified for the AB 2588 Air Toxics Hot Spots program, which does not include the proposed Project nor mixed-use projects like the proposed Project that are not stationary sources. Further, the SCAQMD states it "does not have guidance on construction Health Risk Assessments."
[5] SCAQMD, *Guidance Document for Addressing Air Quality Issues in General Plan and Local Planning,* May 6, 2005.

## COMMENT NO. 6-7

### III. THE DEIR UNDERSTATES THE PROJECT'S AESTHETIC IMPACTS, INCLUDING ON THE ELIGIBLE SCENIC HIGHWAY

Another reason the DEIR is inaccurate and incomplete to be certified is because it provides a misleading analysis on the Project's impacts on Scenic Highways. To wit, the DEIR concludes that the Project will have no impacts on the scenic highways only because the Pacific Coast Highway is not yet "designated" as a scenic highway by Caltrans and the "nearest eligible" scenic highway is *18.04 miles* away:

> **AES-2 Would the Project substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a State Scenic Highway?**
>
> **No Impact.** The Project Site faces Pacific Coast Highway to the north and east. Pacific Coast Highway is currently **not designated** as a scenic highway by **Caltrans**.4 However, according to the Urban Design Element, the **entire stretch** of the Pacific Coast Highway will become a scenic highway by **2030**.5 The **nearest eligible** State Scenic Highway is a segment of California State Route 91 that is located **approximately 18.04** miles east of the Project Site.6 As discussed above, the Project involves the adaptive reuse of the existing office building into *new* student *housing* and *minor changes* to the building *façade* would not substantially add to the existing building's massing or scale, nor would increase the building's height. Accordingly, the Project would have no impact on scenic resources within a State Scenic Highway.

(DEIR, p. 6-8, emph. added.)

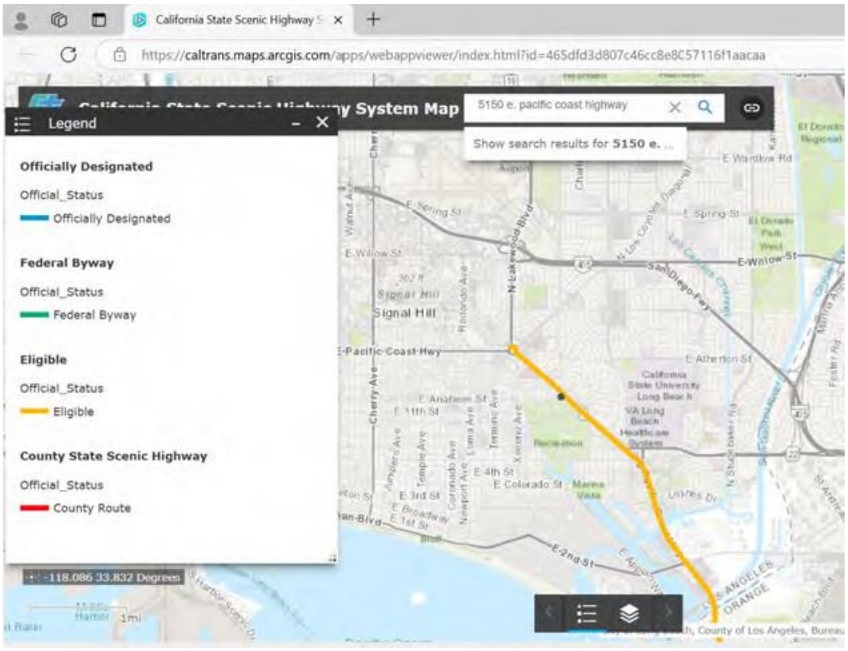
The analysis is inaccurate. First, CEQA Guidelines, Appendix G does not ask to evaluate the Project's impacts on scenic highways that are "designated" by "Caltrans"; it simply asks "would the Project:

a) Have a substantial adverse effect on a scenic vista?
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?"

(CEQA Guidelines, Appendix G, Section I [Aesthetics].)

As such, the EIR's reliance on Caltrans designation for purposes of answering the question on impacts is misplaced.

Second, the nearest eligible Scenic Highway is not 18.04 miles away but within a few feet from the Project Site. The *link* the DEIR provides in support of its statement that Caltrans has not designated it shows that the Pacific Coast Highway – especially in the portion adjacent to the Project site – is marked in yellow, signifying that it is "eligible" as a scenic highway, as shown in the screenshot below (the black dot marking the Project site and the orange line indicating the Pacific Coast Highway):




Caltrans' web page further explains the difference between an *eligible* and a *designated* scenic highway, suggesting that *designation* is just a matter of procedure that needs to take place after the highway's *eligibility* is confirmed:

> *What is the difference between an "eligible" and an "officially designated" scenic highway?*
>
> An eligible State highway becomes officially designated through a process in which the local governing body applies to Caltrans for scenic highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a State Scenic Highway by the Caltrans Director.

(**Exhibit 2** [Caltrans Official Page printout].)

As such, the fact that the Pacific Scenic Highway is not yet designated by Caltrans should be of no significance where it is clear that the highway *is* deemed eligible for such designation.

Third, the DEIR appears to suggest that, because the Project is only about *adaptive reuse,* then it may not have any impact on the scenic highway. It provides:

> As discussed above, the Project involves the adaptive reuse of the existing office building into new student housing and minor changes to the building façade would not substantially add to the existing building's massing or scale, nor would increase the building's height. Accordingly, the Project would have no impact on scenic resources within a State Scenic Highway.

(DEIR, p. 6-8.)

However, the Project – along with its road improvements, utility upsizing and undergrounding, as well as encroachment into the highway described in our prior comment letter – may significantly damage the trees and rock outcroppings. The Project's intensive 24-hour residential uses may also indirectly substantially damage the trees and outcroppings of the Pacific Coast Highway by bringing more traffic into the Project area and leading to the deterioration of the nearby streets and adjacent trees and scenic vista.

Moreover, the DEIR summarily mentions about "minor" changes to the "façade" of the building without explaining what those changes are and why those are deemed minor.

As such, the Project may have significant impacts on the eligible State Scenic Highway and also detract from its scenic views and significance, requiring adequate mitigation measures, contrary to the EIR's findings. For this reason too the EIR is incomplete and inaccurate and cannot be certified.

## RESPONSE NO. 6-7

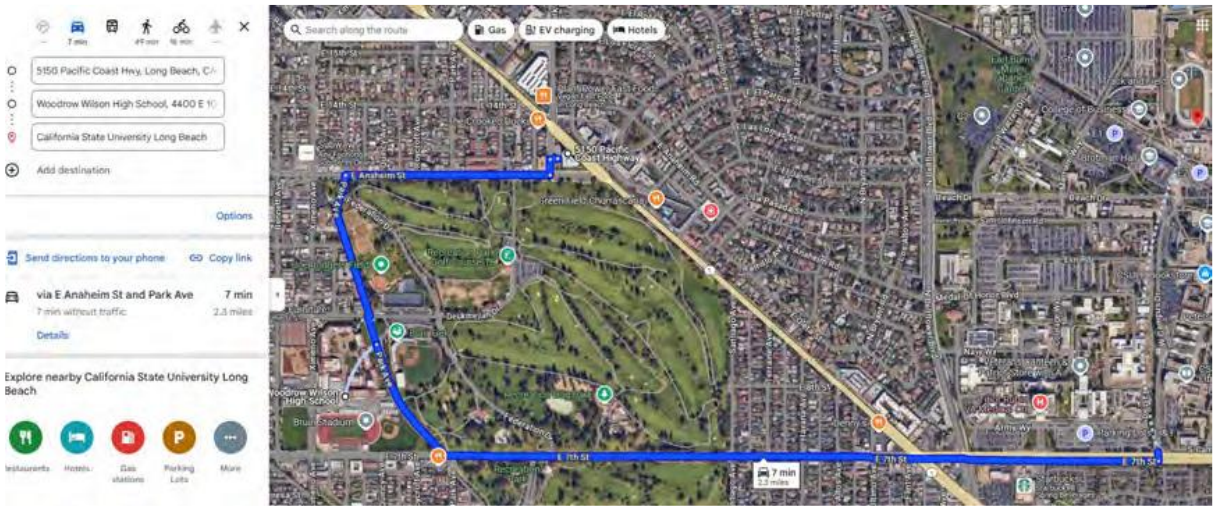
This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The Project site is triangularly shaped, and its northeastern side faces the Pacific Coast Highway. While the Pacific Coast Highway is not currently designated as a scenic highway, according to the Urban Design Element of the City's General Plan, the entire stretch of the Pacific Coast Highway will become a scenic highway by 2030. Therefore, as noted by the commentor, it is an Eligible State Scenic Highway. Therefore, the Pacific Coast Highway would be the closest eligible State Scenic Highway rather than California State Route 91 as stated in the impact discussion under AES-2 in Chapter 6, Other CEQA Considerations, of the Draft EIR. This has been revised in Chapter 3, Corrections and Additions, of this Final EIR. This change clarifies the location of the closest eligible State Scenic Highway, further clarifying the analysis. This revision would not be considered significant new information and does not affect the findings and conclusions made in the Draft EIR. As discussed on page 6-8 in Chapter 6, Other CEQA Considerations, of the Draft EIR, the Project would involve the adaptive reuse of an existing building; therefore, there would only be minor changes to the façade of the building and would not substantially add to the existing building's massing or scale, nor would increase the building's height. Therefore, there would be no impacts to scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a State Scenic Highway.

## COMMENT NO.6-8

### IV. THE DEIR'S TRAFFIC IMPACT ANALYSIS IS BASED ON FLAWED AND INCORRECT ASSUMPTIONS AND IS ALSO INADEQUATE

As we have previously noted in our January 23, 2025 letter, the EIR provided no assurance that the California State University, Long Beach ("CSULB") Beachside Shuttle Service could be used or relied upon to transport students from/to the Project site. This concern is further validated by the comment from CSULB, as well as cease and desist letters to the Project Applicant, showing that the Project is not affiliated with CSULB in any way, shape or form, and that the CSULB Beachside Shuttle cannot be relied upon for the Project's transit use. (**Exhibit 5** [CSULB comments and others' emails re CSULB shuttle service and traffic impacts of the Project].) As such, the EIR's traffic impact analysis is fatally flawed as it relies, in part, on the "potential" and yet illusory and erroneous assumptions to support its finding of no traffic impacts.

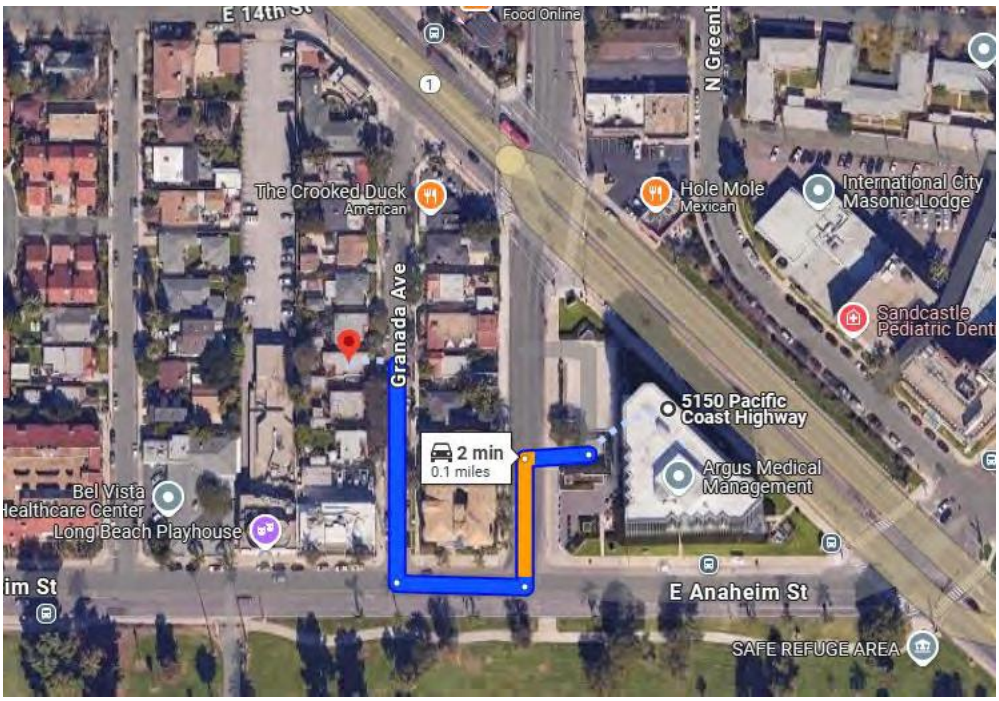
The noted traffic impacts are also critical and necessary to thoroughly account in light of the nearby schools, as pointed out by the School District's comment. (**Exhibit 6** [School district comment].) Based on the Draft EIR, the closest school is the Woodrow Wilson School at 4400 E. 10th Street, Long Beach, located southwest of the Project. (DEIR, pp. 5-12—5-13.) While the school is located 0.45 miles away (as reported by the EIR), Google map image of locations of the Project Site and the




CSULB shows that the School is on the way and on the street the Project's occupants may use to reach the University, as shown in the screenshot below:

As such, the EIR's traffic studies should duly account for the Project's impacts on the nearby school students, school hours and school zones.

Moreover, based on public comments and *personal observations* of residents in the Project's vicinity, the Project's vicinity is already suffering from high traffic congestion and parking issues, and adding potentially 593 students in the Project site will necessarily increase traffic congestion and parking shortage. (**Exhibit 7** [Resident's comment on traffic].) The commenter's address (1331 Granada Avenue Long Beach, CA 90804) shows the commenter is in the immediate vicinity of the Project at 5150 E. Pacific Coast Highway, Long Beach, as shown in the Google map screenshot below:



Residents' personal observations of traffic conditions in the Project area amount to substantial evidence of traffic impacts due to the Project's exacerbation of impacts.

As the commenter noted, there is already a congestion on Clark street and there would be a need to add a "No Left Turn" sign to eliminate the bottlenecks that would further exacerbate with the Project. Similarly, as the commenter suggested, there is no sufficient parking for even *permitted* parking on the street and the Project should make sure that students cannot get permits to park on the streets.

For all the above-noted reasons, the Project will have significant traffic impacts and requires both an accurate disclosure and mitigation thereof in the EIR, including recirculation of the EIR to correct both the Project description, its baseline assumptions, and its analyses of traffic impacts.

## RESPONSE NO. 6-8

The comment is noted for the record and will be forwarded to decision-makers for their review and consideration. The Project would not be affiliated with CSULB. As indicated in Chapter 3 Corrections and Additions of this Final EIR, the Project would not be affiliated with the CSULB Beachside Shuttle. Furthermore, the applicant would include a "potential" shuttle that would serve residents at the Project Site.

As described on page 4.12-10 within Section 4.12 Transportation of the Draft EIR, there would be less than significant impacts related to traffic. As discussed on page 4.12-10 of the Draft EIR, the City of Long Beach Traffic Impact Analysis Guidelines states that a traffic impact study is generally required "for any project in Long Beach that is expected to generate 500 or more net new daily trips." Based on the City's traffic study guidelines, a traffic study would be needed if the project generates more than 500 net daily trips. However, as shown in Table 4.12-2 of the Draft EIR the Project would generate less than 50 total net new peak hour trips (the City's threshold to analyze LOS at intersections). Exhibit 6, includes a comment letter in response to the Notice of Preparation from David Miranda, Executive Director of the Long Beach Unified School District, which recommends that the City perform a traffic study. However, as the City only requires a traffic study to be conducted if a project generates more than 500 net daily trips. Therefore, a traffic impact study is not required for the Project and no mitigation would be required. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 6-9

### V. THE DEIR'S RECREATION AND PUBLIC SERVICES IMPACT ANALSES ARE BASED ON FLAWED ASSUMPTIONS

As also pointed out by CSULB, the EIR improperly relies on the University's own park and library to conclude that the Project's impacts on public services and park/recreation will be less than significant. (**Exhibit 5.**) However, since the Project is not affiliated with the CSULB, such assumption is flawed. Hence, the Project may have – and should mitigate – impacts on public services, libraries, parks, and recreation.

The Draft EIR, therefore, should be revised and recirculated to address these impacts.

## RESPONSE NO. 6-9

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. This assumption was revised on page 6-19 within Chapter 6 Other CEQA Considerations of the Draft EIR. As described on page 6-19, of the Draft EIR, students residing on the Project Site would primarily utilize the amenities on-site. As discussed on page 6-19 within Chapter 6 Other CEQA Considerations of the Draft EIR, the City of Long Beach operates twelve libraries throughout the City. The closest library to the Project Site is the Brewitt Neighborhood Library, located approximately 0.6-mile to the west of the Project Site. Students would be able to access City libraries and use libraries at their respective institutions. Additionally, the Project would be required to comply with LBMC Section 18.18.180, Park Fee, which requires that all residents and nonresidential development projects pay a proportionate share of costs of providing park land and recreational improvements necessary to meet the needs created by such development. Therefore, impacts related to parks would be less than significant. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 6-10

### VI. THE DEIR FAILS TO DULY ACCOUNT FOR THE PROJECT'S BIOLOGICAL AND ENERGY IMPACTS.

As further pointed out by Sierra Club, the Draft EIR fails to account for the Project's potential significant impacts on biological resources and also energy impacts, in light of the fact that the Project site's building is all glass and will be lit up during night hours.

First, while bird mortality may not have been a problem with the Project site's less intensive *commercial* uses (dark at nights), bird mortality may become a significant impact to biological resources especially on nocturnal migratory birds, which are attracted to the light and do not see the glass. (**Exhibit 8** [Duke University Research and Supporting Scientific Evidence].) Thus, per Duke University student research:

> Every year, up to **one billion** birds die from hitting windows. Windows kill more birds than almost any other cause of human-related bird mortality, second only to feral and domestic cats. Both the transparency and reflectiveness of glass can confuse flying birds. They either don't see the glass at all and try to fly through it, or they're fooled by reflections of safe habitat or open sky. And **at night,** birds may be disoriented by **lit-up buildings** and end **uphitting windows** by mistake. In all cases, the result is usually the same. The majority of window collision victims die on impact. Even the survivors may die soon after from internal bleeding, concussions, broken bones, or other injuries.
>
> (**Exhibit 8,** pp. 1-2, emph. added.)

As ways to reduce such bird mortality, researchers propose various techniques, such as etching, fritting, frosting the windows, using window decals, or even *"lights out"* initiative, i.e., keeping all non-essential lights off:

> Lights Out initiatives are gaining ground in U.S. cities including Dallas, Houston, Philadelphia, and New York. The all-night glow of office buildings and

> streetlights in cities is especially dangerous for drawing migrating birds off course, delaying their migrations and making them vulnerable to window collisions.
>
> Turning off nonessential lights and installing downward-facing lighting are relatively simple ways to reduce the problem of artificial light at night. It's still wise to take precautions against window collisions using any of the above methods, especially for homeowners.
>
> (**Exhibit 8.**)

While the "all lights out" initiative *may* arguably work for an office building occupied with *office* uses that are typically dark at nights, it cannot be necessarily accomplished with the Project's proposed *residential* uses.

Similarly, the Project's glass building and its proposed *residential* use will have more *energy impacts.* Notably:

> Flat glass, commonly used in skyscrapers, has its disadvantages. It easily transfers heat from the inside to the outside because it conducts heat quickly. This can lead to higher energy consumption for heating and cooling. Also, its high light transmittance can result in too much sunlight inside and temperature swings.

(**Exhibit 9** [Articles re Glass Buildings and Energy Efficiency Issues].) As The Guardian noted:

> The gas use for heating was about 40% more for tall buildings, and the total carbon emissions from these buildings was twice as high.
>
> Glass skyscrapers are the worst offenders. Large windows may provide magnificent views but they leak heat in cold weather; even triple glazed windows lose far more heat than a well-insulated brick wall.
>
> In hot weather, glass windows turn building interiors into ovens, and temperatures rise even further with the heat from people and computers in an office.

(**Exhibit 9.**)

And again, while the Project site already had energy efficiency impacts due to its glass

building, those energy impact will be much more severe in light of the proposed residential uses and the need to adjust the room temperature in the building not only during the office hours but also at nights.

The Draft EIR must account for the noted increased energy impacts and provide adequate mitigation measures and changes in the building, including modern air conditioning systems to ensure that the Project mitigates such energy impacts.

In sum, the Draft EIR fails to duly account for the Project's biological and energy impacts due to the all-glass construction and the proposed change of use from commercial to residential and should be recirculated to make adequate disclosures and provide mitigation for such reasonably foreseeable impacts.

## RESPONSE NO. 6-10

The comment is noted and will be forwarded to decision-makers for their review and consideration. Please refer to *RESPONSE NO. 4-3*. As discussed in that response, the operation of the Project would not pose a significant threat to any special-status species protected under CEQA. As an adaptive reuse, the exterior of the building would not change significantly. Additionally, as discussed in Section 4.4, Energy, of the Draft EIR where energy is evaluated for the Project. As discussed in that section, impacts related to energy are less than significant. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 6-11

### VII. THE PROJECT MAY HAVE NOISE IMPACTS FROM THE NEARBY AIRPORT

The Draft EIR Provides:

> As discussed in Section 4.7, Hazards and Hazardous Materials, of this Draft EIR, the nearest airport to the Project Site is the Long Beach Municipal Airport, located 1.60 miles to the north of the Project Site. Nevertheless, as explained in Section 4.10, Noise of the Draft EIR, review of the Project's **Airport Influence Area (AIA) map** indicates that the Project is located outside the AIA boundaries. Additionally, there are no other airports or airstrips within 2.0 miles of the Project Site.
>
> As such, **although** the Project is located **within two miles** of a **public** airport, the Project would not result in a safety hazard or **excessive noise** for people residing or working in the Project area.

(DEIR, p. 5-13, emph. added.)

CEQA Guidelines Appendix G, Noise Section requires to inquire whether:

> e) For a project located within an **airport land use** plan or, where such a plan has **not been** adopted, **within two miles** of a **public airport** or public use airport, would the project **expose** people **residing** or **working** in the project area to **excessive noise** levels?
> f) For a project within the **vicinity** of a **private** airstrip, would the project expose people **residing** or **working** in the project area to **excessive noise** levels?

(Emph. added.)

As such, while the Draft EIR *admits* that the Project *is* within 2 miles of a public airport, it concludes that, since the Project area is not included in the Airport Influence Area Plan, the Project will not have significant noise impacts on the Project occupants. This conclusion is unsupported. Specifically, the CEQA inquiry provides a 2-mile distance for projects *not included* in the airport land use plan. Also, the Draft EIR does not explain whether the Airport Influence Area map is co-terminous with the airport land use plan. Instead, the Draft EIR conflates the AIA with the airport land use plan and based solely on the fact that the Project is not included in the AIA map, it will necessarily not expose students to excessive noises. There is also no evidence that the AIA map conclusively shows or was designed to conclusively show that projects outside of the AIA map area will have no excessive noise.

To wit:

> State law requires sellers of real property to disclose "any fact materially affecting the value and desirability of the property". Assembly Bill 2776, which went into effect January 1, 2004, requires such disclosure when the property is *either* within two miles of an airport *or* if it is within an "airport influence area." The disclosure notice must state that the property may be subject to noise, vibration, odors or other annoyances or inconveniences "associated with proximity to airport operations." This law defines the "airport influence area" as the area where airport-related factors "may significantly affect land uses or necessitate restrictions on those uses as determined by an airport land use commission." The California Public Utilities Code establishes airport land use commissions in every county to provide for the orderly development of air transportation and ensure compatible land uses around airports which are open to public use. According to the State Division of Aeronautics, the "airport influence area" is usually the planning area designated by an airport land use commission for each airport.

(**Exhibit 10** [Information on AIA from the County of LA].)

The above-quoted passage confirms that the 2-mile distance is not co-terminous [SIC] with the AIA influence map but is an *alternative* way to check if the Project may have excessive noise impacts, in *addition* to the project being included in the AIA area.

Also, notably, the Project proposes *residential* uses and also *outdoor* uses, whereas the Project's occupants will be students who need to concentrate on studies and may be significantly impacted by airplane noise, including through the night.

Second, the EIR appears to use the 2-mile distance also to the private airstrip, whereas CEQA Appendix G does not have such distance limitation and only asks about any private airstrip in the Project's vicinity.

The noted noise impacts may be even more severe in light of the fact that the Project building is *all glass* and arguably has no proper noise insulation necessary for the proposed residential uses.

For these reasons, the Project may expose its student residents to excessive noise impacts but improperly discounts those impacts relying on legally erroneous interpretations of CEQA requirements. The Draft EIR should be revised to duly account for the Project's noise impacts in light of the nearby municipal airport and the Project's glass building, in light of the proposed change of use from commercial to residential student dormitory.

## RESPONSE NO. 6-11

As stated on page 4.10-20 within Section 10 Noise of the Draft EIR, the closest airport to the Project Site is located roughly 1.6 miles north of the Project Site. There are no other airports or airstrips within 2.0 miles of the Project Site. Review of the Long Beach Airport's Influence Area Map indicates that the Project Site is outside of the Airport Influence Area (AIA) boundaries. Therefore, as indicated in Exhibit 10, as discussed in Comment No.6-11, the Project would properly disclose its proximity to an airport and that it is not located within AIA boundaries.

Furthermore, according to the Los Angeles County Airport Land Use Plan, the Project Site is not located within the Long Beach Airport influence area.[6] As such, the Project Site would not expose workers in the Project area to excessive noise levels from airport operations. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 6-12

**VIII. CONCLUSION**

In view of the above-noted concerns and those raised in our January 23, 2025 comment letter, we respectfully request that the EIR be recirculated to correct and include the omitted information and to provide meaningful analysis, identification, and mitigation of impacts as CEQA requires. We also request that a Phase II ESA be conducted to resolve and investigate issues that Phase I skipped or understated, including but not limited to soil sampling, methane testing, and asbestos and other hazards evaluation of the Project site. "CEQA contemplates *serious* and not superficial or pro forma consideration of the potential environmental consequences of a project." (*Leonoff v. Monterey County Bd. of Supervisors* (1990) 222 Cal.App.3d 1337, 1347, 272 Cal.Rptr. 372; emphasis added*; Burbank-Glendale-Pasadena Airport Authority v. Hensler* (1991) 233 Cal.App.3d 577, 593, fn. 3.)

If the City has any questions or concerns, please feel free to contact my Office.

## RESPONSE NO. 6-12

This comment is noted for the record and will be forwarded to decision-makers for their review and consideration. This comment requests that the City extend the comment period of the Draft EIR and that a Phase II be performed to analyze potential hazards at the Project Site.

The City extended the Draft EIR public review for an additional 45-days from January 27, 2025 through March 12, 2025. The City uploaded the Draft EIR and all appendices to the City's website and the Governor's Office of Land Use and Innovation State Clearinghouse portal on January 23, 2025. Additionally, the City notified the Long Beach Press Telegram, which published the Notice of Availability, and filed the Notice of Availability at the Los Angeles County Registrar-Recorder/County Clerk on January 27, 2025. All interested parties were notified about the extension of the public review period through a Notice of Time Extension of Public Review and Comment Period.

Furthermore, a Phase II ESA would not be required as the Phase I ESA included in Appendix E of the Draft EIR determined that there is no evidence for designating the Project Site as a Recognized Environmental Condition (REC), Historical Recognized Environmental Condition (HREC), or Controlled Recognized Environmental Condition (CREC) based on reviews of historic documents and present site conditions. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 6-13

**EXHIBIT 1**

[6] Los Angeles County Airport Land Use Commission, Los Angeles County Airport Land Use Plan, https://planning.lacounty.gov/wp-content/uploads/2022/10/Los-Angeles-County-Airport-Land-Use-Plan.pdf.

## RESPONSE NO. 6-13

Exhibit 1 contains a copy of "Strategies to Reduce Air Pollution Exposure Near High- Volume Roadways" by the California Air Resources Board. This comment does not concern any environmental issue or information addressed or contained in the Draft EIR. Therefore, no further response is warranted.

## COMMENT NO. 6-14

**EXHIBIT 2**

## RESPONSE NO. 6-14

Exhibit 2 contains a copy of "Scenic Highways – Frequently Asked Questions" by Caltrans. Exhibit 2 is discussed in *RESPONSE NO. 6-7*. Therefore, no further response is warranted.

## COMMENT NO. 6-15

**EXHIBIT 3**

## RESPONSE NO. 6-15

Exhibit 3 contains articles from the Long Beach Post discussing Pacific Coast Highway and its car crashes and fatalities. This comment does not concern any environmental issue or information addressed or contained in the EIR. Therefore, no further response is warranted.

## COMMENT NO. 6-16

**EXHIBIT 4**

## RESPONSE NO. 6-16

Exhibit 4 contains a copy of the "Bixby Village Plaza" and "2nd and PCH" property information. This comment does not concern any environmental issue or information addressed or contained in the EIR. Therefore, no further response is warranted.

## COMMENT NO. 6-17

**EXHIBIT 5**

## RESPONSE NO. 6-17

Exhibit 5 contains a copy of the comment letter from Melissa Soto, Manager of Capital Program Development Design and Construction Services at California State University, Long Beach dated January 23, 2025 and email correspondence between the applicant and the City regarding affiliation with CSULB. Please refer to *RESPONSE NO. 3-1* through *3-6* for responses to the comment letter from Melissa Soto which clarifies that the Project would not be affiliated with CSULB. Therefore, no further response is warranted.

## COMMENT NO. 6-18

**EXHIBIT 6**

## RESPONSE NO. 6-18

Exhibit 6 contains a copy of a comment letter in response to the Notice of Preparation from David Miranda, Executive Director of the Long Beach Unified School District, dated September 11, 2024. As discussed in *RESPONSE NO. 6-8*, Exhibit G recommends the City conduct a traffic study; however, a traffic study is not required per the City's traffic study guidelines. Therefore, no further response is warranted.

## COMMENT NO. 6-19

**EXHIBIT 7**

## RESPONSE NO. 6-19

Exhibit 7 contains a comment letter from Connie Carter Lynsky. Response to Comments provided by Connie Carter Lynsky are provided in *RESPONSE NO. 7-1* through *7-3.* Therefore, no further response is warranted.

## COMMENT NO. 6-20

**EXHIBIT 8**

## RESPONSE NO. 6-20

Exhibit 8 contains an article from the Duke Research Blog titled, "We are Killing Birds. Solutions Exist. Research Can Help.", by Sophie Cox. Please refer to *RESPONSE NO 6-10* for a response to the argument raised in Exhibit 8. Therefore, no further response is warranted.

## COMMENT NO. 6-21

**EXHIBIT 9**

## RESPONSE NO. 6-21

Exhibit 9 contains an article from the World Economic Forum titled, “Low-emissivity glass is revolutionizing building efficiency. Here’s how”. Please refer to *RESPONSE NO. 6-10* for a response to the argument raised in Exhibit 9. Therefore, no further response is warranted.

## COMMENT NO. 6-22

**EXHIBIT 10**

## RESPONSE NO. 6-22

Exhibit 10 contains a summary of the Airport Influence Area for airports in Los Angeles County. Please refer *to RESPONSE NO. 6-11*, which acknowledges that the closest airport is located roughly 1.6 miles north of the Project Site and that there are no other airports or airstrips within 2 miles of the Project Site. Furthermore, *RESPONSE NO. 6-11* states that the Project Site is not located within AIA boundaries. Therefore, no further response is warranted.

# LETTER NO. 7

Connie Lynsky
1331 Granada Avenue
Long Beach, CA 90804
crafticonnie@gmail.com

Received December 10, 2024

## COMMENT NO. 7-1

After reviewing the proposed plan, my comments are:

Although the number of "net daily trips" are only expected to increase by 507, that number could have a big impact on a section of Clark that is already quite busy. Currently vehicles can turn left into the building parking structure (and possibly turn left onto Clark as they are leaving). When this occurs, there is a bottleneck for cars headed southbound. Having a "No Left Turn" with enforcement would eliminate the bottlenecks caused by left turns.

## RESPONSE NO. 7-1

This comment is noted for the record and will be provided to the decision-makers for review and consideration. As described in Section 4.12, Transportation of the Draft EIR, the Project Site would be served by transit, such as LBT Lines 41, 45, and 46, which provide service to the Metro Downtown Long Beach Station; LBT Lines 171, 175, 91, 111, 112, 121, and 173 which are all within 0.5 miles of the Project Site. Pedestrian access to the Project Site is provided via sidewalks located along Pacific Coast Highway, East Anaheim Street, and Clark Avenue; and bicycle access is provided via bicycle paths on Pacific Coast Highway. Additionally, the Project would provide 150 new bicycle parking spaces that would further promote the use of bicycles. The Project's net trip generation estimate of 507 daily trips would not require roadway improvements along Clark. Avenue. As described on page 4.12-7 through 4.12-11 of the Draft EIR, the Project would not conflict with a program, plan, ordinance, or policy addressing he circulating system, including transit, roadway, bicycle, and pedestrian facilities. Therefore, the Project would encourage the use of alternative modes of transportation which would minimize impacts to traffic congestion along Clark Avenue. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 7-2

Parking in the residential area west of the proposed site is already difficult (preferential parking "V"). I don't know what would be required to expand the boundary for the "V" preferential parking and don't want to see students with this address being able to get parking permits for this section.

## RESPONSE NO. 7-2

This comment is noted for the record and will be provided to the decision makers for review and consideration. It should be noted that parking on its own is not considered a CEQA issue. The Project would provide 364 vehicle parking stalls and would provide 150 new bicycle parking spaces on the first level of the subterranean parking structure, encouraging biking. Additionally, the Project Site is in proximity to several transit facilities and lines, such as LBT Lines 41, 45, and 46 which provide service to the Metro Downtown Long beach Station; LBT Lines 171, 175, 91, 111, 112, 121, and 173 which are all within 0.5 miles of the Project Site. Therefore, the Project residents would be adequately served by transit and would provide on-site vehicle and bicycle parking for residents. As such, findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

## COMMENT NO. 7-3

Also, I noticed that although the plan includes the number of proposed EV parking spaces, there is no mention of handicap parking spaces.

Thank you for considering the above.

## RESPONSE NO. 7-3

This comment is noted for the record and will be provided to the decision makers for review and consideration. It should be noted that parking is not considered a CEQA issue. Nevertheless, as described on page 2-10, within Chapter 2.0, Project Description of the Draft EIR, the Project would include a total of 364 parking stalls which would include 19 accessible parking stalls for people with disabilities. Findings and conclusions of the Draft EIR are not affected. Revisions to the Draft EIR are not required.

# 3. Corrections and Additions

## 3.1 Introduction

In accordance with the CEQA Guidelines Section 15132 (a), this Chapter of the Final EIR is intended to provide any changes to the Draft EIR that have been made to clarify, correct, or supplement the information provided in that document. More specifically, CEQA requires recirculation of a Draft EIR only when "significant new information" is added to a Draft EIR after public notice of the availability of the Draft EIR has occurred (refer to California Public Resources Code Section 21092.1 and CEQA Guidelines Section 15088.5), but before the EIR is certified. CEQA Guidelines Section 15088.5 specifically states:

*"New information added to an EIR is not 'significant' unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. 'Significant new information' requiring recirculation includes, for example, a disclosure showing that:*

- *A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.*
- *A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted to reduce the impact to a level of insignificance.*
- *A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project's proponents decline to adopt it.*
- *The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded."*

CEQA Guidelines Section 15088.5 also provides that "[r]ecirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR... A decision not to recirculate an EIR must be supported by substantial evidence in the administrative record."

As demonstrated in this Final EIR, the changes presented in this Chapter do not constitute new significant information warranting recirculation of the Draft EIR as set forth in CEQA guidelines Section 15088.5. Rather, the Draft EIR is comprehensive and has been prepared in accordance with CEQA.

Change to the Draft EIR are indicated below under the respective EIR section heading page number and paragraph. Paragraph reference is to the first fill paragraph on the page. Deletions are shown with ~~strikethrough~~ and additions with <u>underline</u>.

**1. Executive Summary, Project Alternatives, page ES-18 through ES-19 has been revised as follows:**

## Alternative 2: Market Rate Housing

Alternative 2 would adaptively reuse the existing building and develop market-rate housing. Alternative 2 would include 149 units, comprised of 65 one-bedroom, 44 two-bedroom, and 40 three-bedroom apartments, resulting in approximately 273 bedrooms total. Under Alternative 2, the first floor would include amenities for the residents, including a laundry room, mailroom, loungeroom, and theatre. Outdoor amenities would include a dog park, outdoor BBQ with picnic tables, a flexible lawn with artificial turf, and an outdoor patio. An outdoor pool would be provided. The second to seventh floor would consist of residential units. Parking would be provided in the existing three levels of subterranean parking. Alternative 2 would be subject to AB 2097 parking requirements and would not enforce minimum parking requirements as the Project Site is located within one-half mile of public transit options including LBT bus service ~~and the CSULB Beachside shuttle~~. Therefore, Alternative 2 would not be subject to parking minimums established by LBMC. Alternative 2 would provide 273 standard parking spaces for residents.

## Alternative 3: Senior Living and Student Housing

Alternative 3 would adaptively reuse the existing building and develop senior and student housing. The first floor would provide an administrative office, an industrial kitchen, and medicine storage for the senior living residents. Additionally, a shared laundry room, a mailroom, a communal lounge, and a fitness room would be provided on the ground floor for the seniors and students. Outdoor amenities would include a residential gardening area, dining patio, and a flexible lawn with artificial turf. No outdoor pool would be provided. Senior housing would be provided on the second and third floors. Student housing would be provided on the fourth through seventh floor. Alternative 3 would provide 50 one-bedroom units for seniors and 395 beds for student housing. The student housing portion of Alternative 3 would be comprised of 125 one-bedroom, 75 two-bedroom, and 40 three-bedroom units, resulting in a total of 240 dwelling units with 395 beds overall for student housing. Each student housing floor would have its own shared lounge and kitchen. Additional amenities located on the student floors would include a fitness area and study rooms on the fourth through seventh floors. There would be a total of 290 dwelling units total. Alternative 3 would be subject to AB 2097 parking requirements as the site would be located within one-half mile of public transit options including LBT bus service ~~and the CSULB Beachside shuttle~~. Therefore, Alternative 3 would provide 50 spaces for the senior living component (e.g., residents and employees) and would provide one parking spot per student resident (395 spaces). Therefore, Alternative 3 would provide a total of 445 parking spaces to serve the senior living uses and student housing.

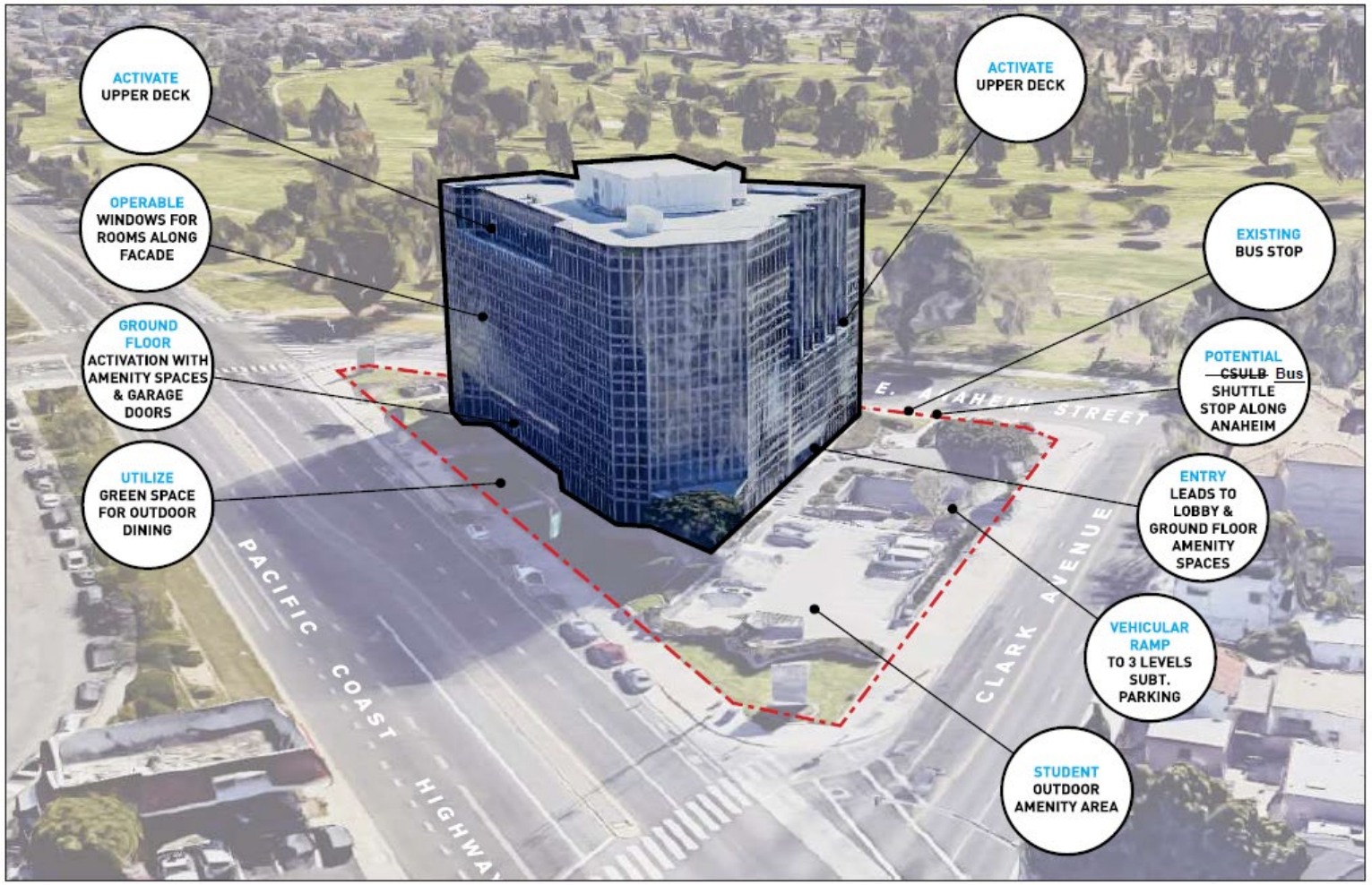
**2. Executive Summary, Table ES-2: Alternatives and Project Comparison, page ES-25. Noise has been revised as follows to accurately reflect Section 4.10 Noise of the Draft EIR:**

| Environmental Issue Area | Project | Alternative 1: No Build/No Project | Alternative 2: Market Rate Housing | Alternative 3: Senior Living and Student Housing | Alternative 4: Student Housing and Office Space |
|---|---|---|---|---|---|
| Noise | Less than Significant ~~with Mitigation~~ | **Avoid**. Existing conditions would remain the same under Alternative 1. Therefore, there would be no impacts. | **Less**. Noise from construction activities would be similar to the Project. Operational noise would be less than the Project, because the Alternative results in a smaller population and fewer vehicle trips. Impacts would be less than significant. | **Less**. Noise from construction activities would be less to the Project due no pool and less equipment utilized. Operational noise would be less than the Project, because this Alternative would include a smaller population and fewer vehicle trips Impacts would be less than significant. | **Less**. Noise from construction activities would be less to the Project due no pool and less equipment utilized. Operational noise would be less than the Project, because this Alternative would include a smaller population and fewer vehicle trips Impacts would be less than significant. |

**3. Executive Summary, page ES-23 through ES 28. Page numbers have been revised as follows:**

ES-2~~3~~2
ES-24~~3~~
ES-2~~5~~4
ES-2~~6~~5
ES-2~~7~~6
ES-2~~8~~7

**4. Chapter 2, Project Description, page 2-13, Figure 2-6: Preliminary Massing Concept has been revised as follows:**



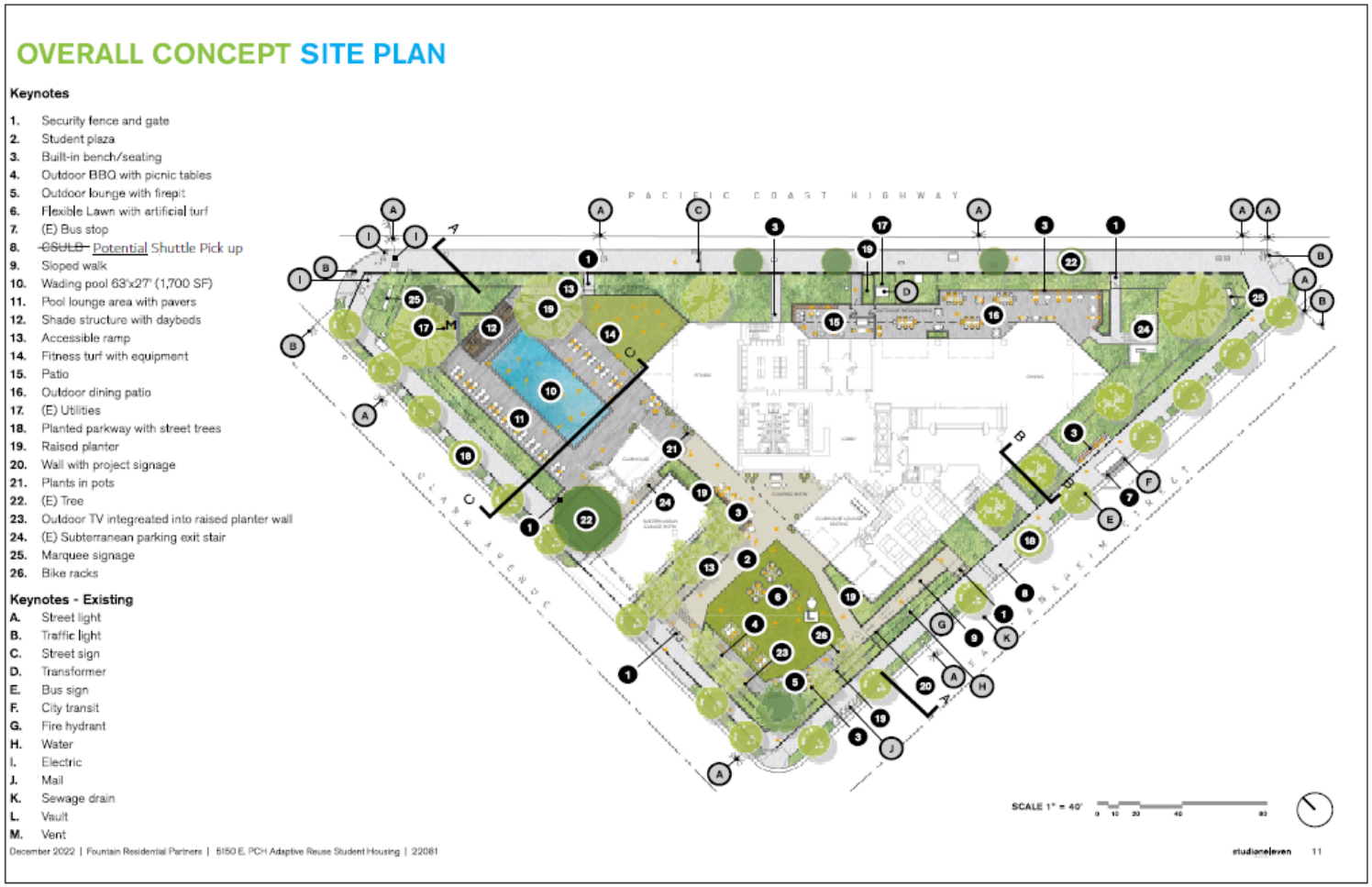

N.T.S.

**FIGURE 2-6:** Preliminary Massing Concept

PARK TOWER STUDENT HOUSING PROJECT

Kimley»Horn

**5. Chapter 2, Project Description, page 2-16, Figure 2-7: Preliminary Landscape and Amenities plan has been revised as follows:**




N.T.S.

**FIGURE 2-7:** Preliminary Landscape and Amenities Plan

PARK TOWER STUDENT HOUSING PROJECT

Kimley»Horn

**6. Chapter 5, Alternatives, page 5-86, Section 5.6.2 Fewer Units Alternative has been revised to clarify why the alternative was considered but rejected as follows:**

Redeveloping the Project Site with fewer residential units was considered. This alternative would not help to meet the Project's objectives to the same degree as the Project. By providing fewer units and beds, the Project Site would remain ~~become~~ underutilized and would neither allow the City to reach its RHNA goals nor provide housing for special needs residents such as students ~~for a at the same time~~ as the Project would. Additionally, fewer beds would result in less housing in close proximity to open space, public transportation, and a wide range of services and goods in the City. Moreover, a Fewer Units Alternative would not reduce any significant impacts that would occur as a result of the Project as the project would not result in any significant and unavoidable impacts. A reduction in the number of units would not reduce the size of the Project Site or the amount of development needed because the project is adapting an existing building. Taking these factors into consideration, a ~~residential development alternative~~ Fewer Units Alternative was not carried forward for further analysis

**7. Chapter 6, Other CEQA Considerations, page 6-8, AES-2 has been revised to correct the designation of the Pacific Coast Highway as follows:**

**No Impact**. The Project Site faces Pacific Coast Highway to the north and east. Pacific Coast Highway is currently not designated as a scenic highway by Caltrans. However, according to the Urban Design Element, the entire stretch of the Pacific Coast Highway will become a scenic highway by 2030. ~~The nearest eligible State Scenic Highway is a segment of California State Route 91 that is located approximately 18.04 miles east of the Project Site.~~ The Pacific Coast Highway is designated as an Eligible State Scenic Highway by Caltrans. The nearest Officially Designated State Scenic Highway is State Route 91, located approximately 18.11 miles northeast of the Project Site. As discussed above, the Project involves the adaptive reuse of the existing office building into new student housing and minor changes to the building façade would not substantially add to the existing building's massing or scale, nor would increase the building's height. Therefore, there would be no impacts to scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a State Scenic Highway. ~~Accordingly, the Project would have no impact on scenic resources within a State Scenic Highway.~~

**8. Appendix B: Park Tower Student Housing Air Quality and Greenhouse Gas Emissions Analysis, Attachment B CAAP Consistency Checklist, Table 3 Step 5: CAAP Adaptation Action Consistency Checklist has been revised to correct the following description of Project Measure(s)/ Documentation of Compliance:**

**TABLE 3**

**STEP 5: CAAP ADAPTATION ACTION CONSISTENCY CHECKLIST**

| CAAP Adaptation Action Consistency Requirement | Description of Project Measure(s) / Documentation of Compliance | Project Consistency |
|---|---|---|
| **Extreme Heat** | | |
| **1. Incorporate Cool Roofs, Cool Walls, Reflective Streets, Cool Surfaces, and Shade Canopies**<br><br>The project incorporates the following features into its design, but not less than the California Energy Code:<br>1. Cool roofs and/or walls in place of dark roofs and/or conventional walls<br>2. Cool pavements and reflective street materials<br>3. Shade canopy installations<br>4. Other heat island mitigation design features<br><br>**Supports CAAP Measures:** EH-1, EH-2 | *Describe which, if any, project consistency options from the leftmost column you are implementing.*<br><br>~~The roof of the proposed building would be copper clad and the building exterior would be treated with a white exterior insulation finish system (stucco).~~<br><br>Prior to Building Permit issuance, the City of Long Beach Building Division would review and verify that the proposed Project site plans demonstrate compliance with the current Building Energy Efficiency Standards. The proposed Project would also be required to comply with CALGreen, which establishes planning and design standards for sustainable site development, energy efficiency (more than CEC requirements), water conservation, material conservation, and internal air contaminants.<br><br>The Project Site would include light pavers and a shade structure which would reduce heat island effect. The Project would also provide access to a pool, which would provide cooling onsite. | ☑ Project Complies<br><br>☐ Not Applicable<br><br>☐ Project Does Not Comply |
| **3. Incorporate Bus Shelter Amenities**<br><br>For any project that includes the installation of a new bus shelter, the project must include bus shelter amenities such as shade structures.<br><br>**Supports CAAP Measures:** EH-7 | *Describe why this action is not applicable to your project.*<br><br>The proposed Project applicant would provide improvements to the existing bus shelter, which would be a Condition of Approval. ~~would not include installation of a new bus shelter.~~ | ☐ Project Complies<br><br>☑ Not Applicable<br><br>☐ Project Does Not Comply |

| | | |
|---|---|---|
| **Air Quality** | | |
| **5. Include Urban Agriculture**<br><br>The project includes urban agriculture in the form of community or private gardens.<br><br>**Supports CAAP Measures:** AQ-2 | *Describe why this action is not applicable to your project.*<br><br>*OR,*<br><br>*Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)*<br><br>~~The proposed Project would include recreational uses on private property with liability concerns relating to public access.~~<br><br>The Project Site would integrate landscaping throughout the property. The addition of planters would maximize access to greenery and landscaping within a limited lot space, promoting access to a green space. | ☐ Project Complies<br>☑ Not Applicable<br>☐ Project Does Not Comply |
| **6. Use Electric Lawn and Garden Equipment, Outdoor Power Equipment, and Other Small Equipment**<br><br>The project prohibits the use of gasoline-powered small equipment, including lawn and garden equipment and outdoor power equipment, for all tenants and owners. The project provides educational materials to tenants regarding the SCAQMD Electric Lawn and Garden Equipment Incentive and Exchange Program, Commercial Lawn & Garden Battery Buy-Down Rebate Program, and Residential Lawn Mower Rebate Program as well as the new requirements of AB1346.<br><br>This requirement must be stipulated in the contract specifications for the project's future tenants and any landscaping contracts for the property or tenants.<br><br>**Supports CAAP Measures:** AQ-4 | *Describe which, if any, project consistency options from the leftmost column you are implementing.*<br><br>*OR,*<br><br>*Describe why this action is not applicable to your project.*<br><br>*OR,*<br><br>*Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)*<br><br>The proposed Project would include energy-efficient appliances, water efficient plumbing fixtures and fittings, and water-efficient landscaping.<br><br>The proposed Project would include a Condition of Approval which would prohibit the use of gas-powered equipment. | ☑ Project Complies<br><br>☐ Not Applicable<br><br>☐ Project Does Not Comply |
| **Drought** | | |
| **7. Implement Water Use Efficiency and Water Conservation** | *Describe which, if any, project consistency options from the leftmost column you are implementing.* | ☑ Project Complies |

| | | |
|---|---|---|
| The project incorporates water use efficiency and conservation measures, including:<br>1. CalGreen Tier 1 and Tier 2 voluntary water conservation measures<br>2. Low-flow or high-efficiency water fixtures<br>3. Water-efficient landscapes with lower water demands than required by the DWR 2015 Model Water Efficient Landscape Ordinance (MWELO)<br>4. Drought-tolerant and native plant species only<br>5. Other applicable strategies to reduce water use<br>**Supports CAAP Measures:** DRT-1 | *OR,*<br>*Describe why this action is not applicable to your project.*<br>*OR,*<br>*Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)*<br>The proposed Project would include energy-efficient appliances, water efficient plumbing fixtures and fittings, and water-efficient landscaping. In addition the proposed Project would have drought tolerant plants (e.g., Agave, Aloe, ornamental grasses, leafy ground covers, colorful shrubs, and soft textured vegetation) and ornamental trees (London Plane Tree, Mexican Palo Verde, Shademater Honeylocust, and the Sentinel Manzanita). The proposed Project would be required to comply with the MWELO ordinance for new landscaping, which would be included as a Condition of Approval. | ☐ Not Applicable<br>☐ Project Does Not Comply |
| **8. Incorporate Green Infrastructure and Green Streets**<br>The project shall incorporate green infrastructure such as permeable pavement, bioretention areas, bioswales, or vegetated strips.<br>**Supports CAAP Measures:** DRT-3 | *Describe which, if any, project consistency options from the leftmost column you are implementing.*<br>*OR,*<br>*Describe why this action is not applicable to your project.*<br>*OR, Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)*<br>~~The proposed Project does not anticipate to incorporate green infrastructure~~<br>The proposed Project would incorporate green infrastructure such as bioswales and vegetated strips to capture stormwater and mitigate stormwater runoff. Pursuant to California's Title 24 building code, the proposed Project would include infrastructure such as permeable pavement and water efficient landscaping. | ☐ Project Complies<br>☑ Not Applicable<br>☐ Project Does Not Comply |
| **9. Use Recycled Water and Greywater for Non-Potable Uses; includes Rainfall Capture**<br>The project uses recycled water and/or greywater for non-potable uses and incorporates water reuse strategies onsite, such as rainfall capture systems. The project would:<br>1. Require use of reclaimed / recycled water and/or grey water for outdoor uses | *Describe which, if any, project consistency options from the leftmost column you are implementing.*<br>*OR,*<br>*Describe why this action is not applicable to your project.*<br>*OR, Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)* | ☐ Project Complies<br>☑ Not Applicable<br>☐ Project Does Not Comply |

| | | |
|---|---|---|
| 2. Install residential greywater systems that meet appropriate regulatory standards<br>3. Install rainfall capture systems<br>4. Install dual plumbing for the use of recycled water<br>**Supports CAAP Measures:** DRT-4, DRT-5 | ~~The proposed Project does not anticipate to use recycled water and/or greywater for non-potable uses and incorporate water reuse strategies onsite, such as rainfall capture systems.~~ The proposed Project shall integrate greywater and recycled water for non-potable uses, unless infeasible, as required by the Condition of Approval. | |

# 4. Mitigation Monitoring and Reporting Program

This Mitigation Monitoring and Reporting Program (MMRP), which is provided in **Table 4-1, Mitigation Monitoring and Reporting Program**, below, has been prepared pursuant to Public Resources Code Section 21081.6, which requires a Lead Agency to adopt a "reporting or monitoring program for changes to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment." In addition, CEQA Guidelines Section 15097(a) requires that:

> *In order to ensure that the mitigation measures and project revisions identified in the EIR or negative declaration are implemented, the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program.*

The City of Long Beach is the Lead Agency for the Project and therefore is responsible for administering and implementing the MMRP. The decision-makers must define specific reporting and/or monitoring requirements to be enforced during Project implementation prior to final approval of the Project. The primary purpose of the MMRP is to ensure that the mitigation measures identified in the Draft EIR are implemented, thereby minimizing identified environmental effects.

The MMRP also includes Project Design Features (PDFs) identified throughout Chapter 2, Project Description of the Draft EIR. The PDFs are specific design elements proposed by the Applicant that have been incorporated into the Project that serve to reduce or avoid potential environmental effects. Because PDFs have been incorporated into the Project, they do not constitute mitigation measures, as defined by CEQA Guidelines Section 15126.4. However, PDFs are included in this MMRP to ensure their implementation as a part of the Project.

Final clearance shall require all applicable verification as indicated in **Table 4-1**. The City will have primary responsibility for monitoring and reporting the implementation of the PDFs and mitigation measures unless otherwise indicated. The PDFs and mitigation measures are identified by the impact category and number that correspond with the Draft EIR.

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## Table 4-1: Mitigation Monitoring and Reporting Program

| Project Design Feature (PDF) or Mitigation Measure (MM) | Monitoring Phase | Enforcement Agency | Action Indicating Compliance |
|---|---|---|---|
| **Project Design Feature** | | | |
| **Rooftop Solar Photovoltaic Panels** | Operation | City of Long Beach Planning Bureau<br><br>City of Long Beach Building and Safety | Plan check approval and issuance of Certificate of Occupancy.<br><br>Proof of installation of solar array at inspection. |
| **LEED Certification** | Pre-Construction<br><br>Operation | City of Long Beach Planning Bureau<br><br>City of Long Beach Building and Safety | Plan check approval and issuance of Certificate of Occupancy.<br><br>Compliance shall be demonstrated by achieving LEED Certification through the submission of a completed application for review to the Green Business Certification Inc. |
| **Water Efficient Fixtures** | Construction<br><br>Operation | City of Long Beach Planning Bureau<br><br>City of Long Beach Building and Safety | Plan check approval and issuance of Certificate of Occupancy. |
| **Water Efficient Landscaping** | Construction<br><br>Operation | City of Long Beach Planning Bureau<br><br>City of Long Beach Building and Safety | Plan check approval and issuance of Certificate of Occupancy. |
| **Mitigation Measure (MM)** | | | |
| **MM CUL-1, Inadvertent Discovery of Cultural Resources:** In the event that any subsurface cultural resources are encountered at the Project Site during construction or the course of any ground disturbance activities, all such activities within 50 feet of the discovery shall halt immediately. The applicant shall notify the City and consult with a Secretary of Interior qualified archaeologist who shall evaluate the find in accordance with federal, State, and local guidelines, including those set forth in the California Public Resources Code Section 21083.2 and shall determine the necessary findings as to the origin and disposition to assess the significance of the find. If any find is determined to be | Construction | City of Long Beach Public Works<br><br>City of Long Beach Community Development Department<br><br>Secretary of Interior Qualified Archaeologist<br><br>Consulting Tribes | If resources are found, recordation of all identified cultural resources on appropriate CA DPR 523 series forms.<br><br>All records will be submitted to the City of Long Beach, Consulting Tribe(s), and South-Central Coastal Information Center (SCCIC). |

| Project Design Feature (PDF) or Mitigation Measure (MM) | Monitoring Phase | Enforcement Agency | Action Indicating Compliance |
|---|---|---|---|
| significant, appropriate avoidance measures recommended by the consultant and approved by the City must be followed unless avoidance is determined to be unnecessary or infeasible by the City. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery, excavation) shall be instituted. For any resources of Native American origin, the City shall also contact the Tribes that elected to consult on the Project to identify its potential as a Tribal Cultural Resource (TCR). Should the resource, in consultation between the City and Tribe(s), be determined a TCR, the City shall also consult with Tribes regarding avoidance, or other measures recommended by the consultant. All identified cultural resources will be recorded on appropriate CA DPR 523 series forms and evaluated for significance. All records will be submitted to the City of Long Beach, Consulting Tribe(s), and South-Central Coastal Information Center (SCCIC). | | | |
| **MM CUL-2, Inadvertent Discovery of Human Remains.** If human remains are encountered during the undertaking, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. | Construction | City of Long Beach Public Works Department<br><br>City of Long Beach Planning Bureau<br><br>Native American Heritage Commission<br><br>County Coroner | If resources are encountered, the County Coroner must be contacted.<br><br>The County Coroner has 24 hours to notify the NAHC if the remains are determined to be of Native American descent.<br><br>Compliance shall be demonstrated through a letter from the County Coroner to the City. |
| **MM GEO-1, Paleontological Monitoring**. In the event paleontological resources are encountered during construction of the Project, the City shall be immediately informed of the discovery. All work shall cease in the area of the find, and a qualified paleontologist shall be retained by the Applicant to evaluate the find before restarting work in the area. A qualified paleontologist is a paleontologist who meets the Society of Vertebrate Paleontology (SVP) standards for Qualified Professional Paleontologist, which is defined as an individual preferably with an M.S. or Ph.D. in paleontology or | Construction | City of Long Beach Public works Department<br><br>City of Long Beach Building and Safety Bureau<br><br>City of Long Beach Planning Bureau | If resources are encountered, a qualified paleontologist shall be retained. Compliance shall be demonstrated through the submission of a paleontological resources assessment to the City of Long Beach. |

| Project Design Feature (PDF) or Mitigation Measure (MM) | Monitoring Phase | Enforcement Agency | Action Indicating Compliance |
|---|---|---|---|
| geology, who is experienced with paleontological procedures and techniques, who is knowledgeable in the geology of California (preferably Southern California), and who has worked as a paleontological mitigation Project supervisor for a least one year. The City shall require that all paleontological resources identified on the Project Site be assessed and treated in a manner determined by the qualified paleontologist. The qualified paleontologist shall be empowered to halt or divert ground disturbing activities. | | Qualified Paleontologist meeting the Society of Vertebrate Paleontology (SVP) standards | |
| **MM GEO-2, Paleontological Documentation.** Fossil remains collected during the monitoring process will be salvaged and will be cleaned, repaired, sorted, and catalogued. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, will be deposited (as a donation) in a scientific institution with permanent paleontological collections located within the County (or, if no repository is available, adjacent Counties). A final data recovery report will be completed by a qualified paleontologist. This report will include discussions of the methods used, stratigraphic section(s) exposed, fossils collected, and significance of recovered fossils. The report will be submitted to the Lead Agency upon completion. | Construction | City of Long Beach Public Works Department<br><br>City of Long Beach Building and Safety Bureau<br><br>City of Long Beach Planning Bureau<br><br>Qualified Professional Paleontologist meeting the Society of Vertebrate Paleontology standards | If resources are encountered, a qualified paleontologist shall be retained. Compliance shall be demonstrated through the submission of a paleontological resources assessment to the City of Long Beach. |
| **MM TCR-1, Retain a Native American Monitor Prior to Commencement of Ground Disturbing Activities.** The Project applicant/lead agency shall retain a Native American Monitor from or approved by the Gabrieleño Band of Mission Indians – Kizh Nation. The monitor shall be retained prior to the commencement of any "ground-disturbing activity" for the subject Project at all Project locations (i.e., both on-site and any off-site locations that are included in the Project description/definition and/or required in connection with the Project, such as public improvement work). "Ground-disturbing activity" shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching. | Construction | City of Long Beach Public Works Department<br><br>City of Long Beach Planning Bureau<br><br>Native American Monitor from or approved by the Gabrieleño Band of Mission Indians – Kizh Nation. | Retention of a Native American Monitor from or approved by the Gabrieleño Band of Mission Indians – Kizh Nation. |

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# APPENDIX A

Original Comment Letters

**DEPARTMENT OF TRANSPORTATION**
DISTRICT 7
100 S. MAIN STREET, MS 16
LOS ANGELES, CA 90012
PHONE (213) 269-1124
FAX (213) 897-1337
TTY 711
www.dot.ca.gov

# LETTER 1

*Making Conservation a California Way of Life*

January 23, 2025

Gina Casillas, Planner
Development Services, Planning Bureau
City of Long Beach
411 West Ocean Boulevard, Third Floor
Long Beach, CA 90802

RE: Park Tower Student Housing Project
SCH # 2024080441
Vic. PM LA-1/2.74
GTS # LA-2024-04698

Dear Gina Casillas:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above-referenced environmental document. The Project will adaptively reuse an existing seven-story office building with three levels of subterranean parking located at 5150 Pacific Coast Highway in the City of Long Beach (City), California. The existing office building is approximately 120,000 square feet (sf), of which 109,600 sf is currently leased. The Project would involve the adaptive reuse of the existing building into a private dormitory (housing for students) with 149 student residential suites (593 beds).

The project site is located within 0.5 miles of public transit, facilitating convenient access to transit services. Existing bicycle infrastructure includes a Class II bicycle lane along Pacific Coast Highway, which provides striped and signed bike lanes for cyclists. The City's Bicycle Master Plan also identifies a proposed Class II bicycle lane along Clark Avenue, further enhancing regional bike connectivity. The project will include 150 new bicycle parking spaces on the first level of subterranean parking, supporting active transportation options. Pedestrian access is supported by sidewalks, crosswalks, and vegetated buffers in the vicinity of the project site, with sidewalks located along Pacific Coast Highway, East Anaheim Street, and Clark Avenue. These features collectively enhance multimodal connectivity and accessibility for the project.

The proposed project is anticipated to generate over 507 net new daily trips; however, it would result in a net -112 and 3 AM and PM peak hour trips, respectively. As the project is located within a Transit Priority Area (TPA) and a low-VMT area, it qualifies for screening criteria under CEQA guidelines. Based on these factors, the project is presumed to have a less-than-significant impact on VMT, and no further VMT analysis is required.

Project construction has the potential to impact the transportation system through activities such as hauling excavated materials and debris, transporting construction equipment, delivering construction materials, and implementing temporary travel closures. To mitigate these impacts, the project will be required to develop and implement a comprehensive Traffic Management Plan (TMP) in compliance with the Long Beach Department of Public Works standards and guidelines.

As a reminder, any transportation of heavy construction equipment and/or materials which require use of oversized transport vehicles on State highways will need a Caltrans transportation permit. We recommend large-size truck trips be limited to off-peak commute periods. Truck drivers should cover construction trucks with tarpaulin to avoid debris spillage onto the State Highway.

Please be reminded that any work performed within the State Right-of-way on the Pacific Coast Highway will require an Encroachment Permit from Caltrans. Any modifications to State facilities must meet all mandatory design standard and specifications.

Please feel free to contact Mr. Alan Lin the project coordinator at (213) 269-1124 and refer to GTS # LA-2024-04698.

Sincerely,

Anthony Higgins

Anthony Higgins
Acting LDR Branch Chief

Cc: State Clearinghouse

LOS ANGELES COUNTY AIRPORT LAND USE COMMISSION

DAVID W. LOUIE
Chair

ELVIN W. MOON
Vice Chair

YOLANDA DUARTE-WHITE
Commissioner

PAM O'CONNOR
Commissioner

MICHAEL R. HASTINGS
Commissioner

January 23, 2025

Department of Development Services, Planning Bureau
ATTN: Gina Casillas, Planner
411 W Ocean Boulevard, 3rd Floor
Long Beach, CA 90802

**SUBJECT: Park Tower Student Housing Project**

Dear Ms. Casillas:

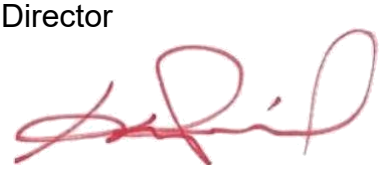
Thank you for the opportunity to comment on the above referenced project. Staff of the Los Angeles County Airport Land Use Commission (ALUC) reviewed the submitted document and has the following comments.

The project is not located within an Airport Influence Area (AIA) of any airport in Los Angeles County. The nearest AIA is associated with Long Beach Municipal Airport, which is over one mile to the north of the project site. Therefore, the proposed project is not subject to ALUC review in accordance with Section 21676 of the California Public Utilities Code. There is no need for further review and staff has no additional comments on the project.

If you have any questions regarding this matter, please contact Bryan S. Moller at (213) 893-7411 or via email at bmoller@planning.lacounty.gov.

Sincerely,

DEPARTMENT OF REGIONAL PLANNING
Amy J. Bodek, AICP
Director



Kevin Finkel, Supervising Regional Planner
Operations and Major Projects Section / ALUC Staff

# LETTER 3

CALIFORNIA STATE UNIVERSITY
LONG BEACH

January 23, 2025

To: Department of Development Services, Planning Bureau
ATTN: Gina Casillas, Planner
411 W. Ocean Boulevard, 3rd Floor
Long Beach, CA 90802

From: Melissa Soto, Manager of Capital Program Development
Design & Construction Services

**Re: Comments on the Park Tower Student Housing Project Draft Environmental Impact Report (EIR)**

On behalf of California State University, Long Beach (CSULB), the Board of Trustees of the California State University (CSU) appreciates the opportunity to review the DEIR for the "Park Tower Student Housing Project" (the "Project"). The Project aims to adapt a seven-story office building with three levels of subterranean parking into what it describes as a private dormitory or housing for students. CSULB offers the following comments in response to the DEIR:

1. **Project Title**. CSULB has serious concerns that the members of the public will be misled or confused into believing that the Project, which includes the terms "Student Housing" in its title, is affiliated with CSULB or with the nearby CSU-owned Beachside Village student housing complex. CSULB is in no way associated with this project and has neither endorsed nor participated in any aspect of its development. In order to avoid confusion that the proposed project is owned or affiliated with the CSU, the project title should be modified to clarify the term "student" as follows: Park Tower Private Student Housing Project, or Park Tower Non-university Student Housing Project, or similar. References to the Project should take care to avoid any suggestion that the Project is affiliated in any manner with the CSU and/or CSULB.

2. **Project Description**. Although some references to CSULB have been removed from the Project Description, Figures 2-6 and 2-7 continue to incorrectly refer to CSULB's Beachside shuttle service as available public transit in the project area. Furthermore, the Project Description continues to indicate that the proposed project would convert an existing office building into a "private dormitory (housing for students)." These references are misleading and confusing. The Beachside shuttle service is not available public transit in the project area, as the Beachside shuttle service is exclusively reserved for use by residents of the CSU-owned Beachside Village student housing complex. The Beachside shuttle service would not provide shuttle service for residents traveling to or from the Project. The Draft EIR should not refer to the Beachside shuttle service as public transit, and the Draft EIR should be revised accordingly.

   In addition, it remains unclear what is meant by the terms "private dormitory" and "student housing." No information is given as to which "students" would be eligible to

live in the proposed development or how residents of the new units would be selected. Given that the proposed development is not a CSULB-endorsed or affiliated project, it is misleading to characterize the proposed project as either a "dormitory" or "student housing," particularly when doing so in a context that references CSULB-owned or operated programs, such as CSULB's Beachside Shuttle program. Continued references to "students" in the project description are likely to confuse the public into believing the Project is directly or indirectly affiliated with CSULB when there is no affiliation of any kind between the Project and the CSU. Accordingly, all references and mentions of the CSU, CSULB, and/or CSULB-owned or operated programs, should be stricken from the Draft EIR. Furthermore, the Draft EIR should explicitly state that the proposed project has no affiliation with, or relation to, CSULB.

3. **Section 4.15, Public Services**. The impact analysis for parks states that impacts to park land and recreation would have a less than significant impact because the proposed project would be required to pay park impact fees. It is also stated, however, that residents would likely primarily utilize amenities on-campus at CSULB. As indicated above, the proposed project is not affiliated with CSULB nor its student housing programs and facilities. Accordingly, the proposed project would not be allowed to offer CSU or CSULB-owned or operated facilities or programs to its residents. The Draft EIR should remove the assumption that residents would utilize campus facilities, and the project developer should refrain from advancing this assumption as a basis for the impact analysis.

4. **Section 4.16, Recreation**. The impact analysis for recreation states that impacts to recreational facilities would have a less than significant impact because the proposed project would be required to pay park impact fees. It is also stated, however, that residents would likely primarily utilize recreational amenities on-campus. As discussed above, the proposed project is not affiliated with CSULB nor its student housing programs and facilities; therefore, the proposed project and its residents would not be allowed to utilize CSU or CSULB-owned or operated facilities. The Draft EIR should remove the assumption that residents would utilize campus facilities and should not use this assumption as a basis for the impact analysis.

5. **Technical Appendices**. Appendix H (Trip Generation Analysis and VMT screening) states that the analysis of vehicle trips for the project was prepared based on the ITE Trip Generation Rate for Off-Campus Student Apartment land use with a subcategory of "adjacent to campus." The proposed project is not affiliated with CSULB, nor its student housing programs and facilities; therefore, utilizing the land use category of "Off-Campus Student Apartment" is inaccurate. The proposed project and its residents would not be considered Off-Campus housing as that terminology is strictly utilized by CSU or CSULB-affiliated student housing. The Draft EIR and all associated technical analyses should remove the assumption that residents of the proposed project are CSU or CSULB students and should not use this assumption as a basis for the impact analysis. In addition, as stated above, the CSU-owned Beachside shuttle service would not be available to residents of the proposed project, and the Draft EIR should not use this assumption as part of its transportation analysis.

Thank you for your consideration of CSULB's comments.

*Melissa Soto*

Melissa Soto, Manager of Capital Program Development
CSULB Design & Construction Services

# LETTER 4

**From:** anngadfly@aol.com <anngadfly@aol.com>
**Sent:** Monday, February 10, 2025 6:14 PM
**To:** LBDS-EIR-Comments <LBDS-EIR-Comments@longbeach.gov>
**Cc:** Anna Christensen <annachristensen259@gmail.com>; Rebecca Robles <rebrobles1@gmail.com>; Virginia Bickford <vbickf123@aol.com>; Charles Moore <cmoore@algalita.org>; Karen Harper <ksharper01@cs.com>; Tahesha Knapp-Christensen <taheshakc259@gmail.com>
**Subject:** DEIR Commments Park Student Housing Project

**-EXTERNAL-**

February 10, 2025

City of Long Beach Development Services, Planning Bureau
411 West Ocean Boulevard, Third Floor
Long Beach, CA 90802
Attention: Gina Casillas, Planner
LBDS-EIR-Comments@LongBeach.gov

Re: DEIR for the Park Student Housing Project

Dear Ms. Casillas:

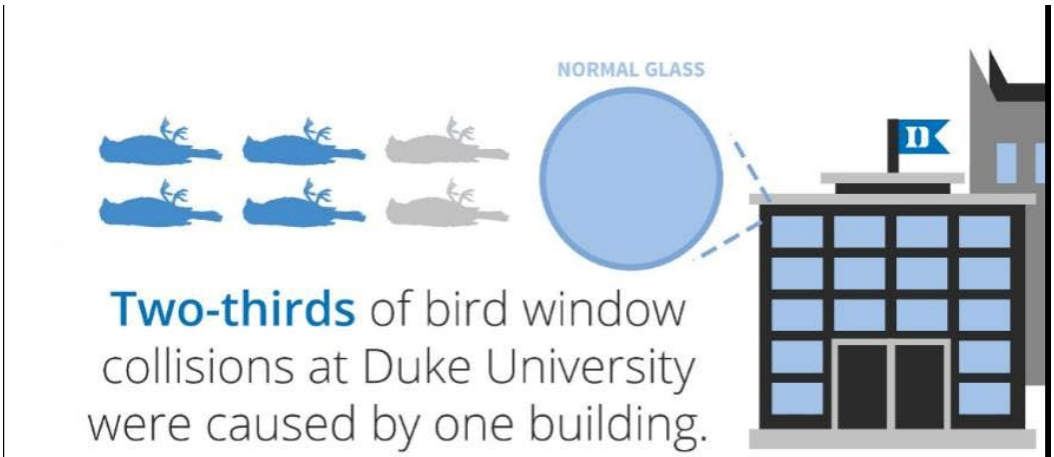
On January 27. 2025, I received notice that the comment time for this DEIR has been extended. This was the first time I was aware of this project. I was not notified of a NOP nor of a Scoping meeting. I would like to submit the following comments on behalf of the Sierra Club Los Cerritos Wetlands Task Force.

In reading the alternatives, we believe Alternative 3 is the best choice for this project, both environmentally and to serve both students and seniors. The addition of a pool in the chosen project is totally unnecessary for a student dorm, especially for students whose motto is The Beach. As stated in the DEIR, the construction of the pool adds many environmental issues, including noise, air quality and tribal concerns.

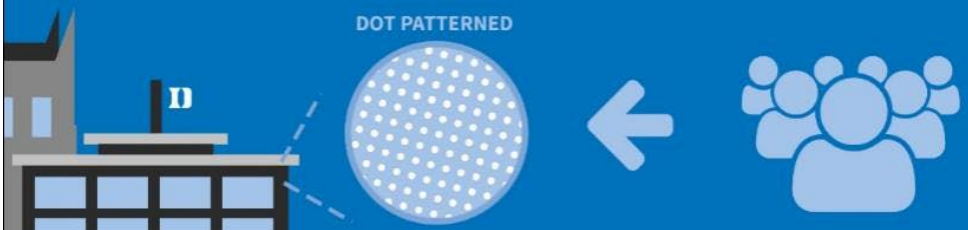
We are all in favor of reusing existing buildings instead of tearing them down, however we have great concerns about this all glass building. The DEIR states there are no Biological issues with this project. We disagree. Because the building is close to Recreation Park and in the coastal migration flyway, a study needs to be done on the possibility of bird kills by the 7 stories of glass. Up to one billion birds die each year in the United States due to collisions with windows and research shows that 54-76 percent of window collisions are fatal. This information should be included in the FEIR and mitigation provided. (Please see attached Duke Un. study).

We suggest etching, fritting, and frosting the windows, which would not only reduce the risk of bird collisions, but also reduce energy costs by reducing solar heat gain (27 SHGC) and reducing cooling loads.

Sincerely,
Ann Cantrell, co-chair,
Sierra Club Los Cerritos Wetlands Task Force




**Two-thirds** of bird window collisions at Duke University were caused by one building.




In response to **student demands**, the building was fitted with **bird-friendly glass**.






Other institutions can **save birds** by documenting collisions & treating glass.

PeerJ

Patterns of bird-window collisions inform mitigation on a university campus
PeerJ 4:e1652 DOI: 10.7717/peerj.1652
https://peerj.com/articles/1652

This is an open access graphic distributed under the terms of the Creative Commons Attribution License.

# LETTER 5

P: (626) 314-3821
F: (626) 389-5414
E: info@mitchtsailaw.com

**Mitchell M. Tsai**
Law Firm

139 South Hudson Avenue
Suite 200
Pasadena, California 91101

**VIA E-MAIL**

January 22, 2025

Gina Casillas, Planner
City of Long Beach Development Services, Planning Bureau
411 West Ocean Boulevard, Third Floor
Long Beach, CA 90802
Email: LBDS-EIR-Comments@LongBeach.gov
Tel.: (562) 570-6879

**RE: Comment on the Draft Environmental Impact Report of Park Tower Student Housing Project of the City of Long Beach (5150 E. Pacific Coast Highway, Long Beach, California; APN 7220-018-009; SCH Number 2024080441)**

Dear Ms. Casillas:

On behalf of the Western States Regional Council of Carpenters ("**Western Carpenters**" or "**WSRCC**"), my Office is submitting these comments on the Draft Environmental Impact Report ("**Draft EIR**") of the Park Tower Student Housing Project ("**Project**") of the City of Long Beach ("**City**"), located at 5150 E. Pacific Coast Highway, Long Beach, CA ("**Project Site**").

The Western Carpenters is a labor union representing almost 90,000 union carpenters in 12 states, including California, and has a strong interest in well-ordered land use planning and in addressing the environmental impacts of development projects.

According to the Notice of Availability ("**NOA**") of the Project's Draft EIR:

> "The Project will adaptively **reuse** an **existing seven**-story **office** building with **three levels** of subterranean **parking** located at 5150 Pacific Coast Highway in the City of Long Beach (City), California. The existing office building is approximately **120,000 square feet** (sf), of which **109,600 sf** is **currently leased**. The Project would involve the **adaptive reuse** of the existing building into a **private dormitory** (**housing** for **students**) with **149 student** residential **suites** (**593 beds**). The Project is proposing a **General Plan Amendment** from the current **Community Commercial**

> (CC) **Placetype** to the **Neighborhood Serving Center** (NSC-Moderate) Placetype, which would **permit residential** uses. The Project would also require a **Zoning Code Amendment/Map Change** to change the existing zone **from Community Commercial Automobile Oriented** (CCA) to **Mixed-Use** (MU 3) to allow for the Project's **student** residential uses and to **enable** the Project to take advantage of the adaptive **reuse development** standards. The Project would also require the **approval** of a **Conditional Use Permit** (CUP) to allow the "**Special Group Residence**" and **Site Plan review** of adaptive reuse."

(NOA, emph. added.)

The Project's above-mentioned description, as well as state agency comments confirm that the Project may have significant impacts, including transportation, related air quality, greenhouse gas emissions, noise, and hazards impacts on highways and freeways, which need to be addressed. Hence, it is of utmost importance that the Project be implemented by *skilled contractors* to minimize the construction impacts and hazards to the surrounding environment from the Project.

Individual members of the Western Carpenters live, work, and recreate in the City and surrounding communities and would be directly affected by the Project's environmental impacts.

The Western Carpenters expressly reserves the right to supplement these comments at or prior to hearings on the Project, and at any later hearing and proceeding related to this Project. (Gov. Code, § 65009, subd. (b); Pub. Res. Code, § 21177, subd. (a); see *Bakersfield Citizens for Local Control v. Bakersfield* (2004) 124 Cal.App.4th 1184, 1199-1203; see also, *Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal.App.4th 1109, 1121.)

The Western Carpenters incorporates by reference all comments raising issues regarding the Environmental Impact Report (EIR) submitted prior to certification of the EIR for the Project. See *Citizens for Clean Energy v City of Woodland* (2014) 225 Cal.App.4th 173, 191 (finding that any party who has objected to the project's environmental documentation may assert any issue timely raised by other parties).

Moreover, the Western Carpenters requests that the City **provide advance notice** for any and all notices referring or related to the Project issued under the California Environmental Quality Act (**CEQA**) (Pub. Res. Code, § 21000 *et seq.*), and the California Planning and Zoning Law ("**Planning and Zoning Law**") (Gov. Code, §§

65000–65010). California Public Resources Code Sections 21092.2, and 21167(f) and California Government Code Section 65092 require agencies to mail such notices to any person who has filed a written request for them with the clerk of the agency's governing body.

**REQUEST FOR CONTINUANCE AND EXTENSION OF COMMENT PERIOD TO COMPLY WITH CEQA:**

As an initial matter, **we hereby object and request** that the City **continue and extend** the EIR comment period, since the City failed to duly upload *all* of the EIR-related documents for public review on December 2, 2024. Specifically, Appendix B of the Draft EIR – one of the most critical appendices related to air quality and greenhouse gas emissions – was not available either on the City's or the state's CEQAnet websites as of December 2, 2024 and through December 11, 2024. (**Exhibit Q** [December 11, 2024 Emails to and from the City re missing Appendix B].) The City uploaded that Appendix B on December 11, 2024 only after we brought the missing Appendix to the City's attention on that day. (*Ibid.*)

CEQA requires that the lead agency provide to the public not only the EIR itself but also its appendices and related studies. "Appendices to the EIR may be prepared in volumes separate from the basic EIR document, but shall be *readily available* for public examination and *shall* be *submitted* to all clearinghouses which assist in public review." (CEQA Guidelines § 15147; see also Public Resources Code ("PRC") § 21091 [requiring 45 days for comment period of an EIR].)

In light of the foregoing, we request that the City extend the EIR comment period.

## I. THE CITY SHOULD REQUIRE THE USE OF A LOCAL WORKFORCE TO BENEFIT THE COMMUNITY'S ECONOMIC DEVELOPMENT AND ENVIRONMENT

As we have previously indicated in our comment to the EIR's Notice of Preparation dated September 13, 2024, to reduce the development (demolition, construction) impacts and risks (hazards) on the surrounding environment, the City should require the Project to be implemented using a local workers who have graduated from a Joint Labor-Management Apprenticeship Program approved by the State of California, have at least as many hours of on-the-job experience in the applicable craft which would be required to graduate from such a state-approved apprenticeship training

program, or who are registered apprentices in a state-approved apprenticeship training program.

Community benefits such as local hire can be helpful to reduce environmental impacts and improve the positive economic impact of the Project. Local hire provisions requiring that a certain percentage of workers reside within 10 miles or less of the Project site can reduce the length of vendor trips, reduce greenhouse gas emissions, and provide localized economic benefits. As environmental consultants Matt Hagemann and Paul E. Rosenfeld note:

> [A]ny local hire requirement that results in a decreased worker trip length from the default value has the potential to result in a reduction of construction-related GHG emissions, though the significance of the reduction would vary based on the location and urbanization level of the project site.

(**Exhibit A** [March 8, 2021 SWAPE Letter to Mitchell M. Tsai re Local Hire Requirements and Considerations for Greenhouse Gas Modeling]; **Exhibits B-C** [Experts' Background].)

Workforce requirements promote the development of skilled trades that yield sustainable economic development. As the California Workforce Development Board and the University of California, Berkeley Center for Labor Research and Education concluded:

> [L]abor should be considered an investment rather than a cost—and investments in growing, diversifying, and upskilling California's workforce can positively affect returns on climate mitigation efforts. In other words, well-trained workers are key to delivering emissions reductions and moving California closer to its climate targets.[1]

Furthermore, workforce policies have significant environmental benefits given that they improve an area's jobs-housing balance, decreasing the amount and length of job commutes and the associated greenhouse gas (GHG) emissions. In fact, on May 7,

[1] California Workforce Development Board (2020) Putting California on the High Road: A Jobs and Climate Action Plan for 2030 at p. ii, *available at* https://laborcenter.berkeley.edu/wp-content/uploads/2020/09/Putting-California-on-the-High-Road.pdf.

2021, the South Coast Air Quality Management District found that that the "[u]se of a local state-certified apprenticeship program" can result in air pollutant reductions.[2]

Locating jobs closer to residential areas can have significant environmental benefits. As the California Planning Roundtable noted in 2008:

> People who live and work in the same jurisdiction would be more likely to take transit, walk, or bicycle to work than residents of less balanced communities and their vehicle trips would be shorter. Benefits would include potential reductions in both vehicle miles traveled and vehicle hours traveled.[3]

Moreover, local hire mandates and skill-training are critical facets of a strategy to reduce vehicle miles traveled ("**VMT**"). As planning experts Robert Cervero and Michael Duncan have noted, simply placing jobs near housing stock is insufficient to achieve VMT reductions given that the skill requirements of available local jobs must match those held by local residents.[4] Some municipalities have even tied local hire and other workforce policies to local development permits to address transportation issues. Cervero and Duncan note that:

> In nearly built-out Berkeley, CA, the approach to balancing jobs and housing is to create local jobs rather than to develop new housing. The city's First Source program encourages businesses to hire local residents, especially for entry- and intermediate-level jobs, and sponsors vocational training to ensure residents are employment-ready. While the program is voluntary, some 300 businesses have used it to date, placing more than 3,000 city residents in local jobs since it was launched in 1986. When

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[2] South Coast Air Quality Management District (May 7, 2021) Certify Final Environmental Assessment and Adopt Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions Program, and Proposed Rule 316 – Fees for Rule 2305, Submit Rule 2305 for Inclusion Into the SIP, and Approve Supporting Budget Actions, *available at* http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2021/2021-May7-027.pdf?sfvrsn=10.

[3] California Planning Roundtable (2008) Deconstructing Jobs-Housing Balance at p. 6, *available at* https://cproundtable.org/static/media/uploads/publications/cpr-jobs-housing.pdf

[4] Cervero, Robert and Duncan, Michael (2006) Which Reduces Vehicle Travel More: Jobs-Housing Balance or Retail-Housing Mixing? Journal of the American Planning Association 72 (4), 475-490, 482, *available at* http://reconnectingamerica.org/assets/Uploads/UTCT-825.pdf.

needed, these carrots are matched by sticks, since the city is not shy about negotiating corporate participation in First Source as a condition of approval for development permits.

Recently, the State of California verified its commitment towards workforce development through the Affordable Housing and High Road Jobs Act of 2022, otherwise known as Assembly Bill No. 2011 ("**AB2011**"). AB2011 amended the Planning and Zoning Law to allow ministerial, by-right approval for projects being built alongside commercial corridors that meet affordability and labor requirements.

The City should consider utilizing local workforce policies and requirements to benefit the local area economically and to mitigate greenhouse gas, improve air quality, and reduce transportation impacts.

## II. THE CITY SHOULD IMPOSE TRAINING REQUIREMENTS FOR THE PROJECT'S CONSTRUCTION ACTIVITIES TO PREVENT COMMUNITY SPREAD OF COVID-19 AND OTHER INFECTIOUS DISEASES

Construction work has been defined as a Lower to High-risk activity for COVID-19 spread by the Occupations Safety and Health Administration. Recently, several construction sites have been identified as sources of community spread of COVID-19. Infections that can be spread during construction work are not limited to COVID-19.

Western Carpenters recommend that the Lead Agency adopt additional requirements to mitigate public health risks from the Project's construction activities. Western Carpenters requests that the Lead Agency require safe on-site construction work practices as well as training and certification for any construction workers on the Project Site.

In particular, based upon Western Carpenters' experience with safe construction site work practices, Western Carpenters recommends that the Lead Agency require that while construction activities are being conducted at the Project Site:

**Construction Site Design:**

- The Project Site will be limited to two controlled entry points.
- Entry points will have temperature screening technicians taking temperature readings when the entry point is open.

- The Temperature Screening Site Plan shows details regarding access to the Project Site and Project Site logistics for conducting temperature screening.
- A 48-hour advance notice will be provided to all trades prior to the first day of temperature screening.
- The perimeter fence directly adjacent to the entry points will be clearly marked indicating the appropriate 6-foot social distancing position for when you approach the screening area. Please reference the Apex temperature screening site map for additional details.
- There will be clear signage posted at the project site directing you through temperature screening.
- Provide hand washing stations throughout the construction site.

**Testing Procedures:**

- The temperature screening being used are non-contact devices.
- Temperature readings will not be recorded.
- Personnel will be screened upon entering the testing center and should only take 1-2 seconds per individual.
- Hard hats, head coverings, sweat, dirt, sunscreen or any other cosmetics must be removed on the forehead before temperature screening.
- Anyone who refuses to submit to a temperature screening or does not answer the health screening questions will be refused access to the Project Site.
- Screening will be performed at both entrances from 5:30 am to 7:30 am.; main gate [ZONE 1] and personnel gate [ZONE 2]
- After 7:30 am only the main gate entrance [ZONE 1] will continue to be used for temperature testing for anybody

gaining entry to the project site such as returning personnel, deliveries, and visitors.

- If the digital thermometer displays a temperature reading above 100.0 degrees Fahrenheit, a second reading will be taken to verify an accurate reading.
- If the second reading confirms an elevated temperature, DHS will instruct the individual that he/she will not be allowed to enter the Project Site. DHS will also instruct the individual to promptly notify his/her supervisor and his/her human resources (HR) representative and provide them with a copy of Annex A.

**Planning**

- Require the development of an Infectious Disease Preparedness and Response Plan that will include basic infection prevention measures (requiring the use of personal protection equipment), policies and procedures for prompt identification and isolation of sick individuals, social distancing (prohibiting gatherings of no more than 10 people including all-hands meetings and all-hands lunches) communication and training and workplace controls that meet standards that may be promulgated by the Center for Disease Control, Occupational Safety and Health Administration, Cal/OSHA, California Department of Public Health or applicable local public health agencies.[5]

The United Brotherhood of Carpenters and Carpenters International Training Fund has developed COVID-19 Training and Certification to ensure that Carpenter union members and apprentices conduct safe work practices. The City should require that all

[5] *See also* The Center for Construction Research and Training, North America's Building Trades Unions (April 27 2020) NABTU and CPWR COVIC-19 Standards for U.S Constructions Sites, *available at* https://www.cpwr.com/sites/default/files/NABTU_CPWR_Standards_COVID-19.pdf; Los Angeles County Department of Public Works (2020) Guidelines for Construction Sites During COVID-19 Pandemic, *available at* https://dpw.lacounty.gov/building-and-safety/docs/pw_guidelines-construction-sites.pdf.

construction workers undergo COVID-19 Training and Certification before being allowed to conduct construction activities at the Project Site.

Western Carpenters has also developed a rigorous Infection Control Risk Assessment ("**ICRA**") training program to ensure it delivers a workforce that understands how to identify and control infection risks by implementing protocols to protect themselves and all others during renovation and construction projects in healthcare environments.[6]

ICRA protocols are intended to contain pathogens, control airflow, and protect patients during the construction, maintenance and renovation of healthcare facilities. ICRA protocols prevent cross contamination, minimizing the risk of secondary infections in patients at hospital facilities.

The City should require the Project to be built using a workforce trained in ICRA protocols.

## III. THE PROJECT WOULD BE APPROVED IN VIOLATION OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

### A. Background Concerning the California Environmental Quality Act

CEQA has two basic purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project. CEQA Guidelines § 15002(a)(1). "Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions *before* they are made. Thus, the EIR 'protects not only the environment but also informed self-government.' [Citation.]" *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553, 564. The EIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return." *Berkeley Keep Jets Over the Bay v. Bd. of Port Comm'rs.* (2001) 91 Cal. App. 4th 1344, 1354 ("*Berkeley Jets")*; *County of Inyo v. Yorty* (1973) 32 Cal. App. 3d 795, 810.

Second, CEQA directs public agencies to avoid or reduce environmental damage when possible by requiring alternatives or mitigation measures. CEQA Guidelines § 15002(a)(2) and (3). *See also, Berkeley Jets,* 91 Cal. App. 4th 1344, 1354; *Citizens of Goleta*

[6] For details concerning Western Carpenters' ICRA training program, *see* .https://www.swmsctf.org/courses/icra-best-practices-in-health-care-construction/

*Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553; *Laurel Heights Improvement Ass'n v. Regents of the University of California* (1988) 47 Cal. 3d 376, 400. The EIR serves to provide public agencies and the public in general with information about the effect that a proposed project is likely to have on the environment and to "identify ways that environmental damage can be avoided or significantly reduced." CEQA Guidelines § 15002(a)(2). If the project has a significant effect on the environment, the agency may approve the project only upon finding that it has "eliminated or substantially lessened all significant effects on the environment where feasible" and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns" specified in CEQA Pub. Res. Code § 21081. CEQA Guidelines § 15092(b)(2)(A–B).

While the courts review an EIR using an "abuse of discretion" standard, "the reviewing court is not to 'uncritically rely on every study or analysis presented by a project proponent in support of its position.' A 'clearly inadequate or unsupported study is entitled to no judicial deference.'" *Berkeley Jets*, 91 Cal. App. 4th 1344, 1355 (emphasis added) (quoting *Laurel Heights,* 47 Cal. 3d at 391, 409 fn. 12). Drawing this line and determining whether the EIR complies with CEQA's information disclosure requirements presents a question of law subject to independent review by the courts. *Sierra Club v. Cnty. of Fresno* (2018) 6 Cal. 5th 502, 515; *Madera Oversight Coalition, Inc. v. County of Madera* (2011) 199 Cal. App. 4th 48, 102, 131. As the court stated in *Berkeley Jets*, 91 Cal. App. 4th at 1355:

> A prejudicial abuse of discretion occurs "if the failure to include relevant information precludes informed decision-making and informed public participation, thereby thwarting the statutory goals of the EIR process.

"The preparation and circulation of an EIR is more than a set of technical hurdles for agencies and developers to overcome. The EIR's function is to ensure that government officials who decide to build or approve a project do so with a full understanding of the environmental consequences and, equally important, that the public is assured those consequences have been taken into account. [Citation.] For the EIR to serve these goals it must present information so that the foreseeable impacts of pursuing the project can be understood and weighed, and the public must be given an adequate opportunity to comment on that presentation before the decision to go forward is made." *Communities for a Better Environment v. Richmond* (2010) 184 Cal. App. 4th 70, 80 (quoting *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal. 4th 412, 449–450).

Where the Lead Agency chooses to dispose of CEQA by asserting a CEQA exemption, it has a duty to support its CEQA exemption findings by substantial evidence, including evidence that there are no applicable exceptions to exemptions. This duty is imposed by CEQA and related case law. Guidelines § 15020 ["The Lead Agency shall not knowingly release a deficient document hoping that public comments will correct defects in the document."]; *see also, Citizens for Environmental Responsibility v. State ex rel. 14th Dist. Ag. Assn.* (2015) 242 Cal.App.4th 555, 568 ["The lead agency has the burden to demonstrate that a project falls within a categorical exemption and the agency's determination must be supported by substantial evidence"]; *Association for Protection etc. Values v. City of Ukiah* (1991) 2 Cal.App.4th 720, 732 [agency is required to consider exemption exceptions "where there is some information or evidence in the record that the project might have a significant impact."]

The duty to support CEQA (and/or exemption) findings with substantial evidence is also required by the Code of Civil Procedure and case law on administrative or traditional writs. Under Code of Civil Procedure ("CCP") § 1094.5(b), an abuse of discretion is established if the decision is not supported by the findings, or the findings are not supported by the evidence. CCP § 1094.5(b). In *Topanga Assn. for a Scenic Community v. County of Los Angeles* (1974) 11 Cal. 3d 506, 515 ("*Topanga*"), our Supreme Court held that "implicit in [Code of Civil Procedure] section 1094.5 is a requirement that the agency which renders the challenged decision must set forth findings to bridge the analytic gap between the raw evidence and ultimate decision or order." The agency's findings may "be determined to be sufficient if a court 'has no trouble under the circumstances discerning the analytic route the administrative agency traveled from evidence to action.'" *West Chandler Blvd. Neighborhood Ass'n vs. City of Los Angeles* (2011) 198 Cal.App.4th 1506, 1521- 1522. However, "mere conclusory findings without reference to the record are inadequate." *Id.* at 1521 (finding city council findings conclusory, violating *Topanga*).

Further, CEQA exemptions must be narrowly construed to accomplish CEQA's environmental objectives. *California Farm Bureau Federation v. California Wildlife Conservation Bd.* (2006) 143 Cal.App.4th 173, 187 ("*California Farm*"); *Save Our Carmel River v. Monterey Peninsula Water Management Dist.* (2006) 141 Cal.App.4th 677, 697 ("These rules ensure that in all but the clearest cases of categorical exemptions, a project will be subject to some level of environmental review.")

Finally, CEQA procedures reflect a preference for resolving doubts in favor of environmental review. *See,* Pub. Res. Code § 21080(c) [dispose of EIR only if "there is no substantial evidence, in light of the *whole record* before the lead agency, that the project *may* have a significant effect on the environment" or "revisions in the project …. Would avoid the effects or mitigate the effets to a point where *clearly* no significant effect on the environment would occur, *and* …." Emph. added.]; Guidelines §§ 15061(b)(3) [common sense exemption only "where it can be seen with certainty …."]; 15063(b)(1) [prepare an EIR "if he agency determines that there is substantial evidence that *any* aspect of the project, either *individually* or *cumulatively, may* cause a significant effect on the environment, *regardless* of whether the overall effect of the project is adverse or beneficial"]; 15064(h) [need to consider cumulative impacts of past, other current and "probable future" projects]; 15070 [prepare a negative declaration only if "no substantial evidence, *in light of the whole record* before the agency, that the project *may* have a significant effect on the environment," or project "revisions would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, *and* (2) there is no substantial evidence, in light of the whole record before the project, that the project as revised *may* have a significant effect on the environment" emph. added]; *No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 83-84 [interpret "significant impacts" so as "to afford the fullest possible protection"].

## IV. THE DRAFT EIR IS LEGALLY INADEQUATE AS IT OMITS CRITICAL INFORMATION.

The Draft EIR suffers from several procedural flaws and omissions. These flaws and omissions preclude good faith disclosures, meaningful information and public participation by failing to provide accurate information about the Project's scope and resultant impacts. In addition, the EIR is based on flawed and erroneous baseline assumptions, and also its findings are not supported by any credible or substantial evidence. As such, the Draft EIR is legally inadequate, as detailed below.

### A. The Project Description Is Not Accurate, Stable or Finite to Enable Meaningful Evaluation of Project Impacts.

The Draft EIR indicates the following discretionary approvals needed for the Project:

> The Project would require adoption by the Long Beach Planning Commission/City Council and the following discretionary approvals:

> • General Plan Amendment/Map changing Community Commercial (CC) Land Use District to Land Use Element (LUE) Neighborhood Serving Center or Corridor (NSCModerate) Placetype;
> • Zoning Code Amendment/Map Change from Community Commercial Automobile-Oriented (CCA) Zoning District to Mixed Use (MU-3) Zoning District;
> • Conditional Use Permit for the Special Group Residence use for the dormitory use;
> • Site Plan Review for the Adaptive Reuse of the building;
> • Building Permits for the change in use of the building;
> • Certification of the EIR for the Project;
> • A street improvement encroachment permit from Caltrans for activities within the Pacific Coast Highway right-of-way; and
> • Other ministerial approvals as needed and as may be required.

(DEIR, p. ES-3.)

And yet, the record in this case reveals that *more* discretionary actions are needed, and the City improperly discounts or omits some of those. For example, per the City's Development Bureau's letter, the Project's *basement encroaches* into the *highway* and – if used by the Project – requires a street vacation:

> • Based on the plans, it appears that the **existing basement encroaches** into the **Pacific Coast Highway sidewalk**. The applicant shall confirm that this is the case. If it does indeed encroach, Public Works has no record of a vacation of area below Pacific Coast Highway to allow for the subterranean encroachment. Provide documentation of **this vacation**. If one does not exist, the applicant **will need to process** the subterranean **vacation**.

(**Exhibit D**, p. 1, emph. added [November 18, 2022 City of Long Beach Letter].)

The EIR's omission of the vacation issue is critical since there are several requirements for street vacation that need to be met by the Project applicant before such vacation can be deemed proper. Streets and Highway ("**S&H**") Code defines "vacation" as "the complete or partial abandonment or termination of the public right to use a street, highway, or public service easement." (S&H Code § 8309.) The code defines a "street" and "highway" as "all **or part of**, **or any right in**, a state

highway **or other public** highway, road, **street**, avenue, **alley**, lane, driveway, place, court, trail, **or other public right-of-way or easement**, or purported public street or highway, and rights connected therewith, including, **but not limited to**, restrictions of access or abutters' rights, **sloping easements**, or **other incidents** to a **street** or highway." (S&H Code § 8308, emph. added.)

S&H also provides that "[t]his part shall be **liberally** construed in order to effectuate its purposes." (*Id.* § 8310, emph. added.)

In turn, the Long Beach Municipal Code section 20.08.170 requires the following findings to be made for street vacation before one can be approved:

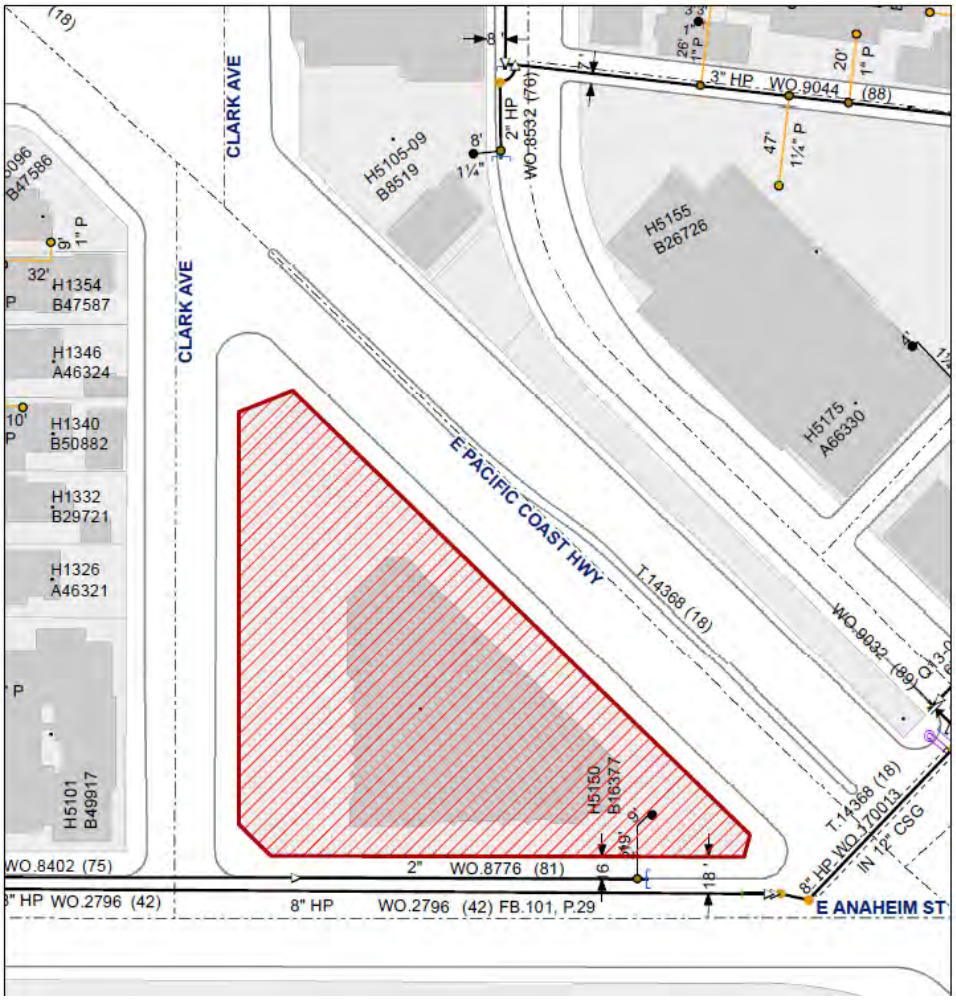
> C. In evaluating a right-of-way vacation, the City needs to make the following findings:
>
> 1. The City right-of-way *will not* be needed for *present* or *future* public right-of-way purposes.
>
> 2. The *continued access* to any City or public utility services and improvements will be *properly reserved.*
>
> 3. The right-of-way vacation is consistent with *goals* and *policies* of the General Plan referencing specific applicable provisions.

(Long Beach Municipal Code, emph. added.[7])

But this finding was not made by the City or analyzed in the EIR. Neither can such a finding be reasonably made. Specifically, per the City's own comments, the Project may have significant traffic impacts and the General Plan requires street *dedications* to widen the adjacent streets from 70 feet to 80 feet. (**Exhibit E** [7/1/2022 City of Long Beach Pre-Development Meeting Minutes].) The potential of traffic impacts and the need of street-widening is also critical since the Project proposes to bring in 593 people to the Project site and potentially 593 cars and related daily trips, the Project is surrounded by 3 streets, the Project site is triangular in shape, it is located near residential areas, in an earthquake and liquefaction zone, and may also have or cause fire and other hazards requiring adequate street infrastructure and evacuation possibility, which will only be exacerbated if the City has no ability to widen the streets.

[7] See available at: https://library.municode.com/ca/long_beach/codes/municipal_code?nodeId=TIT20SU_CH20.08DEST_20.08.170RI-WVA

In addition, the Project's proposed transient residential uses – unlike the current office uses of the Project site – will require resizing of underground utilities, which is further complicated by the isolated location of the Project from other uses, as shown on the screenshot below, and will require street improvements and changes:




As the City concedes:

> • Long Beach Energy Resources currently maintains an active gas service line feeding the existing building on the lot that will **need** to be **upsized/renewed** if **loads increase** due to the conversion. See GIS map (attached) for approximate location of the service.
>
> • If additional new gas service or renewal of existing service is needed for the proposed conversion, Long Beach Energy Resources will need to review and approve the location for the meter and **buried service line** to be installed. Please consider that the routing of the buried gas service line

> and clearance requirements for meter may impact the design of the development.

(**Exhibit D,** p. 2, emph. added.)

Furthermore, the City's documents show that there are current plans by Caltrans for street modifications near the Project, including on Pacific Coast Highway. (**Exhibit S,** p. 6.)

As such, the EIR's omission of this vacation issue is prejudicial in light of the Project's traffic and utilities impacts, and the associated risks to the surrounding environment.

**Second**, the Draft EIR omits the Conditional Use Permit required for open space, lot coverge, and most importantly *parking reduction* and the associated impacts of the Project apparently improperly relying on AB 2097 for parking reduction. It claims that "AB 2097 applies to this property site which eliminates the requirement for minimum parking requirements for the change in use." (**Exhibit D,** p. 1.)

To be clear, unlike the enumerated discretionary approvals listed in the Draft EIR (DEIR, p. ES-3) and quoted above, which lists only *one* conditional use permit, the Project Applicant has initially sought *two* conditional use permits, one of which was for *parking reduction* and other requirements that would be changed, such as open space. (**Exhibit F** [Project Applicant's invoice showing payment for *two* (2) CUPs].)

And the Project Applicant himself conceded that the Project has an issue with parking that needs to be addressed, stating:

> **In addition** to the **17 surface being removed**, there will be a **net loss** of **35 parking spaces** in the **underground structure**. Regarding parking, we would also like the City to opine on whether/how AB 2097 would apply to the project. This bill will go into effect in January and may offer some relief from parking requirements for the project.

(**Exhibit V,** p. 4 [October 26, 2023 email from Project Applicant, which includes the quoted October 20, 2022 Email from Project Applicant].)

Per the City's own records, the Project includes Adaptive Reuse to address code deficiencies (open space, parking, density). (**Exhibit W** [November 3, 2022 Email between City staff].)

And later, the Project Applicant also conceded that the Project may not necessarily be eligible for AB 2097 and requested the City's opinion on it, noting: "The project site is eligible for AB2097 under the 2016 SCAG map, but not LBTransit map. Have we had

a determinate on which map we will use for the parking exemption allowance?" (*Ibid.*)

But rather than address this issue meaningfully, the City swept it under the rug, excluded the additional Adaptive Reuse CUP, and summarily claimed that AB 2097 applies to the Project without further elaboration. Not so.

In particular, AB 2097 provides:

> SEC. 2**. Section 65863.2** is added to the Government Code, to read:
>
> **65863.2.** (a) A public agency shall **not** impose or enforce any minimum automobile parking requirement on a **residential**, commercial, or other development **project if** the project is located within **one-half mile** of public transit.
>
> (b) **Notwithstanding** subdivision (a), a city, county, or city and county **may** impose or enforce minimum automobile parking requirements on a project that is located within **one-half mile** of public transit **if** the public agency makes **written findings**, within **30 days** of the receipt of a completed application, that not imposing or enforcing minimum automobile parking requirements on the development would have a **substantially negative** impact, supported by a **preponderance** of the **evidence** in the record, on **any** of the following:
>
> (1) The city's, county's, or city and county's ability to meet its share of the regional housing need in accordance with Section 65584 for low- and very low income households.
>
> (2) The city's, county's, or city and county's ability to meet any special housing needs for the elderly or persons with disabilities identified in the analysis required pursuant to paragraph (7) of subdivision (a) of Section 65583.
>
> (3) Existing residential or commercial parking within one-half mile of the housing development project.
>
> (c) For a housing development project, subdivision (b) shall not apply if the housing development project satisfies any of the following:
>
> (1) The development dedicates a minimum of **20 percent** of the **total number** of **housing** units to very low, low-, or moderate-income households, students, the elderly, or persons with disabilities.
>
> (2) The development contains fewer than 20 housing units.

> (3) The development is subject to parking reductions based on the provisions of any other applicable law.
>
> (d) Notwithstanding subdivision (a), an event center shall provide parking, as required by local ordinance, for employees and other workers.
>
> (e) For purposes of this section:
>
> (1) "Housing development project" means a housing development project as defined in paragraph (2) of subdivision (h) of Section 65589.5.
>
> (2) "Low- and very low income households" means the same as "lower income households" as defined in Section 50079.5 of the Health and Safety Code.
>
> (3) "Moderate-income households" means the same as "persons and families of moderate income," as defined in Section 50093 of the Health and Safety Code.
>
> (4) "Public agency" means the state or any state agency, board, or commission, any city, county, city and county, including charter cities, or special district, or any agency, board, or commission of the city, county, city and county, special district, joint powers authority, or other political subdivision.
>
> (5) "Public transit" means a major transit stop as defined in Section 21155 of the Public Resources Code.
>
> (6) "**Project**" does not include a project where any portion is designated for use as a hotel, motel, bed and breakfast inn, **or other transient lodging**, except where a portion of a housing development project is designated for use as a residential hotel, as defined in Section 50519 of the Health and Safety Code.

Based on the above-noted, the Project clearly does not qualify for a parking exemption or reduction because:

1) The Project here *is* a *transient lodging* – it is a dormitory – and hence, an exception from AB 2097;
2) The Project here is *not* within ½ mile of transit as defined by AB 2097 and PRC referenced therein; and
3) The Project here does *not* provide *any* affordable housing to eliminate the City's possibility to find special adverse impacts on public health and safety.

That dormitories are a transient lodging facility is confirmed by various agencies and cases. For example, City of Los Angeles requires a checklist for transient facilities, which lists dormitories as an example of those. (**Exhibit G**[8] [City of LA Supplemental Plan Review Checklist for Transient Lodging Rooms].) Various courts have considered dormitories as transient lodging. (*Carolyn v. Orange Park Community Assn.* (2009) 177 Cal.App.4th 1090, 1100 [" 'transient lodging' (like boarding houses, dormitories, resorts, hotels, motels, and inns) and therefore qualify as a public accommodation in its entirety"]; *San Diego Gas & Electric Co. v. Superior Court* (1996) 13 Cal.4th 893, 922 ["In that decision the commission also determined that the term 'residential customer' in section 739 included single-family houses, apartments, condominiums, and mobilehomes, but excluded transient trailerparks, hotels and motels, and other places of temporary occupancy such as hospitals and college dormitories."])

Yet, the Draft EIR is silent on this issue altogether and improperly presumes that the student dormitory here is covered by AB 2097.

Moreover, there is no showing that the Project is within a ½ mile of a qualifying transit stop or that it provide affordable units. (DEIR, p. 4.12-1—4.12-2; 4.12-9.) The Draft EIR simply claims that the Project is within 0.5 miles of a public transit stop. (DEIR, p. 4.12-9 or 4.12-11.) It notes: "Alternative 2 would be subject to AB 2097 parking requirements and would not enforce minimum parking requirements as the Project Site is located within one-half mile of **public transit options including LBT** bus service and the **CSULB Beachside shuttle**." (DEIR, p. ES-18, emph. added.) But LBT is *not* a qualifying major transit stop by itself. AB 2097 defines "public transit" as: "(5) "Public transit" means a *major transit* stop as defined in Section 21155 of the Public Resources Code." Under the referenced PRC § 21155(b): "A major transit stop is as defined in Section 21064.3, except that, for purposes of this section, it also includes *major transit stops* that are included in the applicable regional transportation plan." And, under Public Resources Code § 21064.3:

> "Major transit stop" means a site containing any of the following:
>
> (a) An **existing rail** or **bus rapid transit** station.
>
> (b) A **ferry terminal** served by either a bus or rail transit service.

[8] Also available here: https://ladbs.org/docs/default-source/forms/plan-check-2017/supplemental-plan-review-checklist-no-6---transient-lodging.pdf?sfvrsn=b881f953_6

> (c) The **intersection** of **two** or **more major bus routes** with a **frequency** of service interval of **20 minutes or less** during the morning and afternoon **peak** commute periods.

(Emph. added.)

There is no indication that the LBT here fits the definition of either PRC sections 21155 or 21064.3, including the requirement that there be at least one other intersecting bus or the requirement of the 20-minute interval frequency of service. To the contrary, based on the Draft EIR's descriptions, the LBT buses appear to be traveling only east/west – i.e., do not intersect.

As for the CSULB shuttle, there is no clear record or assurance of any *existing* CSULB Beachside shuttle that serves or will serve the Project site.

Another critical consideration that the DEIR fails to acknowledge is that most student dormitories are located *adjacent* to universities or colleges. This Project is, however, different. As the traffic engineer commented for this Project: "• Land use code 226 (Off-Campus Student Apartment [Mid-Rise]) provides trip rates for the "Adjacent to Campus" land use subcategory, which does not apply to the Project as it is over **0.5 miles from CSULB**." (**Exhibit J** [Traffic Engineer's comments/Planner to DB Applicant Email of March 27, 2024].) As such, the Project students will have to use their cars to be able to get to the University and also address their living needs and necessities, such as shop for food.

Since the Draft EIR fails to provide an accurate Project description of all the discretionary approvals and changes the Project seeks and is based on flawed assumptions, the Draft EIR's project description is inaccurate, incomplete, and non-finite, as a matter of law.

**Third,** despite our office's California Public Records Act ("**PRA**") requests and the City's productions as of the date of this comment letter, we have not found the Project's proposed plans and precise changes to the interior and exterior of the Project site. Indeed, the Draft EIR concedes that the Project plans are **not yet** finalized:

> "Project plans have **not yet been** developed to identify specific Project features that would support reductions in electrical usage, adjustments were made to the California Emissions Estimator Model (CalEEMod) modeling to represent that the Project would comply with the 2022 California Building Standards Code (2022 CCR Title 24)."

> (DEIR, p. 4.6-10, emph. added.)

For this reason, too, the Draft EIR fails to provide an accurate complete and finite project description to allow meaningful impact analysis.

Recently, a similar project and its EIR were struck down by the court for an inaccurate project description. The court stated:

> In this case, Millennium's failure to present any concrete project proposal, instead choosing concepts and "impact envelopes" rather than an accurate, stable, and finite project, was an obstacle to informed public participation, "even if we cannot say such input would have changed the project ultimately selected and approved." (*Washoe Meadows*, *supra*, 17 Cal.App.5th at p. 290, 225 Cal.Rptr.3d 238.) Accordingly, the trial court correctly invalidated the EIR and granted the CEQA writ petition.

*Stopthemillenniumhollywood.com v. City of Los Angeles* (2019) 39 Cal.App.5th 1, 20

The Draft EIR here suffers from the flaws similar to those in *StoptheMillenniumHollywood.com,* and is legally flawed and inadequate, as a matter of law.

### B. The Draft EIR's Alternatives Are Legally Inadequate and Impermissibly Leave Out Feasible Alternatives.

The Draft EIR's alternatives are legally inadequate as they omit feasible alternatives, reject alternatives by legally misconstruing CEQA's feasibility requirement, or simply provide legally and factually inaccurate descriptions of alternatives.

This, in part, stems from the narrowly-drawn project objectives, which appear to improperly simply mirror the desired Project rather than provide options to devise an alternative with less environmental impacts, as CEQA requires.

Specifically, the Draft EIR provides the following *objectives*:

> • Fulfill the city's **housing** goals by improving access to high quality **housing** and **expanding student housing** opportunities in proximity to open space, public transportation, and a wide range of services and goods.
> • Promote **sustainable development** through the **adaptive reuse** of an existing seven-story office building into a **593-bed student** housing development that includes supportive uses and amenities that promote interaction and communication between students such as large lounge areas and active outdoor recreational areas.

> • Promote **pedestrian** and **bicycle safety** and **access** to the Project Site by engaging with the existing dedicated bike throughfare along Pacific Coast Highway with bicycle parking and lockers on the subterranean parking level 1.
> • **Increase access** to **alternative** transportation options on the Project Site including **zip cars** and **electric scooters**. Increase **accessibility** to the Project Site through a **dedicated ride share** pick-up and drop-off locations along East **Anaheim Street**.
> • Provide a development that complements and improves the **visual character** of the area by connecting with the surrounding urban environment through a high level of architectural design, including light materiality, landscape features, and active ground floor uses with open space amenities.
> • Provide **safe student housing** through terraced landscape buffers and a security fence and gate.
> • Create a development with **high quality design** that supports environmental sustainability through energy efficiency, **water conservation**, and the **reduction** of **greenhouse gas emissions** through such features as **solar photovoltaic** power, electric vehicle charging stations, energy-efficient appliances, water efficient plumbing fixtures and fittings, and water-efficient landscaping.

(DEIR, p. ES-2—3, emph. added.)

The above-noted objectives do not explain *how* a *student dormitory* increases *housing* in Long Beach or *why* does the Project necessarily need to increase *housing* or *why* can't it simply add more commercial uses or change the type of commercial uses at the Project Site. As yet another evidence of an attempt to draft narrow objectives to precisely mirror the desired project is the EIR's reference to *593* beds in the Project objectives.

Notably, based on these narrowly-drafted objectives and for the noted reasons, the City rejects *two* alternatives of **New Office Tenant Alternative** and **Fewer Unit Alternative** and claims that those are infeasible as they do not allow development of the site with student housing to meet housing demands. (DEIR, p. 5-86.)

In the words of the Court, which found improper alternatives and improper objectives in an analogous situation:

> In taking this artificially narrow approach for describing the project objectives, the County ensured that the results of its alternatives analysis would be a foregone conclusion. It also, as a result, transformed the EIR's

> alternatives section—often described as part of the "core of the EIR" (*In re Bay-Delta, supra*, 43 Cal.4th at p. 1162)—into an empty formality.

(*We Advocate Through Environmental Review v. County of Siskiyou* (2022) 78 Cal.App.5th 683, 692.)

As such, the EIR is defective for relying on *improper objectives* as described above.

And, as a result and derivatively, the EIR is also flawed for proposing a legally inadequate set or alternatives, which are, in addition, legally flawed by themselves.

### 1. No Build/No Project - Alternative 1

The Draft EIR's description of the No Build/No Project alternative includes:

> "The existing **office building** is approximately **120,000 sf,** of which **109,600 sf** is currently **leased** (as of January 2024). The western side of the Project Site adjacent to Clark Avenue includes a surface parking lot, driveway, and landscaping. There is signage for the existing office building on the northern corner of the Project Site along Pacific Coast Highway."

(DEIR, p. ES-18, emph. added.)

The Draft EIR does not specify what kind of offices or commercial uses are present on site. The communications we have obtained from the City indicate that those commercial uses may be medical offices or may be general uses. The Draft EIR in a different section briefly describes the Project site as a medical office site. (Draft EIR, p. 4.9-3 ["medical office building"].) But the information on Internet shows that the Project site is advertised for lease space unrelated to medical offices, and the only medical office space we could find at the Project Site was pro-health medical services at Suite #500. (**Exhibits H-I** [Printouts from website re 5150 Pacific Coast Hwy, Long Beach, CA].)

As the City's own communications confirm (**Exhibit J** [City email of March 27, 2024 to DB Applicant re types of uses, i.e., medical or general offices] & **Exhibit K** [City email of Feb. 14, 2023 asking: "Do you know the current occupancy of the building? Empty, half full, full? This could play a substantial role in determining the CEQA baseline, and in turn, the feasibility of clearing CEQA for the project with an IS/MND or a focused EIR. Total building area is approximately [sic.] 120,000 sf., and 109,600 sf. is currently leased."]), it is important to verify the types of uses on the Project site in order to accurately determine the environmental impacts of the *proposed* Project and alternatives and their impacts as compared to such uses.

Since the EIR fails to identify this critical information about the types of uses at the Project Site, it fails to serve its informational goal by providing the information on the No Build/No Project Alternative.

In addition, the EIR fails to specify the number of subterranean or surface parking spaces that exist on the Project site, although all other Alternatives propose to remove the surface parking and rely on the subterranean parking only. Notably, as noted earlier, per the City's records, 17 surface parking spaces and also 34 subterranean parking spaces will be removed by the Project.

As shown in the Alternatives below, the Draft EIR provides a different count of parking stalls per Alternatives 2-4, even though all of those alternatives utilize *only* the subterranean three-level parking and therefore cannot be increased. Notably, even with the lower parking space number mentioned in the Draft EIR for the Project, some of the provided parking will be *tandem,* i.e., back-to-back:

> The Project would provide **0.61 spaces** per bed, which would result in **364 proposed vehicle parking stalls**. The Project would continue to encourage the use of walking, cycling, and transit by maintaining existing pedestrian, bicycle, and transit access to the Project Site. The Project would also provide **150 new parking spaces** and a **rideshare** drop-off and drop-off area, which would further encourage the use of cycling and carpooling.
>
> (DEIR, p. 4.12-10, emph. added.)

The Draft EIR also provides:

> The Project would include **three levels** of **subterranean** vehicular parking, for a total of 133,163 SF. There would be a total of **364 parking stalls** (**218 standard** spaces, **19 accessible** spaces, **127 tandem spaces**). The Project would also include **150 bicycle parking spaces** on the **first floor** of subterranean parking. Outdoor amenities would be located throughout the Project Site, including a fitness turf, wading pool, shade structure, and flexible lawn east of Clark Avenue, and an outdoor dining patio west of the Pacific Coast Highway. The exterior of the building would remain the same, with the addition of decorative window film and improvements to the ground level entryways; however, the majority of the adaptive reuse would involve tenant improvements to the interior of the building.

(DEIR, p. 5-1, emph. added.)

As evident from the above two quoted sections, the EIR's described 150 new parking spaces of Project are not *vehicle parking* spaces, but rather *bicycle* spaces. But the EIR fails to clarify this detail, thereby providing a misleading description of the Project against which the Alternatives are compared.

Based on the above-mentioned, it is reasonably foreseeable that parking stalls within the 3-level subterranean parking under some Alternatives that *exceed* the 364 parking stalls will include *even more* tandem spaces, which is not duly disclosed.

### 2. Market Rate Housing - Alternative 2

The Draft EIR's *second* Market Rate Housing Alternative is also inaccurately described. It offers **149 units**, comprised of **65 one-bedroom**, **44 two-bedroom**, **40 three-bedroom** apartments, resulting in approximately **273 bedrooms total**. Among other amenities, a dog park, outdoor BBQ with picnic tables, a flexible lawn with artificial turf, an outdoor patio, and an outdoor pool would be provided. It is unclear if the outdoor pool will be a shallow wading pool as with the Student housing or a deep pool.

Critically, the City mentions that AB 2097 parking requirement reductions will apply and the City would not enforce minimum parking requirements. This claim is inaccurate for several reasons. First, for the same reasons noted in Section IV.A, *supra,* AB 2097 does not apply to this Project. Second, the City has the authority and should enforce parking requirements and make specific adverse impact findings since Alternative 2 offers no affordable units at all.

Relying on AB 2097, Alternative 2 will provide only **273 parking** spaces for **273 units**. Such reliance, again, is misplaced and misleading to decisionmakers and the public.

### 3. Senior Living and Student Housing - Alternative 3

The Draft EIR's *third* Alternative is the Senior Living and Senior Housing – where the Draft EIR allocates the *first* floor for *administrative* offices and *amenities*, the *second-third* floors are provided for *senior housing* (50 one-bedroom units), and *third* to *seventh* floors will be *student housing* of 395 beds – 125 one-bedroom, 75 two-bedroom, and 40 three-bedroom units, resulting in a total of 243 dwelling units and 395 beds of student housing. This alternative provides one shared kitchen and lounge on *each floor* from the *third* to *seventh* floors, but no pool.

Here, too, the Draft EIR provides that AB 2097 applies, which is incorrect for reasons stated in Section IV.A, *supra.*

Improperly relying on AB 2097, Alternative 3 would provide a total of **445 parking** spaces to serve the senior living uses (50 spaces for 50 one-bedroom units and 395 spaces for student housing). (DEIR, p. ES-18.) As noted earlier, it follows that *either* all of the parking in excess of 344 will be *tandem* parking or a large part of the 445 parking spaces will be bicycle parking, rather than vehicle parking. The Draft EIR fails to provide those details on this Alternative, along with the feasibility of fitting 445 parking spaces in the 3 levels of subterranean parking where the Project plans to reduce parking by 34 spaces.

Also, as with other alternatives, the Draft EIR here fails to consider parking for employees of the student housing (commercial) portion.

### 4. Student Housing and Office Space – Alternative 4

Alternative 4 would adaptively reuse the building and develop student housing and office space, with separate entrances and elevators for each. Outdoor amenities would include an outdoor dining patio, patio, and fitness turf wit equipment, but no outdoor pool.

The second to fifth floor would provide 240 dwelling units comprised of 125 one-bedroom, 75 two-bedroom, and 40 three-bedroom units, resulting in the 395 beds overall for student housing. The sixth-seventh floor would provide 34,300 sf. of office space, which – purportedly per SCAG's employment summary report – would require 440 average sf per employee, resulting in approximately 77 office employees.

Alternative 4 – as all other Alternatives 1-3 – would maintain the existing three levels of subterranean parking.

The EIR also inaccurately provides that Alternative 4 would be subject AB 2097 parking requirements and thereby would provide 1 parking spot per student (395 spaces) and 77 spaces for the office component, i.e., **472 parking spaces** to serve both uses. (DEIR, p. ES-19.) For reasons mentioned for Alternative 3, *supra,* the Draft EIR fails to provide accurate information or feasibility of fitting 472 parking spaces in an enclosed 3-level subterranean parking or describe which portion of the noted 472 parking spaces will be vehicular.

In sum, the EIR fails to provide the *feasibility* of all Alternatives 2-4 and their parking allocation; it also fails to accurately inform on the number, configuration, and type of parking spaces that are possible to fit in an enclosed 3-level subterranean parking. This missing information is prejudicial and makes the EIR's discussion of the range of

Alternatives legally inadequate, misleading, and unhelpful to make an informed decision.

### 5. The EIR Fails to Include an Adequate Range of Alternatives, Including a Reduced Alternative to the Project.

As our Supreme Court noted:

> The process of selecting the alternatives to be included in the EIR begins with the establishment of project objectives by the lead agency. "A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings.... The statement of objectives should include the underlying purpose of the project." (Cal.Code Regs., tit. 14, § 15124, subd. (b).)

*(In re Bay-Delta etc.* (2008) 43 Cal.4th 1143, 1163 ["*In re Bay-Delta*"].)

"Objectives chosen should be broad enough to permit a reasonable range of alternatives. (Cit. omit.)" (*California Oak Foundation v. Regents of University of California* (2010) 188 Cal.App.4th 227, 273–274.)

At the same time, an EIR should be found legally inadequate if it contains an overly narrow range of alternatives. (*Watsonville Pilots Ass'n v. City of Watsonville* (2010) 183 Cal.App.4th 1059, 1087 ("*Watsonville*") [not considering a reduced development alternative was error].) "The purpose of an EIR is not to identify alleged alternatives . . . so that these alleged alternatives may be readily eliminated." *Id.* EIR's failure to analyze a reduced alternative is a CEQA violation. (*Id.* at 1090.)

The Draft EIR here does not include a reduced alternative to the Project. Specifically, the Project proposes 149 student suites for 593 beds, and 364 parking stalls. (DEIR, p. 2-1 & 5-1.) A reduced alternative could be a different configuration of student suites to result in *less* number of beds. But there is no such Alternative provided.

Instead, as listed above, the fewer student housing and beds provided in Alternatives 3-4 necessarily *also* include either *senior housing* or *commercial office* space.

Notably, while the Draft EIR mentions a *Fewer Unit* alternative, it *rejects* that alternative as infeasible and thereby fails to analyze it either. (DEIR, p. 5-86.) But, as mentioned in *Watsonville,* alternatives are not to be listed in order to be rejected as infeasible. As discussed in Section IV.B.6, *infra,* the infeasibility argument in the Draft EIR is also legally flawed and unavailing.

As such, the EIR's alternatives' analysis is legally flawed as it fails to include *all* feasible alternatives, including the required *reduced density* alternative.

### 6. The EIR's Rejection of Two Alternatives as Infeasible Is Meritless.

The EIR's discussion of alternatives is also lacking and inadequate. As courts noted:

> The discussion must 'focus on alternatives capable of eliminating any significant adverse environmental effects or reducing them to a level of insignificance, **even if** these alternatives would **impede** to some degree the **attainment** of the **project objectives**, or would be **more costly**.' (Guidelines, § 15126[9], subd. (d)(3).)" (*Kings County Farm Bureau v. City of Hanford, supra,* 221 Cal.App.3d at p. 733, 270 Cal.Rptr. 650.)
>
> This discussion of alternatives must be "meaningful" and must "contain analysis sufficient to allow informed decision making." (*Laurel Heights, supra,* 47 Cal.3d at pp. 403–404, 253 Cal.Rptr. 426, 764 P.2d 278.) The decision to require mitigation measures does not remove the need to consider project alternatives in the EIR. (*Id.* at pp. 401–402, 253 Cal.Rptr. 426, 764 P.2d 278.) Because the FEIR's discussion of alternatives is "lacking in any concrete information or analysis," it fails to meet this standard.

(*San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 735, emph. added.)

Also, CEQA does not require that Alternatives achieve *all* of the Project's objectives. Instead, it is sufficient that Alternatives achieve *most* of the Project's objectives – assuming, of course, those objectives are also neither too broad nor too narrow, as discussed above. (CEQA Guidelines § 15126.6(a)&(c).)

Here, the Draft EIR rejects two alternatives for allegedly *infeasibility* or *failure to meet* the Project's *housing* objective: (1) New Office Tenant Alternative; and (2) Fewer Unit Alternative. (DEIR, p. 5-86.) The Draft EIR's reasoning for finding those alternatives are infeasible is that those alternatives do not meet the City's housing goals. For example, for the rejected *New Tenant* Alternative, the Draft EIR provides:

> Redeveloping the Project Site with new office tenants was **considered**. This **alternative** would **not** meet the Project **objectives**, specifically to adaptively reuse an existing underutilized office building with a **student residential building** that would help the City **meet** its **RHNA goal** and

[9] Now, Guidelines § 15126.6.

> **goals** and **policies outlined** in the City of Long Beach **General Plan**. New office tenants would not address the City's **Housing Element goals** and **increase housing opportunities** that would address **unique housing** needs for **special needs residents** such as **students**. Improving the existing Project Site with new office tenants would not fulfill the city's **housing goals** by expanding student housing opportunities in proximity to open space, public transportation, and a wide range of services and goods. Taking these factors into consideration, an office development **alternative** was **not** carried forward for **further analysis**.
>
> (DEIR, p. 5-86, emph.. added.)

Similarly, for the *Fewer Unit* Alternative, the Draft EIR provides:

> Redeveloping the Project Site with fewer residential units was considered. This alternative would **not** help to meet the Project's objectives to the **same degree as** the Project. By providing **fewer units** and **beds**, the Project Site would become **underutilized** and would **not** allow the City to reach its **RHNA goals** at the same time **as** the Project **would**. Additionally, **fewer beds** would result in **less housing** in close proximity to open space, public transportation, and a wide range of services and goods in the City. Taking these factors into consideration, a **residential** development alternative was **not carried** forward for **further analysis**.
>
> (DEIR, p. 5-86, emph. added.)

Notably, the Draft EIR fails to explain *how* a student dormitory meets the RHNA goals. And, for a reason. The RHNA is about *housing – not* transient dormitories. Specifically, nowhere in the Gov. Code § 65584, which regulates the housing element of the General Plan, does it mention about dormitories or student housing.

Also, that the proposed alternative would not meet the Project's objectives "to the same degree as the Project" does not determine whether it is feasible or not. As the Draft EIR notes:

> … CEQA requires that alternatives evaluated in an EIR be potentially feasible. CEQA **defines feasibility** as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors" (Pub. Res. Code Section 21061.1). Section 15126.6(f)(1) of the CEQA Guidelines identifies the factors to be considered when addressing the feasibility of alternatives, including **site suitability**, economic **viability**, availability of **infrastructure**, general plan **consistency**, other plans or

> regulatory **limitations**, jurisdictional **boundaries**, and whether the proponent can reasonably acquire, control, or otherwise have access to an **alternative site**.

(DEIR, p. 5-85, emph. added.)

Notably, nowhere in the City's definition or restatement of CEQA, does CEQA define feasibility as the ability to meet the Project objectives to the "same objectives" or to meet *all* of the Project objectives, as the EIR's above-noted two examples of Alternatives note.

Instead, alternatives "shall include those that could feasibly accomplish *most* of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects." (CEQA Guidelines § 15126.6(a)&(c), emph. added) "[T]he discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project…." (CEQA Guidelines § 15126.6(b).)

Also, as described by the Court in an analogous situation:

> Lastly, Appellants contend that all the County's stated reasons fail to "demonstrate[ ] that the no project alternative is infeasible," reasoning, it appears, that the County's stated reasons are flawed because they are premised on the EIR's unreasonably narrow project objectives. We agree, as mentioned, that the offered project objectives were unreasonably narrow. We also agree that this affected the County's analysis of the no-project alternative and that the County, for this reason, will need to redo its analysis.

(*We Advocate Through Environmental Review v. County of Siskiyou* (2022) 78 Cal.App.5th 683, 692-694, esp. 694.)

Public agencies must refrain from approving projects with significant environmental impacts if there are feasible alternatives that can substantially lessen or avoid those effects. (*Uphold Our Heritagev. Town of Woodside* (2007) 147 Cal.App.4th 587, 597.)

As the Draft EIR admitted, feasible for purposes of CEQA means "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors." (PRC § 21061.1.)

With respect to *economic* factors, "[t]he fact that an alternative may be *more expensive* or *less profitable* is *not sufficient* to show that the alternative is financially infeasible. What is required is evidence that the *additional costs* or *lost profitability* are *sufficiently severe* as to render it *impractical* to proceed with the project." (*Uphold Our Heritage*, *supra*, 147

Cal.App.4th at 599, emph. added (stating also that "the question is not whether [real party] can afford the alternative, but whether the marginal costs of the alternative as compared to the cost of the proposed project are so great that a reasonably prudent property owner would not proceed with the rehabilitation").)

Lastly, the Draft EIR's claims that the two alternatives – Fewer Unit and Other Tenants – will not meet the *housing* goals of the *General Plan* or *Housing Element* are unavailing. We have reviewed the site inventory of the City's most recent housing element and were unable to find 5150 E. Pacific Coast Highway Site of the Project among sites listed as suitable for housing by the City. (**Exhibit L** [Printout of the City's Site inventory of the Housing Element of the General Plan.]) Instead, the Project Site is designated as Community Commercial in the City's Housing Element. (**Exhibit M** [Printout of the City's Site inventory map showing the zoning designation of the Project site].) Notably, the Project seeks General Plan amendments to even *allow* residential uses and also a CUP to allow *special group* uses of students; in other words, the Project is manifestly inconsistent with the General Plan rather than attempting to accomplish its goals.

In light of the above-noted settled law and legal principles, the City's rejection of the Fewer Units Alternative or Other Tenant Alternatives as infeasible or for failure to provide *housing* and meet the RHNA goals and policies of the City and the City's General Plan is legally and factually unsupported.

### 7. The EIR Fails to List a *Preferred* Alternative.

The EIR's discussion of alternatives is also incomplete as it does not list a *preferred* alternative, while providing a number of inaccurately-described alternatives. While the EIR mentions the No Build/No Project Alternative 1 and also the Senior Housing and Student Housing Alternative 3 would be the environmentally superior alternatives (DEIR, pp. ES-19—20), it also lists a number of disadvantages leaving the public doubting which *one* of those *two* is the preferred alternative or whether any one of those is actually a preferred alternative at all. We also note that a *preferred* alternative is not the same as the environmentally superior one.

As in *Washoe Meadows Community v. Department of Parks & Recreation* (2017) 17 Cal.App.5th 277, 288-289 ("*Washoe Meadows*"), the EIR here with four alternatives presents a "moving target" (*id.*) typical of a scoping plan, which usually has to be prepared before the EIR is drafted.

In view of the above-noted, the EIR's range and discussion of alternatives are legally inadequate and missing critical information, and the EIR must be recirculated to provide a preferred alternative and an accurate range of alternatives, to allow the public's meaningful evaluation of their impacts and to enable a choice.

### C. The Draft EIR Is Legally Flawed Since Its Baseline Assumptions Are Flawed and Inaccurate.

"Without an adequate baseline description, analysis of impacts, mitigation measures and project alternatives becomes impossible." (*County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 953.) " 'An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.'" (*Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 320–321.)

The Draft EIR fails the above-noted informational disclosures of accurate baseline conditions. The Draft EIR fails to disclose the type and hence the intensity of the office uses at the Project Site. The Draft EIR's *one-page* baseline description briefly provides, in part:

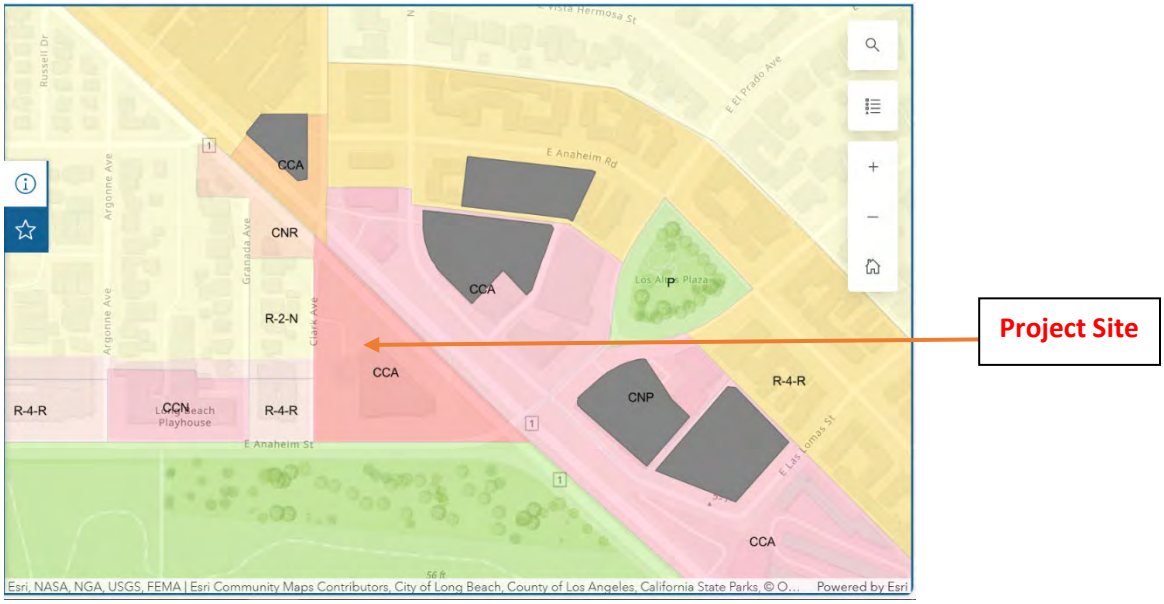
> **3.2 Project Site Setting**
>
> **Figure 2-2: Local Vicinity and Surrounding Land Uses Map**, depicts the Project Site and immediate vicinity. The Project Site is located in the eastern part of the City. The Project Site is **generally bounded** by the Pacific Coast **Highway** to the north and east, East Anaheim **Street** to the south, and Clark **avenue** to the west. The Project Site is **surrounded by commercial**, **office**, **residential**, and **religious uses** to the north and east past the Pacific Coast Highway; a **recreational golf course** (Recreational Park Golf Course 18) to the **south**; and **commercial** and **residential** uses to the west.
>
> **3.3 Cumulative Development**
>
> Section 15355 of the CEQA Guidelines defines "cumulative impacts" as "**two** or **more** individual effects which, when considered together, are considerable or which compound or increase other environmental

> impacts." This means that while the impacts of projects on their own may be insignificant, when analyzed in combination with impacts from other projects in the vicinity, they may be significant. CEQA Guidelines section 15130 requires EIRs to discuss the cumulative impacts of a project "when the project's incremental effect is cumulatively considerable."
>
> Each impact analysis discussion provided in **Chapter 4, Environmental Impact Analysis**, includes a cumulative impacts discussion; however, **no Projects** were **identified** within a **1-mile radius** of the Project as meeting the **City's criteria of 5,000 SF** or greater of **new** commercial and/or industrial and greater than 10 **new** dwelling units.

(DEIR, p. 3-1, emph. added.)

**First**, as shown above, the Draft EIR fails to identify the actual uses at the Project Site. And yet, the Project will displace those uses and *move* those to a different location. Elsewhere, the Draft EIR provides: "The existing office building is approximately 120,000 sf of which 109,600 sf is currently leased (as of January 2024)." (DEIR, p. 4.3-8.) Also, the Draft EIR fails to identify the types of such uses at the Project site for their intensity purposes; for example, as noted in the City's own communications and in our research (**Exhibits H-K**), how much of the building is leased and the types of uses at the Project site are important to make an accurate baseline for CEQA.

**Second**, the Draft EIR provides a very brief and generalized summary of surrounding uses of the Project. Based on the map of the Housing Element Site Inventory, the Project is surrounded by residential R-2, R-4 uses, as shown in the screenshot below:



Moreover, the Housing Element Site Inventory shows that 5155 E. Pacific Coast Highway Site – just across from the Project site – is marked as suitable for residential development of 79 market-rate units (**Exhibit L,** p. 3), even though per google map images of that site as of the date of this comment letter, that site is not yet developed into a residential use (displays the sign of a Masonic facility), as shown below:




As such, the Draft EIR fails to present an accurate and precise description of land uses around the Project and therefore also taints the impact analysis in the EIR, since the Project's impacts are measured against the existing environmental baseline and land uses, including the density and intensity of the adjacent and proximate land uses.

**Third**, the Draft EIR's **cumulative impacts** analysis is flawed. It claims:

> Each impact analysis discussion provided in Chapter 4, Environmental Impact Analysis, includes a cumulative impacts discussion; however, no Projects were identified within a 1-mile radius of the Project as meeting the **City's criteria** of 5,000 SF or greater of **new** commercial and/or industrial and greater than 10 new dwelling units.
>
> (DEIR, p. 3-1, emph. added.)

The claim is factually and legally inaccurate, as it focuses only on *new* uses. Yet, under CEQA, the projects that are deemed related and must be considered for cumulative impact analysis are not only *new* ones, but rather "past, present, and probable future projects." Specifically, CEQA Guidelines § 15130(b) provides:

> (b) The discussion of cumulative impacts **shall reflect** the **severity** of the impacts and **their likelihood** of **occurrence**, but the discussion need not provide as great detail as is provided for the effects attributable to the

> project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the **cumulative impact** to which the **identified other projects contribute** rather than the attributes of other projects which do not contribute to the cumulative impact. The following elements are **necessary** to an adequate discussion of significant cumulative impacts:
>
> (1) Either:
>
> (A) A list of **past**, **present**, and **probable future projects** producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, **or**
>
> (B) A **summary** of **projections** contained in an adopted **local**, **regional** or **statewide plan**, or related **planning document**, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A **summary** of **projections** may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any **such document** shall be **referenced and** made **available** to the **public** at a **location specified** by the lead agency.

(Emph. added.)

The Draft EIR's cumulative impacts discussion manifestly fails to comply with either the option A or B under CEQA Guidelines § 15130(b)(1). It focuses only on the *new* projects for purposes of subsection A, and it fails to name any regional or local plan, much less reference any source of such projections of potential growth and uses for purposes of subsection B. Notably, as mentioned above, even though the Housing Element of the City's General Plan identifies the Project's immediately adjacent (across) 5155 E. Pacific Coast Highway address in the housing site inventory as a suitable site for housing development – thereby making it a *probable future* project – the Draft EIR claims that there are *no new* projects within 1 mile radius of the Project.

For all the reasons noted above, the EIR's baseline assumptions are inaccurate, which, in turn both make the EIR legally inadequate and also taint the rest of the impact analysis in the EIR, as further detailed below.

### D. The Draft EIR's Impact and Mitigation Analysis and Findings Are Legally Inadequate and Unsupported by Substantial Evidence.

For reasons mentioned in Section IV.A-C, the Draft EIR's impact analysis is flawed *ab initio,* since the EIR fails to provide an accurate project description and an accurate baseline, and since it improperly relies on AB 2097 and incorrectly presumes it applies.

In addition, the Draft EIR's impact analysis is flawed as it improperly concludes that certain impacts are less than significant by relying on unsupported baseline assumptions. The Draft EIR noted the following impacts and areas:

> **No Impacts:** aesthetics; agriculture and forestry; mineral resources; wildfire.
>
> **Less than significant impact:** air quality; biological resources; energy; greenhouse gas emissions ("**GHG**"); hazards and hazardous materials; hydrology and water quality; land use and planning; population and housing; public services; recreation; transportation; utilities and service systems.
>
> **Less than significant <u>with mitigation:</u>** cultural resources; geology and soils; noise; tribal cultural resources.
>
> (DEIR, p. ES-23[10]-25)

As evident from the above-noted, the City qualified the most critical impacts of air quality, GHG, land use, biological resources, hazards, water, population and housing, transportation, utilities, public services as "less than significant." And by qualifying so, the City failed to duly analyze those impacts or provide mitigation for those.

Similarly and critically for these days, the Draft EIR classified the *wildfire* as "no impact," claiming:

> The Project site is not located in or near an SRA and does not contain lands classified as VHFHSZs. During both construction and operation, Alternative []/Project would be required to maintain adequate emergency access for emergency vehicles as required by the City of Long Beach and the Long Beach Fire Department. Therefore, no impact would occur.
>
> (DEIR, p. ES-27-28.)

However, the devastating wildfires started in Los Angeles since January 7, 2025 and covering various areas, including Pasadena, Altadena, Pacific Palisade, Glendale, Simi

[10] We noted that the EIR's ES-22 page is missing.

Valley, and others, show that wildfires may develop everywhere – not just in the SRA areas or lands classified as VHFHSZ (**Exhibit N** [Information on LA Wildfires and their effect on Residents of Long Beach].)

Long Beach is not any more protected from wildfires than Los Angeles. Therefore, potential impacts of wildfires and availability of evacuation routes and possibilities are all critical concerns for the Project. These concerns are even more pronounced where, as here, the Project proposes to bring 593 beds for students and potentially 593 cars to the area, apart from employees and service personnel at the dorm.

As detailed below, the Draft EIR's conclusions about "less than significant impacts" are legally and factually unsupported.

### 1. Air Quality Impacts

The Draft EIR's air quality analysis is flawed as it is based on a methodology that improperly understates the Project's impacts. As the Draft EIR describes, sources of operational air quality impacts include *transportation* and *energy*:

> Operation of the Project results in emissions from **area sources** (e.g., landscaping, maintenance equipment.), **mobile sources** (e.g., automobiles and trucks), and **energy sources** (e.g., natural gas usage). **Area source** emissions would be produced through **evaporation** of **solvents** in surface coatings such as primers, paints, and varnishes. In addition, **area source** emissions would include emissions from use of **landscaping** equipment and consumer products such as **detergents**, **cleaning compounds**, **personal care** products, and lawn and garden products. These emissions were calculated using defaults provided in CalEEMod.
>
> **Energy source** emissions would include emissions produced through the use of **natural gas** CalEEMod defaults were used to estimate the natural gas usage for the Project.
>
> **Mobile source** emissions were primarily derived from **vehicle trips** generated by the Project, including employee trips to and from the site and truck. Trip generation rates and vehicle fleet mix used in the analysis are further discussed in **Section 4.18**, Transportation. Emissions estimates for on-road travel was calculated using CalEEMod.

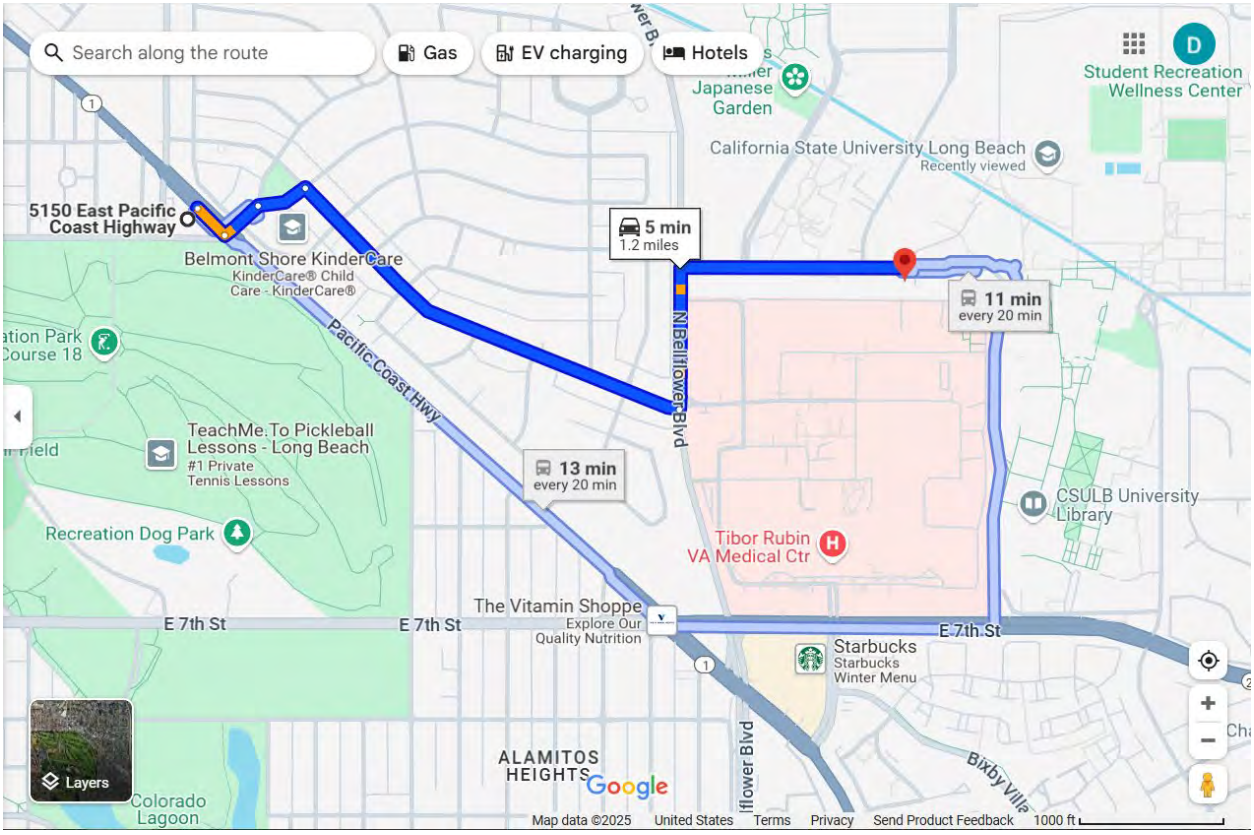
(DEIR, p. ES-4.2-11—12, emph. added.)

And, for operational impacts from vehicles, the EIR provides:

> For construction, CalEEMod calculates emissions from off-road equipment usage and on-road vehicle travel associated with haul, delivery, and construction worker trips. Per the Trip Generation and Vehicle Miles Screening Report prepared by Kimley-Horn for the Project, the Project is anticipated to generate approximately **507 daily vehicle trips**.

(DEIR, p. 4.2-11, emph. added.)

It is questionable, however, how a Project proposing 593 beds for students of the Long Beach University located more than 1 mile away will nonetheless generate only 507 daily vehicle trips. As the screenshot below shows, the proposed Project is about 5 minutes drive away from the University:




It is reasonably foreseeable that all 593 students may have their own cars and may generate over 1000 vehicle trips per day – to and from the University. Moreover, it is reasonably foreseeable that the students may generate *other and additional* daily trips as they may use their cars for *other chores*, since there is no showing that the 5150 E. Pacific Coast Highway site is next to stores. As such, the EIR's estimate of 507 daily trips is clearly erroneous and understated, and hence the EIR's operational air quality impacts analysis which relies on that low-estimate 507 daily vehicle trips is clearly

erroneous as well. While the Draft EIR elsewhere explains that the 507 daily vehicle trips are based on *crediting* the daily trips from the *existing office uses,* this crediting is unsupported and erroneous for many reasons, including the *intensity* of the office uses (day, hours) compared with student housing, and the fact that the existing uses will not be extinguished but will merely relocate elsewhere and continue to *add* to vehicle miles.

Moreover, the Project must also count the air quality and trip volumes of the existing uses at the Project site since those will not be extinguished either but rather move to a different area. Those additional trips include trips generated by various offices of the allegedly mostly leased Project Site, including the vehicle trips of the alleged medical office located at the Project site. Instead, the Draft EIR not only failed to consider the additional trips of the existing offices that will move elsewhere but also improperly *credited* the trips from such uses from the Project's vehicular trip estimates to arrive at 507 vehicle trips for the Project, as shown in Table 4.12-2 below:

**Table 4.12-2: Project Trip Generation**

| Land Use | Size | Unit | ADT[1] | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | In | Out | Total | In | Out | Total |
| **Proposed Land Use** | | | | | | | | | |
| Off-Campus Student Apartment (Mid-Rise) (Modified Rates for Over ½ Mile from Campus) | 593 | bedrooms | 1,695 | 25 | 30 | 55 | 76 | 85 | 161 |
| **Existing Land Use** | | | | | | | | | |
| General Office Building | 109.6 | ksf | -1,188 | -147 | -20 | -167 | -27 | -131 | -158 |
| ***Net Project Trips*** | | | ***507*** | ***-122*** | ***10*** | ***-112*** | ***49*** | ***-46*** | ***3*** |

ksf = thousand square feet
Source: Kimley-Horn and Associates, TGA VMT Memorandum, 2024.

(DEIR, p. 4.12-2.)

The EIR's crediting of 1,188 trips from the existing land uses, and thereby crediting of their generated air quality emissions was error.

That crediting of the existing but not extinguished uses was error is confirmed by the OPR's guidance and expert report on an analogous project moving the existing uses to a different area. (**Exhibit O,** pp. 2-7 [SWAPE Report on the GUSD project].)

As a result of these omissions and erroneous calculation of vehicle trips and crediting of existing trips, the Draft EIR also failed to consider the *health impacts* from the air

pollution and provide for mitigation. (**Exhibit O,** pp. 7-13 [need for updated health risk assessment] and pp. 13-18 [proposed mitigation measures for air quality].)

In addition, the EIR fails to consider the impacts of the massive increase of *energy* impacts and hence *air quality* pollution: increase in the use of natural gas. Specifically, while the existing *office* uses at the Project site may be using gas or may have gas service connections, it is reasonably foreseeable that the proposed 593-bed project, which will include kitchens, bathrooms, and other appliances, will need more use of natural gas. Notably, the City's documentations confirm this by noting that the Project will need to *upsize* the gas pipes and replace the existing ones:

> • Long Beach Energy Resources currently maintains an **active gas service** line feeding the existing building on the lot that will need to be **upsized/renewed** if loads increase due to the conversion. See GIS map (attached) for approximate location of the service.
>
> • If additional new gas service or renewal of existing service is needed for the proposed conversion, Long Beach Energy Resources will need to review and approve the location for the meter and buried service line to be installed. Please consider that the routing of the buried gas service line and clearance requirements for meter may impact the design of the development.

(**Exhibit D,** p. 2, emph. added.)

And yet, the Draft EIR fails to provide an accurate information about the Project's operational impacts from natural gas uses, claiming:

> "Regarding natural gas, construction activities **typically do not** require natural gas. Additionally, the Project's projected **natural gas** demand during Project operations would represent a **negligible** increase compared to the **County's overall natural gas** consumption increase."
>
> (DEIR, p. 4.14-11, emph. added.)

There is no support for the City's statement that the construction of the Project will not require use of natural gas. To wit, some construction equipment and processes do use natural gas. (**Exhibit P,** p. 11 [LSI engines use gasoline, propane, and compressed natural gas as fuel. The LSI Fleet Regulation includes some electric-powered equipment.]) The Project – despite its adaptive reuse – still plans and proposes construction work, including to put a wading pool for students, build other amenities, make street improvements and underground utilities extending beyond the Project site.

More critically, there is no support for the Draft EIR's comparison of the Project's natural gas uses with the *County's* [not even City's] natural gas consumption increase and, based on that comparison alone, to conclude that the Project will have only a "negligible increase" and therefore no significant impacts. The Draft EIR's understatement of the Project's natural gas impacts and hence the associated air quality impacts further make the EIR's air quality analysis legally and factually flawed and unsupported.

For all of the above-noted reasons, the EIR's analysis of air quality impacts from various sources is flawed, making the EIR legally inadequate and improperly leading to a Project with significant impacts, including on public health, that are left unmitigated.

### 2. Impacts on Biological Resources and Public Services

The EIR fails to even list biological resources as a separate study area for the EIR. (DEIR, p. 4.1-1.) The Draft EIR mentions that its initial study analyzed the biological impacts of the Project and found "no impacts." (Draft EIR, p. 5-8.) The Draft EIR's analysis of biological resources is nothing but conclusory:

> As discussed in the Initial Study, included in **Appendix A** of this Draft EIR the Project would have a less than significant impact to biological resources, including adverse effects on any special status species, riparian habitat or other sensitive natural community, federally protected wetlands, native resident or migratory fish and wildlife species, and would not conflict with any local policies or ordinances protecting biological resources. Therefore, impacts to biological resources be less than significant.
>
> Alternative 1 would involve no construction nor operations on the Project Site that would impact biological resources. Therefore, there would be no impacts to biological resources, and impacts would be less under Alternative 1 than the Project.

(DEIR, p. 5-8.)

In the meantime, Appendix A to the Draft EIR notes:

> "Adjacent to the existing building, the **existing surface parking**, **walkways**, and **landscaping** would be **removed** and would be **replaced** by **new outdoor amenities**. A security fence and gate would be provided around the perimeter of the Project Site. Project design would also include lighting of entryways, publicly accessible areas, parking areas, and common building and open space residential areas for security purposes."

(DEIR, Appendix A, p. 13/pdf p. 26, emph. added.)

Also, Draft EIR, Appendix A, Section 4.4 provides:

*4.4e Would the Project conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

**Less Than Significant Impact.** The proposed Project Site is located in an urbanized area and is highly disturbed with minimal vegetation. The proposed Project would not affect any protected biological resources. The existing tree located on Clark Avenue would be preserved. There are currently **four street trees** located on the **periphery** of the proposed Project Site along Pacific Coast Highway. **These trees** would **not** be **removed** as part of the proposed Project. The City does **not** have a **tree preservation** policy or ordinance; however, LBMC Chapter 14.28, Trees and Shrubs, regulates and controls the planting, maintenance, and removal of trees on City streets.

(DEIR, Appendix A, pp. 31-32/pdf pp. 44-45, emph. added.)

In addition, the EIR admits that there *are* trees on the Project site, and it appears to concede that those trees *will* be removed and also that those trees may provide habitat for nesting birds. But the Draft EIR fails to provide any more information or mitigation other than require a nesting bird survey 14 days prior to commencement of the Project and then suggesting that construction activities should not occur during the general avian breeding season "to the extent feasible":

The Project **Site contains** ornamental landscaping, **trees along Clark Avenue and Pacific Coast Highway**, and a sparsely landscaped open space area. It is unlikely that the ornamental landscaping on-site would provide suitable habitat for any native resident or wildlife species. However, the **existing trees may** provide **habitat** for **nesting birds**. Most bird nests and eggs are protected under the California Fish and Game Code (CFGC) Section 3503 and the Migratory Bird Treaty Act (MBTA). **Project construction activities** and **tree maintenance** activities should **occur** outside of the general **avian breeding** season of **February 1st to through August 31st** to the **extent feasible**. **If** Project-related construction, demolition, and tree maintenance activities **cannot** occur outside of the general avian breeding season (February 1st to through August 31st), a **pre-activity nesting bird survey** shall be conducted **prior** to the onset of the aforementioned activities, within a maximum of **14 days** prior to commencement.

(DEIR, Appendix A, p. 31/pdf p. 44, emph. added.)

Critically, since the EIR fails to consider biological impacts, the noted mitigation and recommendation for a survey is not even in the mitigation plan and hence is not binding either.

As such, the City's Draft EIR or its Appendix A to which the EIR refers for biological resources provides no definitive answer as to how many trees will be removed as a result of the Project, while at the same time admitting that trees will be removed and providing no enforceable protection for nesting birds for which such trees serve as a habitat.

In sum, the EIR's findings that no biological impacts will result are unsupported and its biological impact analysis is legally inadequate as it *omits* information.

Also, similar to biological impacts, the Draft EIR fails to consider the Project's impacts to *public services* and instead references its analysis of public service impacts in the Appendix A to the EIR, i.e., the initial study, stating:

> As discussed in **Section 4.15, Public Services**, of the Initial Study included in **Appendix A** of this Draft EIR, the Project would have a less than significant impact in regard to Public Services.
>
> Impacts to fire protection services, police protection services, schools, parks, and other public facilities would be less than significant.

(DEIR, p. 5-80.)

And Section 4.15 in the Appendix A is not any more informative. It provides:

Impact Analysis

> *4.15a Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physical altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection?*
>
> Less Than Significant Impact. The City of Long Beach Fire Department (LBFD) operates 23 fire stations throughout the City. Three fire stations are located within 1 mile of the Project Site: LBFD Station 4 at 411 Loma Avenue LBFD Station 14 at 5200 East Elliot Street, and LBFD Station 17 at 2247 Argonne Avenue, located approximately 1.2 miles southwest, 0.95-mile south, and 1.2 miles southwest of the Project Site, respectively.
>
> The LBFD responded to approximately 80,000 calls in 2022. In February 2022, the latest month for which data was available, the LBFD made 4,981 calls; however, 4,180 (84 percent) of those calls were for medical service, and 587 (12 percent) of calls made for fire protection. In fiscal year **2022**,

> the LBFD arrived on scene **within six minutes** for approximately 33.8 percent of emergency calls.
>
> The proposed Project would adaptively reuse an existing seven-story office building and introduce housing for students which **could incrementally increase demand** for fire **protection services**. Therefore, there is **potential** for an **increase** in **service calls** to the **LBFD** due to an **increase** in **student residents** on the Project Site. **However**, according to **LBMC Section 18.16.050**, Fire Facilities Impact Fee, all residential and nonresidential developments would be required to **pay** a **Fire** Facilities **Impact Fee** to support a potential for an increase in need for fire protection services. Impacts associated with **fire protection** services would be **less than significant**. **This issue** will **not** be carried forward for further analysis in the EIR.
>
> (DEIR, Appendix A, pp. 53-54/pdf pp. 66-67, emph. added.)

The Initial Study relies on the payment of impact fees for the Project's potential impacts on other public services, including schools, police, and other governmental facilities. (DEIR, Appendix A, pp. 54-55.)

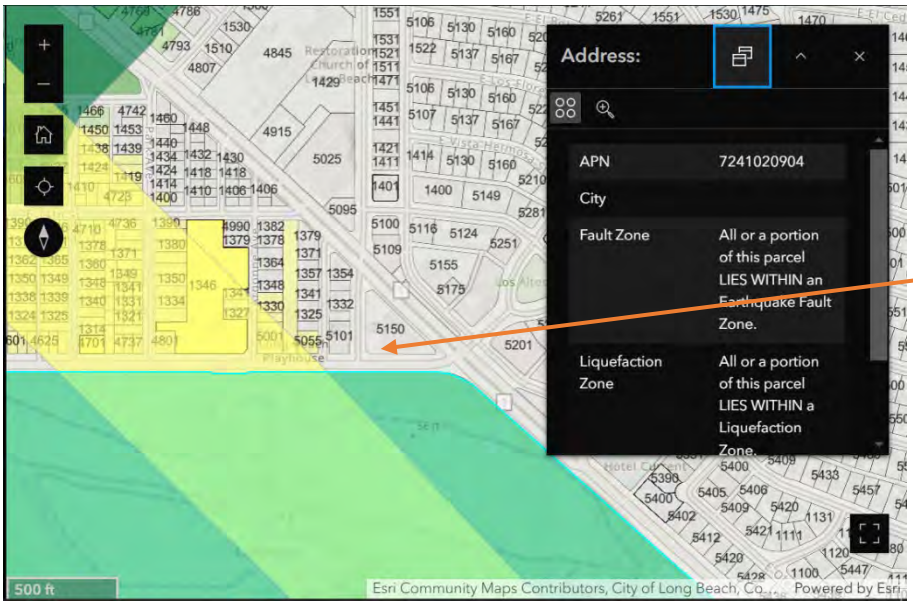
However, the City's reliance on solely impact fees to conclude the Project will have less than significant impacts – while also adding 593 student residents to the area for a University about one mile away – is wholly unsupported by facts and legally misplaced. Critically, impact fees, without more, cannot be sufficient to conclude the Project will have less than significant impacts. Payment of fair share impact fees by a Developer are not proper mitigation measures for the City unless those "mitigation measures require the City to undertake an *action"*; i.e., to "prepare" the fair share plans and unless the City provides that those are feasible and not speculative, i.e., provide an estimate of the cost to prepare the fair share plans, if any, and the estimate of how much the mitigation measures themselves in those plans will cost or how they will be implemented. (*California Clean Energy Committee v. City of Woodland* (2014) 225 Cal.App.4th 173, 197.)

In sum, the EIR's analysis of biological and public services impacts is legally inadequate and missing critical good faith disclosures, information, and much needed mitigation for the changes the Project proposes, including 593 students added to the site, and physical changes to the surrounding environment, which will be affected.

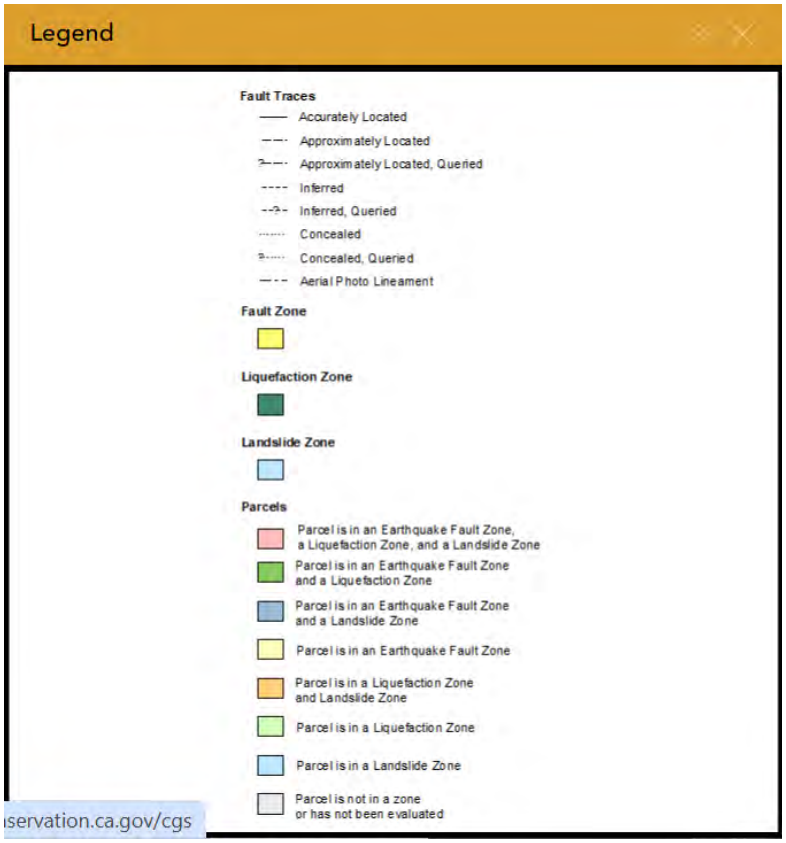
### 3. Geology Impacts

While the Project Site itself is not within the earthquake or liquefaction zone, the Alquist-Priolo Map shows that it is *immediately across* from the Project Site is located

within the earthquake and liquefaction zone, as shown in the screenshot below, marked in green and yellow:




The legend of the Earthquake Map below shows that the yellow stands for the earthquake fault, while the green color stands for liquefaction:



Nonetheless, the Draft EIR provides a very brief Geology/Soils impact analysis (DEIR, pp. 4.5-1—4.5-5), disclaiming any impacts and failing to mention about the Project's close proximity to the earthquake fault and liquefaction zone. It states:

> As determined by the Initial Study, the Project would have **no impact** in regard to the **rapture** of a **known earthquake line**, **ground failure** and **liquefaction**, **landslides**, **lateral spreading**, **subsidence**, **liquefaction** or **collapse**, **expansive soils**, and **soils incapable** of **supporting** the **use** of **septic tanks** or **alternative wastewater disposal** systems. Furthermore, the Project would not **directly** or **indirectly cause** potential substantial **adverse effects**, including the **risk** of **loss**, **injury**, or **death** involving **strong seismic ground shaking** or result in substantial **soil erosion** or the **loss** of **topsoil**. As such, impacts with respect to **seismic ground shaking** and **soil erosion** or the loss of topsoil would be **less than significant**, and **no further** analysis is required.
>
> (DEIR, p. 4.5-4, emph. added.)

As such, the Draft EIR completely fails to acknowledge the potential that bringing a high-density and high-intensity Project with 593 beds/students, employees, and potentially 593 or more cars, of which only a fraction will be accommodated in the subterranean parking and about 127 of which parking will be *tandem* parking, may cause geological or soil impacts. In other words, the Project proposes to bring many people into the area without providing adequate and safe parking and also creating potential gridlocks in case of earthquake, landslides, impeding evacuation possibilities for those students and others residing or working nearby, and endangering the surrounding environment as a result.

The Project's potential geological impacts and hazards are even more pronounced in light of the Project's potential non-suitability for residential uses. Specifically, the Project is a 7-story landmark building made of glass/mirror, as shown below:



(See also, **Exhibit R** [Printout of the Project's image and advertised office space].)

And, as the City and Fire Department noted, it is questionable whether the Project – and its 7 stories of a glass building – is code-compliant for the proposed residential uses:

| | | |
|---|---|---|
| 2 | High Rise / Low Rise building determination:<br>• City permit records reviewed; original project Certificate of Occupancy was not found. Proposed next step from City of LB is to provide an analysis of 1976 UBC vs. current building code to determine high-rise building requirements then vs. today. Existing conditions may be grand-fathered into current project depending upon the conclusion from this analysis and further research. S111 to provide copes of original drawings with 1976 UBC analysis.<br>• Bret A. – LB Fire to check City's annual inspection list of high-rise buildings to determine if the existing building has been considered a high-rise. | S111/ LB Fire |

(**Exhibit E,** p. 1.)

Notably, based on the Alquist-Priolo map screenshot above, the Project is within several feet of both the earthquake fault and liquefaction areas. As such, the Project and its accommodation of 593 students, employees in a glass building, as well as providing parking for about half of those students and in tandem (back-to-back) parking within an enclosed 3 *subterranean* levels may exacerbate the safety risks of earthquake and liquefaction next to the Project site.

These risks to people's life and safety are further exacerbated by the fact that, as noted below, the Project is located in the methane zone, which is prone to cause fires and further may destabilize the Project site and soils.

The Draft EIR's failure to discuss the above-noted hazards and geologic risks makes the EIR legally inadequate.

### 4. GHG Impacts

The Draft EIR concludes that the Project will have less than significant GHG Impacts. The Draft EIR's GHG impact analysis is flawed for several reasons.

**First**, the Draft EIR concedes the **long-term impacts** of GHG:

> GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants (TACs), which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have **long atmospheric lifetimes** (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe.

(DEIR, p. 4.6-11, emph. added.)

For construction impacts, the EIR presumed 6-8 hours work for a year from January 2025 through March of 2026:

> Construction equipment employed would include excavators, tractors, graders, cranes, forklifts, loaders, backhoes, welders, paving equipment, cement and mortar mixers, and air compressors. Each piece of equipment was assumed to operate between six to eight hours a day during the applicable phase of construction. For purposes of the analysis, construction of the Project is expected to commence in January 2025 and would end in March 2026.

(DEIR, p. 4.6-13.)

However, the assumptions for building the Project are not warranted because – as of January 2025 – the Project's EIR is still being reviewed.

Moreover, the City's records show that the Project will include undergrounding and upsizing utilities, including gas, for which additional construction activity will have to occur:

> Developer proposes improvements that may impact existing under- and above-ground utilities through and adjacent to the project site, such as gas lines, street light conduits and utility poles and overhead lines, and along the perimeter streets adjacent to the project site. The Developer shall be responsible for all design, applicable utility approval, permitting, relocation work, easements relocation and commissioning as required by the interested agency and shall work with each utility directly.

(**Exhibit S,** p. 6.)

There is no evidence that the additional construction for purposes of utilities, including outside of the Project site, has been assessed for GHG impacts.

As for *operation* impacts, the Draft EIR's impact analysis was based on the incorrect and legally erroneous assumptions regarding the Project's GHG-related traffic and energy impacts. Specifically, the Draft EIR notes:

> Operation of the Project results in emissions from **area sources** (e.g., **landscaping**, **maintenance equipment**, and **consumer products**), **mobile sources** (e.g., automobiles and trucks), **energy sources** (e.g. electricity and natural gas), **water** and **wastewater** conveyance, and **fugitive refrigerants** from **air conditioning** and **refrigerators**.
>
> **Energy source** emissions would include emissions produced through generation of **electricity** and the **use** of **natural gas**. The Project would be **subject** to **compliance** with the energy conservation measures mandated **by Title 24 of the California Building Standards** and California's 2022 Building Energy Efficiency standard. CalEEMod assumed compliance with the 2019 Title 24 standards by default, which is conservative as the 2022 Title 24 standards are currently applicable.
>
> **Mobile source emissions** were primarily derived from **vehicle trips generated** by the Project, including **residence** and **employee trips** to and from the site and **occasional truck trips** for delivery or pick-up. Trip generation rates used in the analysis were derived from the 5150 Pacific Coast Highway Development, City of Long Beach Trip Generation Analysis and Vehicle Miles Traveled Screening (**Transportation Analysis**), included as Appendix H. Based on the Project's Transportation Analysis, the Project would result in a **net total** of **507 additional** daily trips.

(DEIR, p. 4.6-14, emph. added.)

**First**, it is reasonably foreseeable that the Project will significantly add to the energy, natural gas, water/wastewater uses by bringing 593 people on the Project Site, along with commercial kitchens, refrigeration in each one of 149 rooms and the amenity, kitchen, pool, and other areas. The EIR, however, appears to rely solely on the Project's compliance with Title 24 of the California Building Standards to claim that the energy impacts will be low. (*Ibid.*) However, as courts noted, compliance with the building or any other code is not an adequate assessment of mitigation where the code does not address CEQA considerations, including "whether a building should be constructed at all, how large it should be, where it should be located, whether it should incorporate certain resources, or anything else external to the building's envelope." (*California Clean Energy Committee v. City of Woodland* (2014) 225 Cal.App.4th 173, 211.) There is no evidence that the Title 24 building code was designed to lessen GHG impacts or that it will necessarily reduce GHG impacts to insignificant levels.

**Second**, the Draft EIR's GHG impact analysis ignores the principle of *additionality*. The Project brings *additional* impacts that have not been considered by any plan, since the Project site is not even zoned for residential or high-density uses – it was simply an office building for years. This principle of *additionality* – i.e., requirement that the reduction of GHG impacts must be *in addition* to the reduction otherwise required by law or existing regulations - is found in the Health and Safety Code and recently emphasized by the court. (Health & Safety Code section 38562(d)(2) ["the reduction is in addition to any greenhouse gas emission reduction otherwise required by law or regulation, and any other greenhouse gas emission reduction that otherwise would occur"; *Golden Door Properties, LLC v. County of San Diego* (2020) 50 Cal.App.5th 467, 514-515. ["Additionality is an important requirement because if non-additional (i.e., 'business-as-usual') projects are eligible for carbon [offset] ... then the net amount of greenhouse gas emissions will continue to increase and the environmental integrity of carbon reduction projects will be called into question." *Id.* at 514].)

**Third**, the Draft EIR's GHG impact analysis is flawed, as it relies on the understated transportation impact analysis which erroneously concludes that the Project will have only 507 vehicle trips per day. As also noted earlier in the air-quality Section IV.D.1 section above, the EIR's conclusion of 507 vehicle trips per day is based on the erroneous crediting of over 1,100 trips of the *allegedly* present existing uses on the Project site. However, there is no evidence in the EIR that the present land uses (office

use) produce about 1,100 vehicle trips currently. The EIR does not even account for the *types* of such present uses, as noted earlier.

**Fourth**, a major flaw in the Draft EIR's GHG impact analysis is that it *credits* the GHG impacts of present uses and discounts those – including for natural gas use, energy use, water use, and, most importantly, vehicle trips – from the proposed uses. Such crediting, however, is legally erroneous since the existing uses *will not* be extinguished by the Project but rather move to a different location. As noted by expert SWAPE in an analogous project review:

> However, **relying** on the proposed Project's **net GHG** emissions, rather than the Project's total GHG emissions, is **incorrect** and **inconsistent** with recent guidance set forth by the **Office** of **Planning** and **Research** (OPR). In the Final Statement of Reasons for the GHG-specific Guidelines,*55[11] OPR concluded that lead agencies cannot simply consider whether a project increases or decreases GHG emissions at the project site, but must consider the effect that the project will have on the larger environment.
>
> Accordingly, **if** a lead agency wants to use a **net approach** by subtracting existing on-site emissions from the project emissions, it **must support** that decision with substantial evidence **showing** that those **existing emissions** sources **will be extinguished** and **not simply displaced**.*56[12] Review of the Project's GHG analysis, however, demonstrates that the GHG emissions generated from the 32,233 square foot general office building that will be demolished were subtracted from the proposed Project's GHG emissions, without substantial evidence showing that all of these existing GHG emissions sources on the Project site would be extinguished by the proposed Project, and not simply move elsewhere leading to increased total cumulative GHG emissions over the applicable GHG thresholds. As a result, the Project's GHG impact is underestimated and inadequately addressed.

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[11] Footnote 55 referenced in SWAPE's comment provides and refers to the source: "Final Statement of Reasons, pp. 83-84, *available at,* http://resources.ca.gov/ceqa/docs/Final_Statement_of_Reasons.pdf"

[12] Footnote 56 referenced in SWAPE's comment provides: "See CEQA Guidelines, § 15064.4, subd. (a) ("The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based on available information, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project.")"

(**Exhibit O**, p. 21, emph. added.)

It is, therefore, manifest that the Draft EIR's crediting of existing office uses towards the Project's GHG impacts is in error. The Draft EIR provides no showing that the existing uses will be extinguished and not simply displaced.

**Fifth**, the Project's GHG impact conclusions of less than significant impacts are also flawed since it relies on its alleged compliance with Title 24 code and installation of solar system and EV chargers. The Draft EIR provides:

> Project operations would benefit from the implementation of current and potential future energy regulations including the SB 100 renewable electricity portfolio target of 60 percent renewable energy by 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045. It should be noted that the Project would comply with the **2022 Title 24** Part 6 **Building Energy Efficiency** Standards (2022 Energy Code). Among other updates, the **2022 Energy Code** includes updated standards including **new electric heat pump** requirements for **offices** and banks; and the **expansion** of **solar PV** and battery storage standards to additional land uses including offices. Projects whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Energy Code. Title 24 is part of the State's plans and regulations for **reducing emissions** of **GHGs** to meet and exceed AB 32 and SB 32 **energy reduction** goals. Therefore, the Project would have a less than significant impact on GHG emissions.

(DEIR, p. 4.6-18—4.6-19, emph. added.)

However, the Project fails to provide any specifics as to *how* it will provide for solar roof for a Project that proposes simply an *adaptive* reuse of the *existing glass* building and has no such existing roof accommodations. The feasibility of solar panels on a glass building is also questionable and there is no respective analysis in the Draft EIR.

Similarly, as to EV-chargers, the Draft EIR claims:

> The Project would also include a number of EV parking spaces. Particularly, **10 percent** of the **total number** of **parking spaces** would be EV charging spaces **capable** of supporting future Level 2 EV supply equipment (EVSE), **25 percent** of the total number of parking spaces would be **EV ready**, and **5 percent** of the total number of parking spaces would be equipped with **EVCS**.
>
> (DEIR, p. 4.9-8, emph. added.)

However, this 10% of total number of parking spaces is notably based on the Draft EIR's *reduced parking* and its presumption that such reduced parking is proper and allowed here under AB 2097. For reasons stated earlier, the Project is not eligible for AB 2097 since, among other things, the Project is not for a residential use but rather transient (dorm) use, the Project provides no affordable units, and the Project is not even located within ½ mile of a qualifying major traffic stop.

For all of these reasons, the Draft EIR's GHG impact analysis is flawed. The Project does not *reduce* GHG impacts as required by state policies and plans. Instead, it significantly adds to the GHG impacts and erroneously relies on *net* GHG impacts.

### 5. Hazards and Hazardous Materials Impacts.

The Draft EIR concludes that the Project's hazards and hazardous materials impacts will be less than significant despite the fact that there are admittedly potential recognized environmental conditions ("**REC**") on the Project site and solely based on the fact that the Project Site has been redeveloped into an office building. The Draft EIR provides, in pertinent parts:

> Historical and Present Uses on the Project Site
>
> The Project Site is currently developed with an approximately 120,000 sf office building with three subterranean parking levels, surface parking lot, and associated landscaping. Stationary equipment at the Project Site includes **three cable-traction elevations**, a **15,000-gallon underground water storage tank**, **hot water heaters**, **compressors**, a **cooling tower**, **dry-type transformers**, a fire pump, and a sump. Carbon monoxide monitors are located throughout the subterranean parking levels.
>
> The Project Site reconnaissance consisted as part of the Phase I ESA included an inspection of the Project Site and a perimeter survey of the surrounding properties in compliance with American Society for Testing and Materials (ASTM) standards. The **survey identified potential sources** of **environmental concern** including a **cooling water treatment container**, **electrical equipment** containing **PCBs**, **self-luminescent tritium** exit **signs**, the **sump**, and the **underground water storage** tank. However, these items were found to **appear** in **working order** with no signs of **staining** or **leaking** or **hazardous substances**, and none of these items are expected to represent a significant **environmental condition**.

> **Historic tenants** at the Project Site include a **gasoline station** from at least 1931 to 1952; a **restaurant** from 1953 to 1969; and a **gasoline station** with a car wash from 1972 to 1979. Various professional tenants have occupied the Project Site since 1981. The existing office building is occupied by various professional office tenants.
>
> As noted in the Phase I ESA, **historic occupancy** of the Project Site as a **gasoline station** from 1931 to 1952 and a **gasoline station** with a car wash from 1972 to 1979 **may represent** an **environmental concern**. **However**, given that the Project Site **has been** redeveloped with an **existing office building** with **three subterranean parking levels**, the **historic occupancies** of **gasoline stations** at the Project Site are **not likely** to **represent** a significant environmental concern.

(Emph. added.)

**First**, the Draft EIR's reliance on the Phase I ESA speculation that, "given that the Project Site has been redeveloped with an existing office building with three subterranean parking levels, the historic occupancies of gasoline stations at the Project Site are not likely to represent a significant environmental concern" is misplaced. While the Project's prior redevelopment may have been safe for *commercial office* and *non-residential* uses and for the present building's design and location, it may not necessarily be safe for the Project's proposed transient housing uses and changes to the landscaping, where the Project involves people residing, eating, sleeping at the Project site for extended periods of time, as well as removal of landscaping, construction of new amenities, a wading pool, and undergrounding of utilities.

Notably, each Phase I ESA is only good for one year and requires renewed analysis and review of databases. For example, a prior gasoline station that had an underground storage tank may not have been leaking before, but it may be leaking now. (**Exhibit S** [Geoforward.com website information, where Geoforward is an environmental firm preparing ESAs].) As also stated in an upcoming LACBA webinar series:

> In the current real estate market, we are seeing many existing commercial properties being evaluated under **alternative redevelopment options** including residential or community uses. Along with the challenges of local permitting and entitlement processes, there are sometimes **overlooked elements** such as the **need** to **take** a **closer look** at the site **conditions** from an **environmental** standpoint. As an example, there may be land use covenants that need to be amended or removed; clients may have a series of "**clean**" **Phase I reports** and not realize that those

> reports did **not sufficiently** consider a **potential residential land use**, particularly in the current **vapor intrusion** regulatory atmosphere; there may be additional investigation/remediation work necessary to enable a change in land use.

(**Exhibit U,** emph. added [Informational re LACBA webinar series].)

As such, Phase I ESA's or the Draft EIR's reliance on the rebuilding of the Project site to conclude that the Project Site is *clean* and safe from hazards is not supported.

**Second,** the Draft EIR fails to mention several critical details from the Phase I ESA, including *all* of the Phase I ESA findings of "identified" hazardous materials on the Project Site, as shown in the screenshot below from the Phase I ESA:

4.1 SITE RECONNAISSANCE FINDINGS

| Yes | No | Observation |
|---|---|---|
| | X | Aboveground Storage Tanks (ASTs) and Underground Storage Tanks (USTs) |
| X | | Identified Hazardous Materials |
| X | | Polychlorinated Biphenyls (PCBs) – Electric or Mechanical Equipment Likely to Contain Fluids |
| X | | Radioactive Man-Made Materials |
| | X | Pits, Ponds, and Lagoons |
| | X | Septic Tanks and Cesspools |
| X | | Wells, Cisterns, Sumps, and Drains |
| | X | Wastewater or Grease Interceptors |
| | X | Interior Stains or Corrosion |
| | X | Strong, Pungent, or Noxious Odors |
| | X | Pools of Liquid |
| | X | Stained Soil or Pavement |
| | X | Stressed Vegetation |
| X | | Other |

(DEIR, Appendix E, p. 4/pdf p. 13.)

Also, Phase I ESA acknowledges that the Project Site is listed on *several* **hazardous materials** databases, as shown from the Phase I ESA's screenshot below:

Environmental Databases

The Site was identified on numerous environmental databases due to being a hazardous waste generator in 1999, 2013, 2017, and 2020. No violations were identified on these databases. The Site was identified on the HAZNET database for generating the following hazardous waste:

- Off-specification, aged, or surplus organics in 2016, 2018, 2020, and 2021
- Liquids with pH less than or equal to two in 2020
- Other organic solids in 2020 and 2021

The Site was also identified on the Emergency Response Notification System (ERNS) and the California Hazardous Material Incident Report System (CHMIRS) on April 7, 2007, for the release of dirt and dust from the roof that washed down with a non-butyl based soap into the storm drain due to operator error. The cleanup was completed by Infiniti Environmental. No further cleanup was required. The appearance of the Site on these databases reflects proper disposal of hazardous waste. Based on a lack of violations and that the release of dirt, dust, and soap was cleaned up, these listings are not considered to represent a significant environmental concern.

0503.1009.0_Phase_I_ESA ii

(DEIR, Appendix E/Phase I ESA, p. ii/pdf p. 6.)

Critically, the Draft EIR discounts the methane risks at the Project site, which – per Phase I ESA – need to be studied. As the Phase I ESA provides:

> The Site is located within the City of Long Beach Methane Gas Mitigation Zone recognized by the Long Beach Department of Development Services. For sites within the Methane Gas Mitigation Zone, the Long Beach Department of Development Services, through Chapter 18.79 of the Long Beach Building Code, requires that subsurface soil vapor sampling for methane be conducted prior to any new development.

(DEIR, Appendix E/Phase I ESA, p. iv/pdf p. 8.)

Hazards and dangers of methane gas and oil wells have been acknowledged by the City of Los Angeles,[13] including Division 71, Sec 91.7101 through 91.7109, as well as CA Building Code, both of which require specific mitigation measures.

Based on So-Cal's caution:

> "**METHANE AND HEALTH AND SAFETY**

[13] https://www.ladbs.org/docs/default-source/publications/ordinances/methane-code---ordinance-no-175790.pdf?sfvrsn=d8eeb53_10

> Methane is non-toxic and creates no hazard when inhaled in limited quantities; however, if large quantities of natural gas or methane is allowed to displace air, lack of oxygen may result in suffocation.
>
> Methane can be flammable when mixed with air between certain concentrations (4.5 percent to 15 percent) and where there is an ignition source.
> SoCalGas® conducts extensive safety programs to prevent the escape of natural gas from its system; and as a health and safety precaution, adds a distinctive odor to natural gas so most people can easily notice its presence.
> If you smell a natural gas odor, hear the hissing sound of gas escaping or see other signs of a leak, REMAIN calm. DON'T smoke or light a match, candle or other flame. DON'T turn electrical appliances or lights on or off, operate machinery, or use any device that could create a spark. IMMEDIATELY EVACUATE the area, and from a safe location, call SoCalGas at 1-800-427-2200, or call 911 if the damage results in a natural gas leak that may endanger life or cause bodily harm or property damage."[14]

Thus, methane gas may be dangerous to public health depending on its concentrations.

In addition, the City of Los Angeles' Methane Ordinance mentions about *fire* hazards of methane:

> "WHEREAS, there was a **fire** in the **Fairfax Area** of the City of Los Angeles in **1985**, due to **high volume** of **methane gas seepage** through cracks in the concrete floor of a building;
>
> WHEREAS, in Council File No. 01-1305, the City Council directed the City's Departments of Building and Safety, Engineering, and Planning, as well as, the Chief Legislative Analyst and Office of Administrative and Research Services, to form a work group and recommend uniform safety requirements regarding methane, for **all future** development throughout the City;
>
> WHEREAS, a study by the work group was conducted regarding areas throughout the City of Los Angeles **to identify areas** where subsurface methane gas may be found;…"

[14] https://www.socalgas.com/stay-safe/methane-emissions/methane-and-health-and-safety#:~:text=Methane%20is%20non%2Dtoxic%20and,oxygen%20may%20result%20in%20suffocation.

In light of these fire hazards and according to these directives, the City of Los Angeles mapped *all* the sites in the Project as being in *methane zone.*

Further, the City of Los Angeles' methane ordinance provides *general* methane mitigation measures, and *specific* methane mitigation measures. Thus, under SEC. 91.7103. GENERAL METHANE MITIGATION REQUIREMENTS:

> All new buildings and paved areas located in a Methane Zone or Methane Buffer Zone shall comply with these requirements and the Methane Mitigation Standards established by the Superintendent of Building. The Methane Mitigation Standards provide information describing the installation procedures, design parameters and test protocols for the methane gas mitigation system, which are not set forth in the provisions of this division.

The City of LA's methane ordinance then lists numerous mitigation standards, including methane testing at the project sites, that must be followed by the City of Long Beach and not ignored.

In addition, the Methane Ordinance provides *additional* remedial measures:

> "SEC. 91.7109. ADDITIONAL REMEDIAL MEASURES. 91.7109.1.
>
> **General Remedial Measures.**
>
> In the event the concentration of methane gas in any building located in a Methane Zone or Methane Buffer Zone reaches or exceeds 25 percent of the minimum concentration of gas that will form an ignitable mixture with air at ambient temperature and pressure, the owner shall hire an engineer to investigate, recommend and implement mitigating measures. These measures shall be subject to approval of this Department and the Fire Department. 91.7109.2.
>
> **Abandoned Oil Well.**
>
> Any abandoned oil well encountered during construction shall be evaluated by the Fire Department and may be required to be re-abandoned in accordance with applicable rules and regulations of the Division of Oil, Gas and Geothermal Resources of the State of California. Buildings shall comply with these provisions and the requirements of **Section 91.6105 of this Code, whichever is more restrictive**."

(Emph. added.)

In addition, Section 91.6105 of the Building Code provides:

> **SEC. 91.6105. SEPARATION FROM OIL WELLS.**
>
> **(Amended by Ord. No. 186,488, Eff. 12/27/19.)**
>
> No school, hospital, sanitarium or **assembly occupancy** shall be within **200 feet** from the center of the oil well casing.
>
> No public utility fuel manufacturing plant or public utility electrical generating, receiving or distribution plant shall be located within 200 feet from the center of the oil well casing.
>
> **No building more than 400 square feet** (37 $m^2$) in area **and taller than 36 feet in height** shall be erected **within 50 feet** from the center of an oil well casing.
>
> **A distance separation** between the exterior wall of the building and the **center of an oil well casing** shall be maintained with a horizontal distance equal to **1-1/2 times the building's height,** provided however, that that distance need not exceed 200 feet. The building height for this provision shall be measured vertically from the adjacent lowest ground elevation to the ceiling of the top story.
>
> **EXCEPTIONS:** The distance separation may be reduced to the following:
>
> 1. 35 feet separation if a solid 6 inches thick masonry wall and no shorter than 6 feet tall to be constructed within 50 feet from the building in between the oil well and all portions of the building.
>
> 2. 26 feet if any portion of the building exterior walls within 50 feet from the center of an oil well casing shall be constructed with no openings and one hour fire resistive construction with a 3 foot high fire rated parapet.
>
> 3. 15 feet if any portion of the building exterior walls within 50 feet from the center of an oil well casing shall be constructed with no openings and two-hour fire resistive construction with a 3 foot high fire rated parapet.
>
> The provisions specified within this section shall not apply to oil wells that have been abandoned per LAMC Section 57.5706.3.16 and in accordance

> with the applicable rules and regulations of the Division of Oil, Gas and Geothermal Resources of the State of California.

Here, Phase I ESA of the Project provides that there are *wells* and *sumps* on the Project site. Phase I ESA also provides that the Project is located in methane zone. And the Project proposes to bring 593 students onto the Project site. Moreover, despite the adaptive reuse of the existing building, the Project site will involve grading and construction, including to upsize or add utility pipes. In other words, the Project involves soil disturbance. It is, therefore, reasonably foreseeable that the Project presents a fire and contamination risks for both the students on the Project site and also the surrounding environment due to the disturbance of soils on the Project Site.

And notwithstanding, the Draft EIR disclaims the need for further methane testing or methane dangers by relying only on the claim that no re-development is anticipated at the Project site. The Draft EIR claims:

> Methane
>
> The Project Site is located within the City of Long Beach Methane Gas Mitigation Zone. For sites within the Methane Gas Mitigation Zone, the Long Beach Department of Development Services, through Chapter 18.79 of the Long Beach Municipal Code, requires that subsurface soil vapor sampling for methane be conducted prior to any new development. Therefore, a methane survey would be required if the Project Site is to be re-developed. The **Project involves** the **adaptive reuse** of the existing office building on-site and does not include any new development within the Project Site. **As such**, Chapter 18.79 of the Long Beach Municipal Code is not applicable to the Project, and the Project would **not conduct** subsurface **soil vapor sampling** for methane.

(DEIR, p. 4.7-9—4.7-10, emph. added.)

For reasons mentioned above, the City's disclaimer of methane hazards disregards the fire risks, as well as the fact that the Project proposes *both* re-development (construction activities and soil disturbance) *and* also change of use from office to student dormitory, requiring methane testing to prevent methane contamination.

Lastly, Phase I ESA admits that the Project Site may have asbestos, lead, PCB, radon and other hazardous materials which are dangerous for people's health:

> The current Site building was constructed prior to bans using asbestos-containing building materials (ACBMs), lead-based paint (LBP), and

> polychlorinated biphenyls (PCBs) in electrical equipment came into effect in 1989, 1978, and 1978, respectively. No testing is known to have been performed to evaluate for the presence of ACBMs, LBP, or PCBs at the Site.

(DEIR, Appendix E, Phase I ESA, p. iv/pdf p. 8.)

And yet, no testing of the Project site for asbestos, lead, PCBs or radon was requested at the time of Phase I ESA or was performed, while radon testing exceeded safety levels at one location. (DEIR, Appendix E, Phase I ESA, pp. 5-7.)

It is undisputed that both *lead* and *asbestos* are dangerous to people's health. While intact asbestos by itself may not be hazardous, damaged or disturbed asbestos may release asbestos fibers and become a health hazard.[15] Per Occupational Health and Safety Administration's ("**OSHA**") description:

> **What are the hazards of asbestos?**
>
> Asbestos is well recognized as a health hazard and its use is now highly regulated by both OSHA and EPA. Asbestos fibers associated with these health risks are too small to be seen with the naked eye. Breathing asbestos fibers can cause a buildup of scar-like tissue in the lungs called asbestosis and result in loss of lung function that often progresses to disability and death. Asbestos also causes cancer of the lung and other diseases such as mesothelioma of the pleura which is a fatal malignant tumor of the membrane lining the cavity of the lung or stomach. Epidemiologic evidence has increasingly shown that all asbestos fiber types, including the most commonly used form of asbestos, chrysotile, causes mesothelioma in humans.
>
> (OSHA's Definition of "Asbestos" on its Official Website.)[16]
>
> Similarly, *lead* is dangerous to people and their families. Per OSHA's report:
>
> Lead has been poisoning workers for thousands of years. Lead can damage the central nervous system, cardiovascular system, reproductive

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[15] *See*, https://www.cpsc.gov/safety-education/safety-guides/home/asbestos-home; *see also*, medical conditions associated with asbestos: https://www.atsdr.cdc.gov/asbestos/health_effects_asbestos.html

[16] *See,* https://www.osha.gov/asbestos

> system, hematological system, and kidneys. When absorbed into the body in high enough doses, lead can be toxic.
>
> In addition, workers' lead exposure can harm their children's development. Short-term (acute) overexposure–as short as days--can cause acute encephalopathy, a condition affecting the brain that develops quickly into seizures, coma, and death from cardiorespiratory arrest.
>
> Short-term occupational exposures of this type are highly unusual but not impossible. Extended, long-term (chronic) overexposure can result in severe damage to the central nervous system, particularly the brain. It can also damage the blood-forming, urinary, and reproductive systems. There is no sharp dividing line between rapidly developing acute effects of lead and chronic effects that take longer to develop.
>
> (OSHA report, 2004 *Lead in Construction,* p. 3)[17]

OSHA also documents the adverse effects of lead on people's reproductive health:

> REPRODUCTIVE RISKS
>
> Lead is toxic to both male and female reproductive systems. Lead can alter the structure of sperm cells and there is evidence of miscarriage and stillbirth in women exposed to lead or whose partners have been exposed. Children born to parents who were exposed to excess lead levels are more likely to have birth defects, mental retardation, or behavioral disorders or to die during the first year of childhood.
>
> Workers who desire medical advice about reproductive issues related to lead should contact qualified medical personnel to arrange for a job evaluation and medical followup--particularly if they are pregnant or actively seeking to have a child. Employers whose employees may be exposed to lead and who have been contacted by employees with concerns about reproductive issues must make medical examinations and consultations available.
>
> (OSHA report, 2004 *Lead in Construction,* p. 4.)

[17] See, https://www.osha.gov/sites/default/files/publications/osha3142.pdf

The Project's unmitigated impacts of lead and asbestos (and the disturbance of the soil of a potentially contaminated site, as discussed *infra*) may have significant impacts and broader consequences, including through polluting the wetlands, the groundwater and the surface waters close to the Project Site. As described by the report on the Federal Aviation Administration's website:

> Water resources are surface waters and groundwater that are important in providing drinking water and in supporting recreation, transportation and commerce, industry, agriculture, and aquatic ecosystems. **Surface** water, **groundwater**, **floodplains**, and **wetlands do not** function as **separate** and isolated components of the watershed, but rather as a **single**, **integrated** natural system. **Disruption** of any one part of this system can have **consequences** to the functioning of the **entire** system.

….

> 14.1. Wetlands
>
> For regulatory purposes under the Clean Water Act (CWA), the term wetlands means areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Areas covered with water for such a short time that there is no effect on moist-soil vegetation are not considered wetlands, nor are the waters of streams, reservoirs, and deep lakes. **Wetlands** provide many benefits to the **human**, **biological**, and **hydrological** environment, including **habitat** for **fish** and **wildlife**, **water quality** improvement, **flood storage**, and opportunities for **recreation**.
>
> (FAA Report/Publication, 2/2020, p. 14-2, emph. added.)[18]

CEQA Guidelines mandate: "*Special emphasis should be placed on environmental resources that are rare or unique to that region and would be affected by the project.* The EIR must ... permit the significant effects of the project to be considered in the full environmental context." (CEQA Guidelines § 15125(c), italics added.) The EIR here fails this mandate.

[18] See also, various regulations to protect wetlands from potential adverse impacts at pp. 14-2—5: https://www.faa.gov/about/office_org/headquarters_offices/apl/environ_policy_guidance/policy/faa_nepa_order/desk_ref/media/14-water-resources.pdf

The Draft EIR fails to duly address the dangers of the aforementioned hazards by relying solely on regulatory compliance:

> Project construction would include grading and export of minor amounts of construction debris. Construction activity would comply with SCAQMD Rule 403, addressing fugitive dust sources, Rule 1166 addressing VOC emissions from excavating, grading, handling, and treating VOCcontaminated soil, and Rule 1466, requiring minimization of off-site fugitive dust emissions from earth-moving activities at sites containing specific toxic air contaminants. Compliance with the regulatory requirements associated with Project construction and the requirements of the NPDES Construction General Permit would reduce impacts to less than significant during Project construction activities.

(DEIR, p. 4.7-13.)

The EIR's reliance on regulatory compliance measures is not warranted and does not support its finding that the Project's hazards impacts will be less than significant.

Last but not least, Phase I ESA does not provide conclusive evidence that no *gas* station *USTs* are present on the Project site and also concedes that the Project site has been historically used as a dry cleaner site, presenting yet another REC overlooked by the EIR:

> According to EDR, this address was identified on the EDR Historical Dry Cleaners database in 1976 and on the Long Beach UST database with no tanks listed. While this address is not currently associated with the Site, it is likely a historic Site address based on its location and reviewed building permits. Permits reviewed indicated that a gasoline station and a car wash were demolished in 1979, prior to the development of the current Site structure in 1981. Based on the UST listing indicating no tanks and that the Site consists of three subterranean parking levels, USTs associated with the former gasoline station were likely removed prior to or during redevelopment of the Site.
>
> (DEIR, Appendix E, Phase I ESA, p. 18/pdf p. 27.)

By understating the above-noted myriad of hazards and hazardous materials impacts, the Draft EIR also understates the Project's adverse impacts on human health and fails to duly mitigate those. For this purpose, the Draft EIR is legally inadequate, as it fails its informational and good faith disclosure purpose of CEQA and leaves the decisionmakers uninformed about the Project's impacts and environmental price tag.

### 6. Land Use Impacts

The Draft EIR's finding of less than significant land use impacts is also flawed as it relies on the erroneous assumption that the Project's consistency with the General Plan and applicable plans can be achieved by simply *changing* those plans. The Draft EIR also presumes that the Project is close to a major transit stop. Not so.

The Draft EIR concedes that the Project seeks General Plan amendments and concludes that – *with* the approval of such amendments – the Project will not have land use impacts and will not have conflicts with applicable plans:

> Project Impacts
>
> *Threshold LUP-2: Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?*
>
> Impact LUP-2: Less than Significant Impact.
>
> The Project Site is designated as a CC PlaceType per the City's General Plan Land Use Element. The CC PlaceType permits commercial uses that are automobile oriented. The Project proposes a General Plan Amendment/Map Change to change the existing land use designation of the Project Site from CC to NSC-Moderate. The NSC-Moderate PlaceType accommodates moderate density mixed use development that is typically located near single-family neighborhoods.5 The NSC-Moderate PlaceType adheres to the Project's need for residential occupancy. Upon City approval of the General Plan Amendment/Map Change, the Project would be consistent with the NSC-Moderate PlaceType as a residential use for students.
>
> The Project Site is zoned as CCA, which permits retail and service uses for an entirety community including convenience and comparison shopping for goods and associate services. The Project also proposes a Zoning Code Amendment/Map Change to modify the existing zone from CCA to MU-3. Special Group Residences are permitted in the MU-3 Zoning District with approval of a CUP; the Project includes an application for the required CUP to allow for dormitory use as a Special Group Residence. The MU-3 Zoning District is intended for the highest intensity neighborhood activity centers in proximity to bus routes and multi-modal corridors. The Project Site, with its proximity to multiple transit facilities and freeways, would be consistent with the purpose of the

> MU-3 Zoning District, upon approval of the proposed Zoning Code Amendment/Map Change by the City.
>
> The following analysis describes the Project's consistency with current regional and local plans and policies pertaining to land use and planning, which were outlined in further detail in the Regulatory Framework discussion above.
>
> Accordingly, upon approval of the Project's entitlements by the City, the Project would not conflict with the Project Site's General Plan and zoning designations, SCAG 2024 RTP/SCS, General Plan, or Zoning Ordinance. As such, the Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, and impacts would be less than significant.
>
> (DEIR, p. 4.9-4—4.9-5.)

The City's reasoning is incorrect. The EIR has to reveal the Project's inconsistency and conflicts *as against* the existing (unchanged) applicable plans. "The Planning and Zoning Law does not contemplate that general plans will be amended to conform to zoning ordinances. The tail does not wag the dog. The general plan is the charter to which the ordinance must conform." (*Lesher Communications, Inc. v. City of Walnut Creek* (1990) 52 Cal.3d 531, 538-544.)

Also, separate from CEQA, if a Project, as here, is inconsistent with the general plan, it not only may cause land use impacts but it also violates the City's General Plan and, in turn, violates the State Planning and Zoning Law's requirement that the proposed projects be consistent with General Plans, to ensure orderly growth.

Moreover, to the extent the City relies on the Project's purported consistency with the General Plan based on the alleged proximity of the Project to transit corridors (DEIR, p. 4.9-6), that reliance is misplaced. There is no evidence that the Project is indeed close to public transit, as it is contemplated by CEQA or law, including AB 2097. (See Section IV.A, *supra.*) One bus line traveling east/west is not sufficient to constitute a major transit stop, as discussed earlier. A major transit stop is, by definition, an *intersection* of two or more buses lines. There is also no evidence that the existing bus line traveling east/west meets the presently updated 20-minute service intervals at peak hours.

Similarly, the City's consistency finding based on the claim that the Project reduces air quality and GHG impacts (DEIR, p. 4.9-6) is misplaced. As discussed earlier, the Project's GHG and air quality analyses are legally flawed and improperly rely on *net* impacts and also on understated vehicle miles or trips. It is reasonably foreseeable that the Project may have significant air quality and GHG impacts and not reduce those.

As such, the City's conclusion of less than significant impacts and consistency with the General Plan is legally inadequate, erroneous, and violates both CEQA and the State's Planning and Zoning Law and the City's own General Plan.

### 7. Traffic, Emergency, and Cumulative Impacts

In view of the above noted inadequate project description, inaccurate baseline assumptions, and improper reliance on *vehicle trip credits* and AB 2097, the Project may have significant traffic and parking impacts. Briefly, the EIR presumes that the Project will generate only 507 daily trips, solely based on crediting and discounting over 1,100 daily vehicle trips of the present office uses. **First**, there is no evidence that the present uses indeed generate over 1,100 daily vehicle trips. **Second**, even if they do, those trips should not be discounted but rather *added* to the Project's impacts since those offices will not close down but rather move to a different location and continue to generate trips.

**Third**, the Project improperly claims that it qualifies for AB 2097 parking reduction and hence ignores the impacts of the reduced parking while at the same time providing tandem parking, and far less parking spaces for potentially 593 cars (of 593 students). The secondary impacts of parking shortage are still a concern for CEQA. They generate more traffic, more gridlock, more air quality, GHG, noise, and other impacts.

**Fourth**, the City disregards the Project's cumulative impacts by claiming that there are no related *new* projects within 1 mile. However, as noted earlier, cumulative impacts are not limited only to the Project's impacts along with *new* uses, but rather past, present, and probable future projects. Also, the Housing Element of the City's General Plan marks the 5155 E. Pacific Coast Highway site as a potential residential development site, which does constitute a *new probable future* project for purposes of a cumulative impact analysis. In addition, the City's records show that Caltrans may be implementing certain transportation changes near the Project site:

> l. Pacific Coast Highway is a State highway under the jurisdiction of the California Department of Transportation (Caltrans). A street

improvement encroachment permit from (Caltrans) will be required for all work within the Pacific Coast Highway right-of-way. The Developer shall contact Caltrans to request additional information regarding its permitting process and provide a copy of the approved permit and design plans to the Department of Public Works.

m. There appear to be ongoing/future City and Caltrans street improvement projects adjacent to the project site along Anaheim Street and Pacific Coast Highway. As such, Anaheim street may be under a street moratorium when the project construction commences. The Developer shall provide written approval from the City to implement any street improvements prior to the end of the existing moratorium, in the form of a discretionary permit for excavation. Any work within a street under moratorium requires a complete grind and overlay from block to block and the Applicant shall adhere to this requirement. Applicant shall also coordinate with Caltrans regarding any conflict with their proposed improvements along Pacific Coast Highway.

(**Exhibit S**, p. 6.)

In sum, the City's traffic impact analysis *omits* critical details; the Project's traffic impacts and potential conflicts with other plans, and also improperly relies on flawed and incorrect baseline assumptions to understate the Project's impacts. For these reasons, the Draft EIR is legally deficient as to traffic impact analysis and fails good faith disclosures and informational mandates of CEQA.

### 8. Noise Impacts

The Draft EIR identifies the following sensitive receptors near the Project:

**Table 4.10-7: Sensitive Receptors**

| Receptor Description | Distance[1] and Direction from the Property Line of Project Site |
|---|---|
| Multi-Family Residential Dwellings | 55 feet to the west |
| Single-Family Residential Dwellings | 55 feet to the west |
| Rock Christian Fellowship | 175 feet to the east |
| Cambrian Homecare | 290 feet to the east |
| 1. Distances are measured from the Project Site boundary to the property line.<br>Source: Google Earth, 2024 | |

(DEIR, p. 4.10-13.)

Yet, the Draft EIR concludes the Project will have no construction noise impacts since – for some reason – construction will be mostly located 170 feet from sensitive uses. This estimate is flawed, however, since construction equipment and trucks may still be driving, parking, staging, or idling *near* the sensitive receptors and generate noise close to sensitive receptors.

Also, the Draft EIR's conclusion of no operational noise impacts is based on understatement of parking and traffic volumes. The Draft EIR claims, for example, that the Project's parking will have no noise impacts since it is enclosed in 3 levels of subterranean parking. However, the Draft EIR fails to acknowledge that the subterranean parking fails to provide parking for all 593 students and employees. As such, a *part* of the Project's generated parking uses may be on-street and will not be enclosed, thereby generating traffic noise.

Similarly, the Draft EIR claims that the Project will have less *traffic* noise only because it improperly presumes that the current uses already generate over 1,188 daily trips and that the Project's net trips, therefore, will be only 507 or even 291:

> *Operational Traffic Noise*
>
> According to the Project's Traffic Generation Analysis and Vehicle Miles Traveled Screening (Kimley-Horn, 2024), the Park Tower Student Housing Project would result in approximately 1,695 daily trips. The existing use on site generates 1,188 daily trips. Therefore, compared to the existing condition, the Project is anticipated to generate 507 net daily trips. The project is expected to generate a net of 291 average daily trips, which would result in noise increases on project area roadways. In general, a traffic noise increase of less than 3 dBA is barely perceptible to people, while a 5 dBA increase is readily noticeable (Caltrans, 2013). Generally, traffic volumes on project area roadways would have to approximately double for the resulting traffic noise levels to increase by 3 dBA. According to Citywide Traffic Flow maps, the roadways in the project area have between 10,000 and 26,300 daily trips. Therefore, the Project would not result in a doubling of trips and permanent increases in ambient noise levels more than 3 dBA would not occur.
>
> Therefore, there would not be any new operational traffic noise impacts.
>
> (Draft EIR, p. 4.10-19.)

For all reasons mentioned in Section IV.B.1, *supra,* the Draft EIR's presumptions about the reduced traffic trips and crediting of the 1,188 trips are in error, making its conclusion of no traffic noise impacts also unsupported.

For this reason, too, the Draft EIR is legally inadequate and fails CEQA's informational mandates.

## V. CONCLUSION

In view of the above-noted concerns, we respectfully request that the comment period for the EIR be extended and continued and the EIR to be recirculated to include the omitted information and provide meaningful analysis, identification, and mitigation of impacts as CEQA requires. We also request that a Phase II ESA be conducted to resolve and investigate issues that Phase I skipped or understated, including but not limited to soil sampling, methane testing, and asbestos and other hazards evaluation of the Project site. "CEQA contemplates *serious* and not superficial or pro forma consideration of the potential environmental consequences of a project." (*Leonoff v. Monterey County Bd. of Supervisors* (1990) 222 Cal.App.3d 1337, 1347, 272 Cal.Rptr. 372; emphasis added*; Burbank-Glendale-Pasadena Airport Authority v. Hensler* (1991) 233 Cal.App.3d 577, 593, fn. 3.)

If the City has any questions or concerns, please feel free to contact my Office.

Sincerely,

Naira Soghbatyan
Attorneys for Western States Regional Council of Carpenters

**Attached:**

March 8, 2021 SWAPE Letter to Mitchell M. Tsai re Local Hire Requirements and Considerations for Greenhouse Gas Modeling (**Exhibit A**);

Air Quality and GHG Expert Paul Rosenfeld CV (**Exhibit B**);

Air Quality and GHG Expert Matt Hagemann CV (**Exhibit C**);

2208-43_CSPR_22-012_Letter – City's PRA Production (**Exhibit D**);

1._20220630_-City_of_LB_Pre-Development Meeting – City's PRA Production (**Exhibit E**);

7._Planning_Invoice_-5150_E_PCH_2301-01 – City's PRA Production (**Exhibit F**);

Los Angeles City's Supplemental Plan Review Checklist re Transient Housing (**Exhibit G**);

Printouts of the Project Site's Descriptions and ads from various websites (**Exhibit H**);

Printout of the Project Site's information showing it is also used for ProHealth Medical Group (**Exhibit I**);

Planner_to_DB-applicant_3.27.2024 – City's PRA Production (**Exhibit J**);

Planner_to_AH_2.14.2023 – City's PRA Production (**Exhibit K**);

Sie Inventory of the City of Long Beach's Housing Element (**Exhibit L**);

Printouts of the *search* of the Project Site on the Housing Element Site Inventory Map (**Exhibit M**);

Information on the Wildfires in Los Angeles Area, January 2025 (**Exhibit N**);

SWAPE Expert Report for GUSD Project (**Exhibit O**);

Offroad Booklet re construction equipment us of natural gas (**Exhibit P**);

December 11, 2024 Communications re City's Failure to include Appendix B on the City's or CEQAnet's websites (**Exhibit Q**);

Information re Project Site as Premier Long Beach Virtual Office in Long Beach CA (**Exhibit R**);

2208-43_SPR_22-013_-_Response_Letter_11.18.2022-attachments-Redacted – City's PRA production (**Exhibit S**);

GEO Forward's website information on the validity of Phase I ESAs (**Exhibit T**);

Information on LACBA's webinar re Real Estate Land Use Conversions – Environmental Considerations (**Exhibit U**);

DB_applicant to Planner 10.26.2022 2 – City's PRA Production (**Exhibit V**); and

Planner_to_AO_ASL_11.3.2022 – City's PRA Production (**Exhibit W**).

# EXHIBIT A

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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March 8, 2021

Mitchell M. Tsai
155 South El Molino, Suite 104
Pasadena, CA 91101

**Subject: Local Hire Requirements and Considerations for Greenhouse Gas Modeling**

Dear Mr. Tsai,

Soil Water Air Protection Enterprise ("SWAPE") is pleased to provide the following draft technical report explaining the significance of worker trips required for construction of land use development projects with respect to the estimation of greenhouse gas ("GHG") emissions. The report will also discuss the potential for local hire requirements to reduce the length of worker trips, and consequently, reduced or mitigate the potential GHG impacts.

## Worker Trips and Greenhouse Gas Calculations

The California Emissions Estimator Model ("CalEEMod") is a "statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects."[1] CalEEMod quantifies construction-related emissions associated with land use projects resulting from off-road construction equipment; on-road mobile equipment associated with workers, vendors, and hauling; fugitive dust associated with grading, demolition, truck loading, and on-road vehicles traveling along paved and unpaved roads; and architectural coating activities; and paving.[2]

The number, length, and vehicle class of worker trips are utilized by CalEEMod to calculate emissions associated with the on-road vehicle trips required to transport workers to and from the Project site during construction.[3]

[1] "California Emissions Estimator Model." CAPCOA, 2017, *available at:* http://www.aqmd.gov/caleemod/home.
[2] "California Emissions Estimator Model." CAPCOA, 2017, *available at:* http://www.aqmd.gov/caleemod/home.
[3] "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 34.

Specifically, the number and length of vehicle trips is utilized to estimate the vehicle miles travelled ("VMT") associated with construction. Then, utilizing vehicle-class specific EMFAC 2014 emission factors, CalEEMod calculates the vehicle exhaust, evaporative, and dust emissions resulting from construction-related VMT, including personal vehicles for worker commuting.[4]

Specifically, in order to calculate VMT, CalEEMod multiplies the average daily trip rate by the average overall trip length (see excerpt below):

> "$VMT_d = \Sigma(\text{Average Daily Trip Rate}_i * \text{Average Overall Trip Length}_i)_n$
>
> Where:
>
> n = Number of land uses being modeled."[5]

Furthermore, to calculate the on-road emissions associated with worker trips, CalEEMod utilizes the following equation (see excerpt below):

> "$\text{Emissions}_{pollutant} = VMT * EF_{running,pollutant}$
>
> Where:
>
> $\text{Emissions}_{pollutant}$ = emissions from vehicle running for each pollutant
>
> VMT = vehicle miles traveled
>
> $EF_{running,pollutant}$ = emission factor for running emissions."[6]

Thus, there is a direct relationship between trip length and VMT, as well as a direct relationship between VMT and vehicle running emissions. In other words, when the trip length is increased, the VMT and vehicle running emissions increase as a result. Thus, vehicle running emissions can be reduced by decreasing the average overall trip length, by way of a local hire requirement or otherwise.

## Default Worker Trip Parameters and Potential Local Hire Requirements

As previously discussed, the number, length, and vehicle class of worker trips are utilized by CalEEMod to calculate emissions associated with the on-road vehicle trips required to transport workers to and from the Project site during construction.[7] In order to understand how local hire requirements and associated worker trip length reductions impact GHG emissions calculations, it is important to consider the CalEEMod default worker trip parameters. CalEEMod provides recommended default values based on site-specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with project type. If more specific project information is known, the user can change the default values and input project-specific values, but the California Environmental Quality Act ("CEQA") requires that such changes be justified by substantial evidence.[8] The default number of construction-related worker trips is calculated by multiplying the

[4] "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 14-15.
[5] "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 23.
[6] "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 15.
[7] "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 34.
[8] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 1, 9.

number of pieces of equipment for all phases by 1.25, with the exception of worker trips required for the building construction and architectural coating phases.[9] Furthermore, the worker trip vehicle class is a 50/25/25 percent mix of light duty autos, light duty truck class 1 and light duty truck class 2, respectively."[10] Finally, the default worker trip length is consistent with the length of the operational home-to-work vehicle trips.[11] The operational home-to-work vehicle trip lengths are:

> "[B]ased on the *location* and *urbanization* selected on the project characteristic screen. These values were *supplied by the air districts or use a default average for the state*. Each district (or county) also assigns trip lengths for urban and rural settings" (emphasis added). [12]

Thus, the default worker trip length is based on the location and urbanization level selected by the User when modeling emissions. The below table shows the CalEEMod default rural and urban worker trip lengths by air basin (see excerpt below and Attachment A).[13]

| Worker Trip Length by Air Basin | | |
|---|---|---|
| **Air Basin** | **Rural (miles)** | **Urban (miles)** |
| Great Basin Valleys | 16.8 | 10.8 |
| Lake County | 16.8 | 10.8 |
| Lake Tahoe | 16.8 | 10.8 |
| Mojave Desert | 16.8 | 10.8 |
| Mountain Counties | 16.8 | 10.8 |
| North Central Coast | 17.1 | 12.3 |
| North Coast | 16.8 | 10.8 |
| Northeast Plateau | 16.8 | 10.8 |
| Sacramento Valley | 16.8 | 10.8 |
| Salton Sea | 14.6 | 11 |
| San Diego | 16.8 | 10.8 |
| San Francisco Bay Area | 10.8 | 10.8 |
| San Joaquin Valley | 16.8 | 10.8 |
| South Central Coast | 16.8 | 10.8 |
| South Coast | 19.8 | 14.7 |
| **Average** | **16.47** | **11.17** |
| **Minimum** | **10.80** | **10.80** |
| **Maximum** | **19.80** | **14.70** |
| **Range** | **9.00** | **3.90** |

[9] "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 34.
[10] "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 15.
[11] "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 14.
[12] "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 21.
[13] "Appendix D Default Data Tables." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4, p. D-84 – D-86.

As demonstrated above, default rural worker trip lengths for air basins in California vary from 10.8- to 19.8-miles, with an average of 16.47 miles. Furthermore, default urban worker trip lengths vary from 10.8- to 14.7-miles, with an average of 11.17 miles. Thus, while default worker trip lengths vary by location, default urban worker trip lengths tend to be shorter in length. Based on these trends evident in the CalEEMod default worker trip lengths, we can reasonably assume that the efficacy of a local hire requirement is especially dependent upon the urbanization of the project site, as well as the project location.

## Practical Application of a Local Hire Requirement and Associated Impact

To provide an example of the potential impact of a local hire provision on construction-related GHG emissions, we estimated the significance of a local hire provision for the Village South Specific Plan ("Project") located in the City of Claremont ("City"). The Project proposed to construct 1,000 residential units, 100,000-SF of retail space, 45,000-SF of office space, as well as a 50-room hotel, on the 24-acre site. The Project location is classified as Urban and lies within the Los Angeles-South Coast County. As a result, the Project has a default worker trip length of 14.7 miles.[14] In an effort to evaluate the potential for a local hire provision to reduce the Project's construction-related GHG emissions, we prepared an updated model, reducing all worker trip lengths to 10 miles (see Attachment B). Our analysis estimates that if a local hire provision with a 10-mile radius were to be implemented, the GHG emissions associated with Project construction would decrease by approximately 17% (see table below and Attachment C).

| **Local Hire Provision Net Change** | |
|---|---|
| **Without Local Hire Provision** | |
| Total Construction GHG Emissions (MT $CO_2e$) | 3,623 |
| Amortized Construction GHG Emissions (MT $CO_2e$/year) | 120.77 |
| **With Local Hire Provision** | |
| Total Construction GHG Emissions (MT CO2e) | 3,024 |
| Amortized Construction GHG Emissions (MT $CO_2e$/year) | 100.80 |
| ***% Decrease in Construction-related GHG Emissions*** | ***17%*** |

As demonstrated above, by implementing a local hire provision requiring 10 mile worker trip lengths, the Project could reduce potential GHG emissions associated with construction worker trips. More broadly, any local hire requirement that results in a decreased worker trip length from the default value has the potential to result in a reduction of construction-related GHG emissions, though the significance of the reduction would vary based on the location and urbanization level of the project site.

This serves as an example of the potential impacts of local hire requirements on estimated project-level GHG emissions, though it does not indicate that local hire requirements would result in reduced construction-related GHG emission for all projects. As previously described, the significance of a local hire requirement depends on the worker trip length enforced and the default worker trip length for the project's urbanization level and location.

[14] "Appendix D Default Data Tables." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4, p. D-85.

## Disclaimer

SWAPE has received limited discovery. Additional information may become available in the future; thus, we retain the right to revise or amend this report when additional information becomes available. Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable environmental consultants practicing in this or similar localities at the time of service. No other warranty, expressed or implied, is made as to the scope of work, work methodologies and protocols, site conditions, analytical testing results, and findings presented. This report reflects efforts which were limited to information that was reasonably accessible at the time of the work, and may contain informational gaps, inconsistencies, or otherwise be incomplete due to the unavailability or uncertainty of information obtained or provided by third parties.

Sincerely,



Matt Hagemann, P.G., C.Hg.



Paul E. Rosenfeld, Ph.D.

| Location Type | Location Name | Rural H-W (miles) | Urban H-W (miles) |
|---|---|---|---|
| Air Basin | Great Basin | 16.8 | 10.8 |
| Air Basin | Lake County | 16.8 | 10.8 |
| Air Basin | Lake Tahoe | 16.8 | 10.8 |
| Air Basin | Mojave Desert | 16.8 | 10.8 |
| Air Basin | Mountain | 16.8 | 10.8 |
| Air Basin | North Central | 17.1 | 12.3 |
| Air Basin | North Coast | 16.8 | 10.8 |
| Air Basin | Northeast | 16.8 | 10.8 |
| Air Basin | Sacramento | 16.8 | 10.8 |
| Air Basin | Salton Sea | 14.6 | 11 |
| Air Basin | San Diego | 16.8 | 10.8 |
| Air Basin | San Francisco | 10.8 | 10.8 |
| Air Basin | San Joaquin | 16.8 | 10.8 |
| Air Basin | South Central | 16.8 | 10.8 |
| Air Basin | South Coast | 19.8 | 14.7 |
| Air District | Amador County | 16.8 | 10.8 |
| Air District | Antelope Valley | 16.8 | 10.8 |
| Air District | Bay Area AQMD | 10.8 | 10.8 |
| Air District | Butte County | 12.54 | 12.54 |
| Air District | Calaveras | 16.8 | 10.8 |
| Air District | Colusa County | 16.8 | 10.8 |
| Air District | El Dorado | 16.8 | 10.8 |
| Air District | Feather River | 16.8 | 10.8 |
| Air District | Glenn County | 16.8 | 10.8 |
| Air District | Great Basin | 16.8 | 10.8 |
| Air District | Imperial County | 10.2 | 7.3 |
| Air District | Kern County | 16.8 | 10.8 |
| Air District | Lake County | 16.8 | 10.8 |
| Air District | Lassen County | 16.8 | 10.8 |
| Air District | Mariposa | 16.8 | 10.8 |
| Air District | Mendocino | 16.8 | 10.8 |
| Air District | Modoc County | 16.8 | 10.8 |
| Air District | Mojave Desert | 16.8 | 10.8 |
| Air District | Monterey Bay | 16.8 | 10.8 |
| Air District | North Coast | 16.8 | 10.8 |
| Air District | Northern Sierra | 16.8 | 10.8 |
| Air District | Northern | 16.8 | 10.8 |
| Air District | Placer County | 16.8 | 10.8 |
| Air District | Sacramento | 15 | 10 |

| | | | |
|---|---|---|---|
| Air District | San Diego | 16.8 | 10.8 |
| Air District | San Joaquin | 16.8 | 10.8 |
| Air District | San Luis Obispo | 13 | 13 |
| Air District | Santa Barbara | 8.3 | 8.3 |
| Air District | Shasta County | 16.8 | 10.8 |
| Air District | Siskiyou County | 16.8 | 10.8 |
| Air District | South Coast | 19.8 | 14.7 |
| Air District | Tehama County | 16.8 | 10.8 |
| Air District | Tuolumne | 16.8 | 10.8 |
| Air District | Ventura County | 16.8 | 10.8 |
| Air District | Yolo/Solano | 15 | 10 |
| County | Alameda | 10.8 | 10.8 |
| County | Alpine | 16.8 | 10.8 |
| County | Amador | 16.8 | 10.8 |
| County | Butte | 12.54 | 12.54 |
| County | Calaveras | 16.8 | 10.8 |
| County | Colusa | 16.8 | 10.8 |
| County | Contra Costa | 10.8 | 10.8 |
| County | Del Norte | 16.8 | 10.8 |
| County | El Dorado-Lake | 16.8 | 10.8 |
| County | El Dorado- | 16.8 | 10.8 |
| County | Fresno | 16.8 | 10.8 |
| County | Glenn | 16.8 | 10.8 |
| County | Humboldt | 16.8 | 10.8 |
| County | Imperial | 10.2 | 7.3 |
| County | Inyo | 16.8 | 10.8 |
| County | Kern-Mojave | 16.8 | 10.8 |
| County | Kern-San | 16.8 | 10.8 |
| County | Kings | 16.8 | 10.8 |
| County | Lake | 16.8 | 10.8 |
| County | Lassen | 16.8 | 10.8 |
| County | Los Angeles- | 16.8 | 10.8 |
| County | Los Angeles- | 19.8 | 14.7 |
| County | Madera | 16.8 | 10.8 |
| County | Marin | 10.8 | 10.8 |
| County | Mariposa | 16.8 | 10.8 |
| County | Mendocino- | 16.8 | 10.8 |
| County | Mendocino- | 16.8 | 10.8 |
| County | Mendocino- | 16.8 | 10.8 |
| County | Mendocino- | 16.8 | 10.8 |
| County | Merced | 16.8 | 10.8 |
| County | Modoc | 16.8 | 10.8 |
| County | Mono | 16.8 | 10.8 |
| County | Monterey | 16.8 | 10.8 |
| County | Napa | 10.8 | 10.8 |

| | | | |
|---|---|---|---|
| County | Nevada | 16.8 | 10.8 |
| County | Orange | 19.8 | 14.7 |
| County | Placer-Lake | 16.8 | 10.8 |
| County | Placer-Mountain | 16.8 | 10.8 |
| County | Placer- | 16.8 | 10.8 |
| County | Plumas | 16.8 | 10.8 |
| County | Riverside- | 16.8 | 10.8 |
| County | Riverside- | 19.8 | 14.7 |
| County | Riverside-Salton | 14.6 | 11 |
| County | Riverside-South | 19.8 | 14.7 |
| County | Sacramento | 15 | 10 |
| County | San Benito | 16.8 | 10.8 |
| County | San Bernardino- | 16.8 | 10.8 |
| County | San Bernardino- | 19.8 | 14.7 |
| County | San Diego | 16.8 | 10.8 |
| County | San Francisco | 10.8 | 10.8 |
| County | San Joaquin | 16.8 | 10.8 |
| County | San Luis Obispo | 13 | 13 |
| County | San Mateo | 10.8 | 10.8 |
| County | Santa Barbara- | 8.3 | 8.3 |
| County | Santa Barbara- | 8.3 | 8.3 |
| County | Santa Clara | 10.8 | 10.8 |
| County | Santa Cruz | 16.8 | 10.8 |
| County | Shasta | 16.8 | 10.8 |
| County | Sierra | 16.8 | 10.8 |
| County | Siskiyou | 16.8 | 10.8 |
| County | Solano- | 15 | 10 |
| County | Solano-San | 16.8 | 10.8 |
| County | Sonoma-North | 16.8 | 10.8 |
| County | Sonoma-San | 10.8 | 10.8 |
| County | Stanislaus | 16.8 | 10.8 |
| County | Sutter | 16.8 | 10.8 |
| County | Tehama | 16.8 | 10.8 |
| County | Trinity | 16.8 | 10.8 |
| County | Tulare | 16.8 | 10.8 |
| County | Tuolumne | 16.8 | 10.8 |
| County | Ventura | 16.8 | 10.8 |
| County | Yolo | 15 | 10 |
| County | Yuba | 16.8 | 10.8 |
| Statewide | Statewide | 16.8 | 10.8 |

| Worker Trip Length by Air Basin | | |
|---|---|---|
| **Air Basin** | **Rural (miles)** | **Urban (miles)** |
| Great Basin Valleys | 16.8 | 10.8 |
| Lake County | 16.8 | 10.8 |
| Lake Tahoe | 16.8 | 10.8 |
| Mojave Desert | 16.8 | 10.8 |
| Mountain Counties | 16.8 | 10.8 |
| North Central Coast | 17.1 | 12.3 |
| North Coast | 16.8 | 10.8 |
| Northeast Plateau | 16.8 | 10.8 |
| Sacramento Valley | 16.8 | 10.8 |
| Salton Sea | 14.6 | 11 |
| San Diego | 16.8 | 10.8 |
| San Francisco Bay Area | 10.8 | 10.8 |
| San Joaquin Valley | 16.8 | 10.8 |
| South Central Coast | 16.8 | 10.8 |
| South Coast | 19.8 | 14.7 |
| **Average** | **16.47** | **11.17** |
| **Mininum** | **10.80** | **10.80** |
| **Maximum** | **19.80** | **14.70** |
| **Range** | **9.00** | **3.90** |

# Village South Specific Plan (Proposed)

**Los Angeles-South Coast County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Office Building | 45.00 | 1000sqft | 1.03 | 45,000.00 | 0 |
| High Turnover (Sit Down Restaurant) | 36.00 | 1000sqft | 0.83 | 36,000.00 | 0 |
| Hotel | 50.00 | Room | 1.67 | 72,600.00 | 0 |
| Quality Restaurant | 8.00 | 1000sqft | 0.18 | 8,000.00 | 0 |
| Apartments Low Rise | 25.00 | Dwelling Unit | 1.56 | 25,000.00 | 72 |
| Apartments Mid Rise | 975.00 | Dwelling Unit | 25.66 | 975,000.00 | 2789 |
| Regional Shopping Center | 56.00 | 1000sqft | 1.29 | 56,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 33 |
| **Climate Zone** | 9 | | | **Operational Year** | 2028 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 702.44 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Annual

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment regarding residential and retail land uses.

Construction Phase - See SWAPE comment regarding individual construction phase lengths.

Demolition - Consistent with the DEIR's model. See SWAPE comment regarding demolition.

Vehicle Trips - Saturday trips consistent with the DEIR's model. See SWAPE comment regarding weekday and Sunday trips.

Woodstoves - Woodstoves and wood-burning fireplaces consistent with the DEIR's model. See SWAPE comment regarding gas fireplaces.

Energy Use -

Construction Off-road Equipment Mitigation - See SWAPE comment on construction-related mitigation.

Area Mitigation - See SWAPE comment regarding operational mitigation measures.

Water Mitigation - See SWAPE comment regarding operational mitigation measures.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblFireplaces | FireplaceWoodMass | 1,019.20 | 0.00 |
| tblFireplaces | FireplaceWoodMass | 1,019.20 | 0.00 |
| tblFireplaces | NumberWood | 1.25 | 0.00 |
| tblFireplaces | NumberWood | 48.75 | 0.00 |
| tblVehicleTrips | ST_TR | 7.16 | 6.17 |
| tblVehicleTrips | ST_TR | 6.39 | 3.87 |
| tblVehicleTrips | ST_TR | 2.46 | 1.39 |
| tblVehicleTrips | ST_TR | 158.37 | 79.82 |
| tblVehicleTrips | ST_TR | 8.19 | 3.75 |
| tblVehicleTrips | ST_TR | 94.36 | 63.99 |
| tblVehicleTrips | ST_TR | 49.97 | 10.74 |
| tblVehicleTrips | SU_TR | 6.07 | 6.16 |
| tblVehicleTrips | SU_TR | 5.86 | 4.18 |
| tblVehicleTrips | SU_TR | 1.05 | 0.69 |
| tblVehicleTrips | SU_TR | 131.84 | 78.27 |

| | | | |
|---|---|---|---|
| tblVehicleTrips | SU_TR | 5.95 | 3.20 |
| tblVehicleTrips | SU_TR | 72.16 | 57.65 |
| tblVehicleTrips | SU_TR | 25.24 | 6.39 |
| tblVehicleTrips | WD_TR | 6.59 | 5.83 |
| tblVehicleTrips | WD_TR | 6.65 | 4.13 |
| tblVehicleTrips | WD_TR | 11.03 | 6.41 |
| tblVehicleTrips | WD_TR | 127.15 | 65.80 |
| tblVehicleTrips | WD_TR | 8.17 | 3.84 |
| tblVehicleTrips | WD_TR | 89.95 | 62.64 |
| tblVehicleTrips | WD_TR | 42.70 | 9.43 |
| tblWoodstoves | NumberCatalytic | 1.25 | 0.00 |
| tblWoodstoves | NumberCatalytic | 48.75 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 1.25 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 48.75 | 0.00 |
| tblWoodstoves | WoodstoveDayYear | 25.00 | 0.00 |
| tblWoodstoves | WoodstoveDayYear | 25.00 | 0.00 |
| tblWoodstoves | WoodstoveWoodMass | 999.60 | 0.00 |
| tblWoodstoves | WoodstoveWoodMass | 999.60 | 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 | | | | | |
| 2021 | 0.1713 | 1.8242 | 1.1662 | 2.4000e-003 | 0.4169 | 0.0817 | 0.4986 | 0.1795 | 0.0754 | 0.2549 | 0.0000 | 213.1969 | 213.1969 | 0.0601 | 0.0000 | 214.6993 |
| 2022 | 0.6904 | 4.1142 | 6.1625 | 0.0189 | 1.3058 | 0.1201 | 1.4259 | 0.3460 | 0.1128 | 0.4588 | 0.0000 | 1,721.6826 | 1,721.6826 | 0.1294 | 0.0000 | 1,724.9187 |
| 2023 | 0.6148 | 3.3649 | 5.6747 | 0.0178 | 1.1963 | 0.0996 | 1.2959 | 0.3203 | 0.0935 | 0.4138 | 0.0000 | 1,627.5295 | 1,627.5295 | 0.1185 | 0.0000 | 1,630.4925 |
| 2024 | 4.1619 | 0.1335 | 0.2810 | 5.9000e-004 | 0.0325 | 6.4700e-003 | 0.0390 | 8.6300e-003 | 6.0400e-003 | 0.0147 | 0.0000 | 52.9078 | 52.9078 | 8.0200e-003 | 0.0000 | 53.1082 |
| **Maximum** | **4.1619** | **4.1142** | **6.1625** | **0.0189** | **1.3058** | **0.1201** | **1.4259** | **0.3460** | **0.1128** | **0.4588** | **0.0000** | **1,721.6826** | **1,721.6826** | **0.1294** | **0.0000** | **1,724.9187** |

## 2.1 Overall Construction

### 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 | | | | | |
| 2021 | 0.1713 | 1.8242 | 1.1662 | 2.4000e-003 | 0.4169 | 0.0817 | 0.4986 | 0.1795 | 0.0754 | 0.2549 | 0.0000 | 213.1967 | 213.1967 | 0.0601 | 0.0000 | 214.6991 |
| 2022 | 0.6904 | 4.1142 | 6.1625 | 0.0189 | 1.3058 | 0.1201 | 1.4259 | 0.3460 | 0.1128 | 0.4588 | 0.0000 | 1,721.6823 | 1,721.6823 | 0.1294 | 0.0000 | 1,724.9183 |
| 2023 | 0.6148 | 3.3648 | 5.6747 | 0.0178 | 1.1963 | 0.0996 | 1.2959 | 0.3203 | 0.0935 | 0.4138 | 0.0000 | 1,627.5291 | 1,627.5291 | 0.1185 | 0.0000 | 1,630.4921 |
| 2024 | 4.1619 | 0.1335 | 0.2810 | 5.9000e-004 | 0.0325 | 6.4700e-003 | 0.0390 | 8.6300e-003 | 6.0400e-003 | 0.0147 | 0.0000 | 52.9077 | 52.9077 | 8.0200e-003 | 0.0000 | 53.1082 |
| **Maximum** | **4.1619** | **4.1142** | **6.1625** | **0.0189** | **1.3058** | **0.1201** | **1.4259** | **0.3460** | **0.1128** | **0.4588** | **0.0000** | **1,721.6823** | **1,721.6823** | **0.1294** | **0.0000** | **1,724.9183** |

| | ROG | NOx | 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) |
|---|---|---|---|---|
| **1** | **9-1-2021** | **11-30-2021** | 1.4103 | 1.4103 |
| **2** | **12-1-2021** | **2-28-2022** | 1.3613 | 1.3613 |
| **3** | **3-1-2022** | **5-31-2022** | 1.1985 | 1.1985 |
| **4** | **6-1-2022** | **8-31-2022** | 1.1921 | 1.1921 |
| **5** | **9-1-2022** | **11-30-2022** | 1.1918 | 1.1918 |
| **6** | **12-1-2022** | **2-28-2023** | 1.0774 | 1.0774 |
| **7** | **3-1-2023** | **5-31-2023** | 1.0320 | 1.0320 |
| **8** | **6-1-2023** | **8-31-2023** | 1.0260 | 1.0260 |

| | | | | |
|---|---|---|---|---|
| **9** | **9-1-2023** | **11-30-2023** | 1.0265 | 1.0265 |
| **10** | **12-1-2023** | **2-29-2024** | 2.8857 | 2.8857 |
| **11** | **3-1-2024** | **5-31-2024** | 1.6207 | 1.6207 |
| | | **Highest** | 2.8857 | 2.8857 |

## 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 | 5.1437 | 0.2950 | 10.3804 | 1.6700e-003 | | 0.0714 | 0.0714 | | 0.0714 | 0.0714 | 0.0000 | 220.9670 | 220.9670 | 0.0201 | 3.7400e-003 | 222.5835 |
| Energy | 0.1398 | 1.2312 | 0.7770 | 7.6200e-003 | | 0.0966 | 0.0966 | | 0.0966 | 0.0966 | 0.0000 | 3,896.0732 | 3,896.0732 | 0.1303 | 0.0468 | 3,913.2833 |
| Mobile | 1.5857 | 7.9962 | 19.1834 | 0.0821 | 7.7979 | 0.0580 | 7.8559 | 2.0895 | 0.0539 | 2.1434 | 0.0000 | 7,620.4986 | 7,620.4986 | 0.3407 | 0.0000 | 7,629.0162 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 207.8079 | 0.0000 | 207.8079 | 12.2811 | 0.0000 | 514.8354 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 29.1632 | 556.6420 | 585.8052 | 3.0183 | 0.0755 | 683.7567 |
| **Total** | **6.8692** | **9.5223** | **30.3407** | **0.0914** | **7.7979** | **0.2260** | **8.0240** | **2.0895** | **0.2219** | **2.3114** | **236.9712** | **12,294.1807** | **12,531.1519** | **15.7904** | **0.1260** | **12,963.4751** |

## 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 | 5.1437 | 0.2950 | 10.3804 | 1.6700e-003 | | 0.0714 | 0.0714 | | 0.0714 | 0.0714 | 0.0000 | 220.9670 | 220.9670 | 0.0201 | 3.7400e-003 | 222.5835 |
| Energy | 0.1398 | 1.2312 | 0.7770 | 7.6200e-003 | | 0.0966 | 0.0966 | | 0.0966 | 0.0966 | 0.0000 | 3,896.0732 | 3,896.0732 | 0.1303 | 0.0468 | 3,913.2833 |
| Mobile | 1.5857 | 7.9962 | 19.1834 | 0.0821 | 7.7979 | 0.0580 | 7.8559 | 2.0895 | 0.0539 | 2.1434 | 0.0000 | 7,620.4986 | 7,620.4986 | 0.3407 | 0.0000 | 7,629.0162 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 207.8079 | 0.0000 | 207.8079 | 12.2811 | 0.0000 | 514.8354 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 29.1632 | 556.6420 | 585.8052 | 3.0183 | 0.0755 | 683.7567 |
| **Total** | **6.8692** | **9.5223** | **30.3407** | **0.0914** | **7.7979** | **0.2260** | **8.0240** | **2.0895** | **0.2219** | **2.3114** | **236.9712** | **12,294.1807** | **12,531.1519** | **15.7904** | **0.1260** | **12,963.4751** |

| | ROG | NOx | 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**

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Annual

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 9/1/2021 | 10/12/2021 | 5 | 30 | |
| 2 | Site Preparation | Site Preparation | 10/13/2021 | 11/9/2021 | 5 | 20 | |
| 3 | Grading | Grading | 11/10/2021 | 1/11/2022 | 5 | 45 | |
| 4 | Building Construction | Building Construction | 1/12/2022 | 12/12/2023 | 5 | 500 | |
| 5 | Paving | Paving | 12/13/2023 | 1/30/2024 | 5 | 35 | |
| 6 | Architectural Coating | Architectural Coating | 1/31/2024 | 3/19/2024 | 5 | 35 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 112.5**

**Acres of Paving: 0**

**Residential Indoor: 2,025,000; Residential Outdoor: 675,000; Non-Residential Indoor: 326,400; Non-Residential Outdoor: 108,800; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**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 | 15.00 | 0.00 | 458.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 801.00 | 143.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 160.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2021

**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 | | | | | 0.0496 | 0.0000 | 0.0496 | 7.5100e-003 | 0.0000 | 7.5100e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0475 | 0.4716 | 0.3235 | 5.8000e-004 | | 0.0233 | 0.0233 | | 0.0216 | 0.0216 | 0.0000 | 51.0012 | 51.0012 | 0.0144 | 0.0000 | 51.3601 |
| **Total** | **0.0475** | **0.4716** | **0.3235** | **5.8000e-004** | **0.0496** | **0.0233** | **0.0729** | **7.5100e-003** | **0.0216** | **0.0291** | **0.0000** | **51.0012** | **51.0012** | **0.0144** | **0.0000** | **51.3601** |

## 3.2 Demolition - 2021

### 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 | 1.9300e-003 | 0.0634 | 0.0148 | 1.8000e-004 | 3.9400e-003 | 1.9000e-004 | 4.1300e-003 | 1.0800e-003 | 1.8000e-004 | 1.2600e-003 | 0.0000 | 17.4566 | 17.4566 | 1.2100e-003 | 0.0000 | 17.4869 |
| 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 | 9.7000e-004 | 7.5000e-004 | 8.5100e-003 | 2.0000e-005 | 2.4700e-003 | 2.0000e-005 | 2.4900e-003 | 6.5000e-004 | 2.0000e-005 | 6.7000e-004 | 0.0000 | 2.2251 | 2.2251 | 7.0000e-005 | 0.0000 | 2.2267 |
| **Total** | **2.9000e-003** | **0.0641** | **0.0233** | **2.0000e-004** | **6.4100e-003** | **2.1000e-004** | **6.6200e-003** | **1.7300e-003** | **2.0000e-004** | **1.9300e-003** | **0.0000** | **19.6816** | **19.6816** | **1.2800e-003** | **0.0000** | **19.7136** |

### 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 | | | | | 0.0496 | 0.0000 | 0.0496 | 7.5100e-003 | 0.0000 | 7.5100e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0475 | 0.4716 | 0.3235 | 5.8000e-004 | | 0.0233 | 0.0233 | | 0.0216 | 0.0216 | 0.0000 | 51.0011 | 51.0011 | 0.0144 | 0.0000 | 51.3600 |
| **Total** | **0.0475** | **0.4716** | **0.3235** | **5.8000e-004** | **0.0496** | **0.0233** | **0.0729** | **7.5100e-003** | **0.0216** | **0.0291** | **0.0000** | **51.0011** | **51.0011** | **0.0144** | **0.0000** | **51.3600** |

## 3.2 Demolition - 2021

**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 | 1.9300e-003 | 0.0634 | 0.0148 | 1.8000e-004 | 3.9400e-003 | 1.9000e-004 | 4.1300e-003 | 1.0800e-003 | 1.8000e-004 | 1.2600e-003 | 0.0000 | 17.4566 | 17.4566 | 1.2100e-003 | 0.0000 | 17.4869 |
| 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 | 9.7000e-004 | 7.5000e-004 | 8.5100e-003 | 2.0000e-005 | 2.4700e-003 | 2.0000e-005 | 2.4900e-003 | 6.5000e-004 | 2.0000e-005 | 6.7000e-004 | 0.0000 | 2.2251 | 2.2251 | 7.0000e-005 | 0.0000 | 2.2267 |
| **Total** | **2.9000e-003** | **0.0641** | **0.0233** | **2.0000e-004** | **6.4100e-003** | **2.1000e-004** | **6.6200e-003** | **1.7300e-003** | **2.0000e-004** | **1.9300e-003** | **0.0000** | **19.6816** | **19.6816** | **1.2800e-003** | **0.0000** | **19.7136** |

## 3.3 Site Preparation - 2021

**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 | | | | | 0.1807 | 0.0000 | 0.1807 | 0.0993 | 0.0000 | 0.0993 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0389 | 0.4050 | 0.2115 | 3.8000e-004 | | 0.0204 | 0.0204 | | 0.0188 | 0.0188 | 0.0000 | 33.4357 | 33.4357 | 0.0108 | 0.0000 | 33.7061 |
| **Total** | **0.0389** | **0.4050** | **0.2115** | **3.8000e-004** | **0.1807** | **0.0204** | **0.2011** | **0.0993** | **0.0188** | **0.1181** | **0.0000** | **33.4357** | **33.4357** | **0.0108** | **0.0000** | **33.7061** |

## 3.3 Site Preparation - 2021

### 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 | 7.7000e-004 | 6.0000e-004 | 6.8100e-003 | 2.0000e-005 | 1.9700e-003 | 2.0000e-005 | 1.9900e-003 | 5.2000e-004 | 1.0000e-005 | 5.4000e-004 | 0.0000 | 1.7801 | 1.7801 | 5.0000e-005 | 0.0000 | 1.7814 |
| **Total** | **7.7000e-004** | **6.0000e-004** | **6.8100e-003** | **2.0000e-005** | **1.9700e-003** | **2.0000e-005** | **1.9900e-003** | **5.2000e-004** | **1.0000e-005** | **5.4000e-004** | **0.0000** | **1.7801** | **1.7801** | **5.0000e-005** | **0.0000** | **1.7814** |

### 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 | | | | | 0.1807 | 0.0000 | 0.1807 | 0.0993 | 0.0000 | 0.0993 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0389 | 0.4050 | 0.2115 | 3.8000e-004 | | 0.0204 | 0.0204 | | 0.0188 | 0.0188 | 0.0000 | 33.4357 | 33.4357 | 0.0108 | 0.0000 | 33.7060 |
| **Total** | **0.0389** | **0.4050** | **0.2115** | **3.8000e-004** | **0.1807** | **0.0204** | **0.2011** | **0.0993** | **0.0188** | **0.1181** | **0.0000** | **33.4357** | **33.4357** | **0.0108** | **0.0000** | **33.7060** |

## 3.3 Site Preparation - 2021

**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 | 7.7000e-004 | 6.0000e-004 | 6.8100e-003 | 2.0000e-005 | 1.9700e-003 | 2.0000e-005 | 1.9900e-003 | 5.2000e-004 | 1.0000e-005 | 5.4000e-004 | 0.0000 | 1.7801 | 1.7801 | 5.0000e-005 | 0.0000 | 1.7814 |
| **Total** | **7.7000e-004** | **6.0000e-004** | **6.8100e-003** | **2.0000e-005** | **1.9700e-003** | **2.0000e-005** | **1.9900e-003** | **5.2000e-004** | **1.0000e-005** | **5.4000e-004** | **0.0000** | **1.7801** | **1.7801** | **5.0000e-005** | **0.0000** | **1.7814** |

## 3.4 Grading - 2021

**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 | | | | | 0.1741 | 0.0000 | 0.1741 | 0.0693 | 0.0000 | 0.0693 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0796 | 0.8816 | 0.5867 | 1.1800e-003 | | 0.0377 | 0.0377 | | 0.0347 | 0.0347 | 0.0000 | 103.5405 | 103.5405 | 0.0335 | 0.0000 | 104.3776 |
| **Total** | **0.0796** | **0.8816** | **0.5867** | **1.1800e-003** | **0.1741** | **0.0377** | **0.2118** | **0.0693** | **0.0347** | **0.1040** | **0.0000** | **103.5405** | **103.5405** | **0.0335** | **0.0000** | **104.3776** |

## 3.4 Grading - 2021

### 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 | 1.6400e-003 | 1.2700e-003 | 0.0144 | 4.0000e-005 | 4.1600e-003 | 3.0000e-005 | 4.2000e-003 | 1.1100e-003 | 3.0000e-005 | 1.1400e-003 | 0.0000 | 3.7579 | 3.7579 | 1.1000e-004 | 0.0000 | 3.7607 |
| **Total** | **1.6400e-003** | **1.2700e-003** | **0.0144** | **4.0000e-005** | **4.1600e-003** | **3.0000e-005** | **4.2000e-003** | **1.1100e-003** | **3.0000e-005** | **1.1400e-003** | **0.0000** | **3.7579** | **3.7579** | **1.1000e-004** | **0.0000** | **3.7607** |

### 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 | | | | | 0.1741 | 0.0000 | 0.1741 | 0.0693 | 0.0000 | 0.0693 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0796 | 0.8816 | 0.5867 | 1.1800e-003 | | 0.0377 | 0.0377 | | 0.0347 | 0.0347 | 0.0000 | 103.5403 | 103.5403 | 0.0335 | 0.0000 | 104.3775 |
| **Total** | **0.0796** | **0.8816** | **0.5867** | **1.1800e-003** | **0.1741** | **0.0377** | **0.2118** | **0.0693** | **0.0347** | **0.1040** | **0.0000** | **103.5403** | **103.5403** | **0.0335** | **0.0000** | **104.3775** |

## 3.4 Grading - 2021

**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 | 1.6400e-003 | 1.2700e-003 | 0.0144 | 4.0000e-005 | 4.1600e-003 | 3.0000e-005 | 4.2000e-003 | 1.1100e-003 | 3.0000e-005 | 1.1400e-003 | 0.0000 | 3.7579 | 3.7579 | 1.1000e-004 | 0.0000 | 3.7607 |
| **Total** | **1.6400e-003** | **1.2700e-003** | **0.0144** | **4.0000e-005** | **4.1600e-003** | **3.0000e-005** | **4.2000e-003** | **1.1100e-003** | **3.0000e-005** | **1.1400e-003** | **0.0000** | **3.7579** | **3.7579** | **1.1000e-004** | **0.0000** | **3.7607** |

## 3.4 Grading - 2022

**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 | | | | | 0.0807 | 0.0000 | 0.0807 | 0.0180 | 0.0000 | 0.0180 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0127 | 0.1360 | 0.1017 | 2.2000e-004 | | 5.7200e-003 | 5.7200e-003 | | 5.2600e-003 | 5.2600e-003 | 0.0000 | 19.0871 | 19.0871 | 6.1700e-003 | 0.0000 | 19.2414 |
| **Total** | **0.0127** | **0.1360** | **0.1017** | **2.2000e-004** | **0.0807** | **5.7200e-003** | **0.0865** | **0.0180** | **5.2600e-003** | **0.0233** | **0.0000** | **19.0871** | **19.0871** | **6.1700e-003** | **0.0000** | **19.2414** |

## 3.4 Grading - 2022

### 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 | 2.8000e-004 | 2.1000e-004 | 2.4400e-003 | 1.0000e-005 | 7.7000e-004 | 1.0000e-005 | 7.7000e-004 | 2.0000e-004 | 1.0000e-005 | 2.1000e-004 | 0.0000 | 0.6679 | 0.6679 | 2.0000e-005 | 0.0000 | 0.6684 |
| **Total** | **2.8000e-004** | **2.1000e-004** | **2.4400e-003** | **1.0000e-005** | **7.7000e-004** | **1.0000e-005** | **7.7000e-004** | **2.0000e-004** | **1.0000e-005** | **2.1000e-004** | **0.0000** | **0.6679** | **0.6679** | **2.0000e-005** | **0.0000** | **0.6684** |

### 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 | | | | | 0.0807 | 0.0000 | 0.0807 | 0.0180 | 0.0000 | 0.0180 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0127 | 0.1360 | 0.1017 | 2.2000e-004 | | 5.7200e-003 | 5.7200e-003 | | 5.2600e-003 | 5.2600e-003 | 0.0000 | 19.0871 | 19.0871 | 6.1700e-003 | 0.0000 | 19.2414 |
| **Total** | **0.0127** | **0.1360** | **0.1017** | **2.2000e-004** | **0.0807** | **5.7200e-003** | **0.0865** | **0.0180** | **5.2600e-003** | **0.0233** | **0.0000** | **19.0871** | **19.0871** | **6.1700e-003** | **0.0000** | **19.2414** |

## 3.4 Grading - 2022

**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 | 2.8000e-004 | 2.1000e-004 | 2.4400e-003 | 1.0000e-005 | 7.7000e-004 | 1.0000e-005 | 7.7000e-004 | 2.0000e-004 | 1.0000e-005 | 2.1000e-004 | 0.0000 | 0.6679 | 0.6679 | 2.0000e-005 | 0.0000 | 0.6684 |
| **Total** | **2.8000e-004** | **2.1000e-004** | **2.4400e-003** | **1.0000e-005** | **7.7000e-004** | **1.0000e-005** | **7.7000e-004** | **2.0000e-004** | **1.0000e-005** | **2.1000e-004** | **0.0000** | **0.6679** | **0.6679** | **2.0000e-005** | **0.0000** | **0.6684** |

## 3.5 Building Construction - 2022

**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 | 0.2158 | 1.9754 | 2.0700 | 3.4100e-003 | | 0.1023 | 0.1023 | | 0.0963 | 0.0963 | 0.0000 | 293.1324 | 293.1324 | 0.0702 | 0.0000 | 294.8881 |
| **Total** | **0.2158** | **1.9754** | **2.0700** | **3.4100e-003** | | **0.1023** | **0.1023** | | **0.0963** | **0.0963** | **0.0000** | **293.1324** | **293.1324** | **0.0702** | **0.0000** | **294.8881** |

## 3.5 Building Construction - 2022

### 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 | 0.0527 | 1.6961 | 0.4580 | 4.5500e-003 | 0.1140 | 3.1800e-003 | 0.1171 | 0.0329 | 3.0400e-003 | 0.0359 | 0.0000 | 441.9835 | 441.9835 | 0.0264 | 0.0000 | 442.6435 |
| Worker | 0.4088 | 0.3066 | 3.5305 | 0.0107 | 1.1103 | 8.8700e-003 | 1.1192 | 0.2949 | 8.1700e-003 | 0.3031 | 0.0000 | 966.8117 | 966.8117 | 0.0266 | 0.0000 | 967.4773 |
| **Total** | **0.4616** | **2.0027** | **3.9885** | **0.0152** | **1.2243** | **0.0121** | **1.2363** | **0.3278** | **0.0112** | **0.3390** | **0.0000** | **1,408.7952** | **1,408.7952** | **0.0530** | **0.0000** | **1,410.1208** |

### 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 | 0.2158 | 1.9754 | 2.0700 | 3.4100e-003 | | 0.1023 | 0.1023 | | 0.0963 | 0.0963 | 0.0000 | 293.1321 | 293.1321 | 0.0702 | 0.0000 | 294.8877 |
| **Total** | **0.2158** | **1.9754** | **2.0700** | **3.4100e-003** | | **0.1023** | **0.1023** | | **0.0963** | **0.0963** | **0.0000** | **293.1321** | **293.1321** | **0.0702** | **0.0000** | **294.8877** |

## 3.5 Building Construction - 2022

**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 | 0.0527 | 1.6961 | 0.4580 | 4.5500e-003 | 0.1140 | 3.1800e-003 | 0.1171 | 0.0329 | 3.0400e-003 | 0.0359 | 0.0000 | 441.9835 | 441.9835 | 0.0264 | 0.0000 | 442.6435 |
| Worker | 0.4088 | 0.3066 | 3.5305 | 0.0107 | 1.1103 | 8.8700e-003 | 1.1192 | 0.2949 | 8.1700e-003 | 0.3031 | 0.0000 | 966.8117 | 966.8117 | 0.0266 | 0.0000 | 967.4773 |
| **Total** | **0.4616** | **2.0027** | **3.9885** | **0.0152** | **1.2243** | **0.0121** | **1.2363** | **0.3278** | **0.0112** | **0.3390** | **0.0000** | **1,408.7952** | **1,408.7952** | **0.0530** | **0.0000** | **1,410.1208** |

## 3.5 Building Construction - 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 | 0.1942 | 1.7765 | 2.0061 | 3.3300e-003 | | 0.0864 | 0.0864 | | 0.0813 | 0.0813 | 0.0000 | 286.2789 | 286.2789 | 0.0681 | 0.0000 | 287.9814 |
| **Total** | **0.1942** | **1.7765** | **2.0061** | **3.3300e-003** | | **0.0864** | **0.0864** | | **0.0813** | **0.0813** | **0.0000** | **286.2789** | **286.2789** | **0.0681** | **0.0000** | **287.9814** |

## 3.5 Building Construction - 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 | 0.0382 | 1.2511 | 0.4011 | 4.3000e-003 | 0.1113 | 1.4600e-003 | 0.1127 | 0.0321 | 1.4000e-003 | 0.0335 | 0.0000 | 417.9930 | 417.9930 | 0.0228 | 0.0000 | 418.5624 |
| Worker | 0.3753 | 0.2708 | 3.1696 | 0.0101 | 1.0840 | 8.4100e-003 | 1.0924 | 0.2879 | 7.7400e-003 | 0.2957 | 0.0000 | 909.3439 | 909.3439 | 0.0234 | 0.0000 | 909.9291 |
| **Total** | **0.4135** | **1.5218** | **3.5707** | **0.0144** | **1.1953** | **9.8700e-003** | **1.2051** | **0.3200** | **9.1400e-003** | **0.3292** | **0.0000** | **1,327.3369** | **1,327.3369** | **0.0462** | **0.0000** | **1,328.4916** |

### 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 | 0.1942 | 1.7765 | 2.0061 | 3.3300e-003 | | 0.0864 | 0.0864 | | 0.0813 | 0.0813 | 0.0000 | 286.2785 | 286.2785 | 0.0681 | 0.0000 | 287.9811 |
| **Total** | **0.1942** | **1.7765** | **2.0061** | **3.3300e-003** | | **0.0864** | **0.0864** | | **0.0813** | **0.0813** | **0.0000** | **286.2785** | **286.2785** | **0.0681** | **0.0000** | **287.9811** |

## 3.5 Building Construction - 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 | 0.0382 | 1.2511 | 0.4011 | 4.3000e-003 | 0.1113 | 1.4600e-003 | 0.1127 | 0.0321 | 1.4000e-003 | 0.0335 | 0.0000 | 417.9930 | 417.9930 | 0.0228 | 0.0000 | 418.5624 |
| Worker | 0.3753 | 0.2708 | 3.1696 | 0.0101 | 1.0840 | 8.4100e-003 | 1.0924 | 0.2879 | 7.7400e-003 | 0.2957 | 0.0000 | 909.3439 | 909.3439 | 0.0234 | 0.0000 | 909.9291 |
| **Total** | **0.4135** | **1.5218** | **3.5707** | **0.0144** | **1.1953** | **9.8700e-003** | **1.2051** | **0.3200** | **9.1400e-003** | **0.3292** | **0.0000** | **1,327.3369** | **1,327.3369** | **0.0462** | **0.0000** | **1,328.4916** |

## 3.6 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 | | | | | |
| Off-Road | 6.7100e-003 | 0.0663 | 0.0948 | 1.5000e-004 | | 3.3200e-003 | 3.3200e-003 | | 3.0500e-003 | 3.0500e-003 | 0.0000 | 13.0175 | 13.0175 | 4.2100e-003 | 0.0000 | 13.1227 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **6.7100e-003** | **0.0663** | **0.0948** | **1.5000e-004** | | **3.3200e-003** | **3.3200e-003** | | **3.0500e-003** | **3.0500e-003** | **0.0000** | **13.0175** | **13.0175** | **4.2100e-003** | **0.0000** | **13.1227** |

## 3.6 Paving - 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 | 3.7000e-004 | 2.7000e-004 | 3.1200e-003 | 1.0000e-005 | 1.0700e-003 | 1.0000e-005 | 1.0800e-003 | 2.8000e-004 | 1.0000e-005 | 2.9000e-004 | 0.0000 | 0.8963 | 0.8963 | 2.0000e-005 | 0.0000 | 0.8968 |
| **Total** | **3.7000e-004** | **2.7000e-004** | **3.1200e-003** | **1.0000e-005** | **1.0700e-003** | **1.0000e-005** | **1.0800e-003** | **2.8000e-004** | **1.0000e-005** | **2.9000e-004** | **0.0000** | **0.8963** | **0.8963** | **2.0000e-005** | **0.0000** | **0.8968** |

### 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 | 6.7100e-003 | 0.0663 | 0.0948 | 1.5000e-004 | | 3.3200e-003 | 3.3200e-003 | | 3.0500e-003 | 3.0500e-003 | 0.0000 | 13.0175 | 13.0175 | 4.2100e-003 | 0.0000 | 13.1227 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **6.7100e-003** | **0.0663** | **0.0948** | **1.5000e-004** | | **3.3200e-003** | **3.3200e-003** | | **3.0500e-003** | **3.0500e-003** | **0.0000** | **13.0175** | **13.0175** | **4.2100e-003** | **0.0000** | **13.1227** |

## 3.6 Paving - 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 | 3.7000e-004 | 2.7000e-004 | 3.1200e-003 | 1.0000e-005 | 1.0700e-003 | 1.0000e-005 | 1.0800e-003 | 2.8000e-004 | 1.0000e-005 | 2.9000e-004 | 0.0000 | 0.8963 | 0.8963 | 2.0000e-005 | 0.0000 | 0.8968 |
| **Total** | **3.7000e-004** | **2.7000e-004** | **3.1200e-003** | **1.0000e-005** | **1.0700e-003** | **1.0000e-005** | **1.0800e-003** | **2.8000e-004** | **1.0000e-005** | **2.9000e-004** | **0.0000** | **0.8963** | **0.8963** | **2.0000e-005** | **0.0000** | **0.8968** |

## 3.6 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 | | | | | |
| Off-Road | 0.0109 | 0.1048 | 0.1609 | 2.5000e-004 | | 5.1500e-003 | 5.1500e-003 | | 4.7400e-003 | 4.7400e-003 | 0.0000 | 22.0292 | 22.0292 | 7.1200e-003 | 0.0000 | 22.2073 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0109** | **0.1048** | **0.1609** | **2.5000e-004** | | **5.1500e-003** | **5.1500e-003** | | **4.7400e-003** | **4.7400e-003** | **0.0000** | **22.0292** | **22.0292** | **7.1200e-003** | **0.0000** | **22.2073** |

## 3.6 Paving - 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 | 5.9000e-004 | 4.1000e-004 | 4.9200e-003 | 2.0000e-005 | 1.8100e-003 | 1.0000e-005 | 1.8200e-003 | 4.8000e-004 | 1.0000e-005 | 4.9000e-004 | 0.0000 | 1.4697 | 1.4697 | 4.0000e-005 | 0.0000 | 1.4706 |
| **Total** | **5.9000e-004** | **4.1000e-004** | **4.9200e-003** | **2.0000e-005** | **1.8100e-003** | **1.0000e-005** | **1.8200e-003** | **4.8000e-004** | **1.0000e-005** | **4.9000e-004** | **0.0000** | **1.4697** | **1.4697** | **4.0000e-005** | **0.0000** | **1.4706** |

### 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 | 0.0109 | 0.1048 | 0.1609 | 2.5000e-004 | | 5.1500e-003 | 5.1500e-003 | | 4.7400e-003 | 4.7400e-003 | 0.0000 | 22.0292 | 22.0292 | 7.1200e-003 | 0.0000 | 22.2073 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0109** | **0.1048** | **0.1609** | **2.5000e-004** | | **5.1500e-003** | **5.1500e-003** | | **4.7400e-003** | **4.7400e-003** | **0.0000** | **22.0292** | **22.0292** | **7.1200e-003** | **0.0000** | **22.2073** |

## 3.6 Paving - 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 | 5.9000e-004 | 4.1000e-004 | 4.9200e-003 | 2.0000e-005 | 1.8100e-003 | 1.0000e-005 | 1.8200e-003 | 4.8000e-004 | 1.0000e-005 | 4.9000e-004 | 0.0000 | 1.4697 | 1.4697 | 4.0000e-005 | 0.0000 | 1.4706 |
| **Total** | **5.9000e-004** | **4.1000e-004** | **4.9200e-003** | **2.0000e-005** | **1.8100e-003** | **1.0000e-005** | **1.8200e-003** | **4.8000e-004** | **1.0000e-005** | **4.9000e-004** | **0.0000** | **1.4697** | **1.4697** | **4.0000e-005** | **0.0000** | **1.4706** |

## 3.7 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 | 4.1372 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.1600e-003 | 0.0213 | 0.0317 | 5.0000e-005 | | 1.0700e-003 | 1.0700e-003 | | 1.0700e-003 | 1.0700e-003 | 0.0000 | 4.4682 | 4.4682 | 2.5000e-004 | 0.0000 | 4.4745 |
| **Total** | **4.1404** | **0.0213** | **0.0317** | **5.0000e-005** | | **1.0700e-003** | **1.0700e-003** | | **1.0700e-003** | **1.0700e-003** | **0.0000** | **4.4682** | **4.4682** | **2.5000e-004** | **0.0000** | **4.4745** |

## 3.7 Architectural Coating - 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 | 0.0101 | 6.9900e-003 | 0.0835 | 2.8000e-004 | 0.0307 | 2.3000e-004 | 0.0309 | 8.1500e-003 | 2.2000e-004 | 8.3700e-003 | 0.0000 | 24.9407 | 24.9407 | 6.1000e-004 | 0.0000 | 24.9558 |
| **Total** | **0.0101** | **6.9900e-003** | **0.0835** | **2.8000e-004** | **0.0307** | **2.3000e-004** | **0.0309** | **8.1500e-003** | **2.2000e-004** | **8.3700e-003** | **0.0000** | **24.9407** | **24.9407** | **6.1000e-004** | **0.0000** | **24.9558** |

### 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 | 4.1372 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.1600e-003 | 0.0213 | 0.0317 | 5.0000e-005 | | 1.0700e-003 | 1.0700e-003 | | 1.0700e-003 | 1.0700e-003 | 0.0000 | 4.4682 | 4.4682 | 2.5000e-004 | 0.0000 | 4.4745 |
| **Total** | **4.1404** | **0.0213** | **0.0317** | **5.0000e-005** | | **1.0700e-003** | **1.0700e-003** | | **1.0700e-003** | **1.0700e-003** | **0.0000** | **4.4682** | **4.4682** | **2.5000e-004** | **0.0000** | **4.4745** |

### 3.7 Architectural Coating - 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 | 0.0101 | 6.9900e-003 | 0.0835 | 2.8000e-004 | 0.0307 | 2.3000e-004 | 0.0309 | 8.1500e-003 | 2.2000e-004 | 8.3700e-003 | 0.0000 | 24.9407 | 24.9407 | 6.1000e-004 | 0.0000 | 24.9558 |
| **Total** | **0.0101** | **6.9900e-003** | **0.0835** | **2.8000e-004** | **0.0307** | **2.3000e-004** | **0.0309** | **8.1500e-003** | **2.2000e-004** | **8.3700e-003** | **0.0000** | **24.9407** | **24.9407** | **6.1000e-004** | **0.0000** | **24.9558** |

## 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 | 1.5857 | 7.9962 | 19.1834 | 0.0821 | 7.7979 | 0.0580 | 7.8559 | 2.0895 | 0.0539 | 2.1434 | 0.0000 | 7,620.4986 | 7,620.4986 | 0.3407 | 0.0000 | 7,629.0162 |
| Unmitigated | 1.5857 | 7.9962 | 19.1834 | 0.0821 | 7.7979 | 0.0580 | 7.8559 | 2.0895 | 0.0539 | 2.1434 | 0.0000 | 7,620.4986 | 7,620.4986 | 0.3407 | 0.0000 | 7,629.0162 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 145.75 | 154.25 | 154.00 | 506,227 | 506,227 |
| Apartments Mid Rise | 4,026.75 | 3,773.25 | 4075.50 | 13,660,065 | 13,660,065 |
| General Office Building | 288.45 | 62.55 | 31.05 | 706,812 | 706,812 |
| High Turnover (Sit Down Restaurant) | 2,368.80 | 2,873.52 | 2817.72 | 3,413,937 | 3,413,937 |
| Hotel | 192.00 | 187.50 | 160.00 | 445,703 | 445,703 |
| Quality Restaurant | 501.12 | 511.92 | 461.20 | 707,488 | 707,488 |
| Regional Shopping Center | 528.08 | 601.44 | 357.84 | 1,112,221 | 1,112,221 |
| Total | 8,050.95 | 8,164.43 | 8,057.31 | 20,552,452 | 20,552,452 |

## 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 Low Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| Apartments Mid Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| General Office Building | 16.60 | 8.40 | 6.90 | 33.00 | 48.00 | 19.00 | 77 | 19 | 4 |
| High Turnover (Sit Down | 16.60 | 8.40 | 6.90 | 8.50 | 72.50 | 19.00 | 37 | 20 | 43 |
| Hotel | 16.60 | 8.40 | 6.90 | 19.40 | 61.60 | 19.00 | 58 | 38 | 4 |
| Quality Restaurant | 16.60 | 8.40 | 6.90 | 12.00 | 69.00 | 19.00 | 38 | 18 | 44 |
| Regional Shopping Center | 16.60 | 8.40 | 6.90 | 16.30 | 64.70 | 19.00 | 54 | 35 | 11 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Low Rise | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Apartments Mid Rise | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| General Office Building | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| High Turnover (Sit Down Restaurant) | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Hotel | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Quality Restaurant | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Regional Shopping Center | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Annual

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 2,512.6465 | 2,512.6465 | 0.1037 | 0.0215 | 2,521.6356 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2,512.6465 | 2,512.6465 | 0.1037 | 0.0215 | 2,521.6356 |
| NaturalGas Mitigated | 0.1398 | 1.2312 | 0.7770 | 7.6200e-003 | | 0.0966 | 0.0966 | | 0.0966 | 0.0966 | 0.0000 | 1,383.4267 | 1,383.4267 | 0.0265 | 0.0254 | 1,391.6478 |
| NaturalGas Unmitigated | 0.1398 | 1.2312 | 0.7770 | 7.6200e-003 | | 0.0966 | 0.0966 | | 0.0966 | 0.0966 | 0.0000 | 1,383.4267 | 1,383.4267 | 0.0265 | 0.0254 | 1,391.6478 |

## 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 Low Rise | 408494 | 2.2000e-003 | 0.0188 | 8.0100e-003 | 1.2000e-004 | | 1.5200e-003 | 1.5200e-003 | | 1.5200e-003 | 1.5200e-003 | 0.0000 | 21.7988 | 21.7988 | 4.2000e-004 | 4.0000e-004 | 21.9284 |
| Apartments Mid Rise | 1.30613e+007 | 0.0704 | 0.6018 | 0.2561 | 3.8400e-003 | | 0.0487 | 0.0487 | | 0.0487 | 0.0487 | 0.0000 | 696.9989 | 696.9989 | 0.0134 | 0.0128 | 701.1408 |
| General Office Building | 468450 | 2.5300e-003 | 0.0230 | 0.0193 | 1.4000e-004 | | 1.7500e-003 | 1.7500e-003 | | 1.7500e-003 | 1.7500e-003 | 0.0000 | 24.9983 | 24.9983 | 4.8000e-004 | 4.6000e-004 | 25.1468 |
| High Turnover (Sit Down Restaurant) | 8.30736e+006 | 0.0448 | 0.4072 | 0.3421 | 2.4400e-003 | | 0.0310 | 0.0310 | | 0.0310 | 0.0310 | 0.0000 | 443.3124 | 443.3124 | 8.5000e-003 | 8.1300e-003 | 445.9468 |
| Hotel | 1.74095e+006 | 9.3900e-003 | 0.0853 | 0.0717 | 5.1000e-004 | | 6.4900e-003 | 6.4900e-003 | | 6.4900e-003 | 6.4900e-003 | 0.0000 | 92.9036 | 92.9036 | 1.7800e-003 | 1.7000e-003 | 93.4557 |
| Quality Restaurant | 1.84608e+006 | 9.9500e-003 | 0.0905 | 0.0760 | 5.4000e-004 | | 6.8800e-003 | 6.8800e-003 | | 6.8800e-003 | 6.8800e-003 | 0.0000 | 98.5139 | 98.5139 | 1.8900e-003 | 1.8100e-003 | 99.0993 |
| Regional Shopping Center | 91840 | 5.0000e-004 | 4.5000e-003 | 3.7800e-003 | 3.0000e-005 | | 3.4000e-004 | 3.4000e-004 | | 3.4000e-004 | 3.4000e-004 | 0.0000 | 4.9009 | 4.9009 | 9.0000e-005 | 9.0000e-005 | 4.9301 |
| **Total** | | **0.1398** | **1.2312** | **0.7770** | **7.6200e-003** | | **0.0966** | **0.0966** | | **0.0966** | **0.0966** | **0.0000** | **1,383.4268** | **1,383.4268** | **0.0265** | **0.0254** | **1,391.6478** |

## 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 Low Rise | 408494 | 2.2000e-003 | 0.0188 | 8.0100e-003 | 1.2000e-004 | | 1.5200e-003 | 1.5200e-003 | | 1.5200e-003 | 1.5200e-003 | 0.0000 | 21.7988 | 21.7988 | 4.2000e-004 | 4.0000e-004 | 21.9284 |
| Apartments Mid Rise | 1.30613e+007 | 0.0704 | 0.6018 | 0.2561 | 3.8400e-003 | | 0.0487 | 0.0487 | | 0.0487 | 0.0487 | 0.0000 | 696.9989 | 696.9989 | 0.0134 | 0.0128 | 701.1408 |
| General Office Building | 468450 | 2.5300e-003 | 0.0230 | 0.0193 | 1.4000e-004 | | 1.7500e-003 | 1.7500e-003 | | 1.7500e-003 | 1.7500e-003 | 0.0000 | 24.9983 | 24.9983 | 4.8000e-004 | 4.6000e-004 | 25.1468 |
| High Turnover (Sit Down Restaurant) | 8.30736e+006 | 0.0448 | 0.4072 | 0.3421 | 2.4400e-003 | | 0.0310 | 0.0310 | | 0.0310 | 0.0310 | 0.0000 | 443.3124 | 443.3124 | 8.5000e-003 | 8.1300e-003 | 445.9468 |
| Hotel | 1.74095e+006 | 9.3900e-003 | 0.0853 | 0.0717 | 5.1000e-004 | | 6.4900e-003 | 6.4900e-003 | | 6.4900e-003 | 6.4900e-003 | 0.0000 | 92.9036 | 92.9036 | 1.7800e-003 | 1.7000e-003 | 93.4557 |
| Quality Restaurant | 1.84608e+006 | 9.9500e-003 | 0.0905 | 0.0760 | 5.4000e-004 | | 6.8800e-003 | 6.8800e-003 | | 6.8800e-003 | 6.8800e-003 | 0.0000 | 98.5139 | 98.5139 | 1.8900e-003 | 1.8100e-003 | 99.0993 |
| Regional Shopping Center | 91840 | 5.0000e-004 | 4.5000e-003 | 3.7800e-003 | 3.0000e-005 | | 3.4000e-004 | 3.4000e-004 | | 3.4000e-004 | 3.4000e-004 | 0.0000 | 4.9009 | 4.9009 | 9.0000e-005 | 9.0000e-005 | 4.9301 |
| **Total** | | **0.1398** | **1.2312** | **0.7770** | **7.6200e-003** | | **0.0966** | **0.0966** | | **0.0966** | **0.0966** | **0.0000** | **1,383.4268** | **1,383.4268** | **0.0265** | **0.0254** | **1,391.6478** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Low Rise | 106010 | 33.7770 | 1.3900e-003 | 2.9000e-004 | 33.8978 |
| Apartments Mid Rise | 3.94697e+006 | 1,257.5879 | 0.0519 | 0.0107 | 1,262.0869 |
| General Office Building | 584550 | 186.2502 | 7.6900e-003 | 1.5900e-003 | 186.9165 |
| High Turnover (Sit Down Restaurant) | 1.58904e+006 | 506.3022 | 0.0209 | 4.3200e-003 | 508.1135 |
| Hotel | 550308 | 175.3399 | 7.2400e-003 | 1.5000e-003 | 175.9672 |
| Quality Restaurant | 353120 | 112.5116 | 4.6500e-003 | 9.6000e-004 | 112.9141 |
| Regional Shopping Center | 756000 | 240.8778 | 9.9400e-003 | 2.0600e-003 | 241.7395 |
| **Total** | | **2,512.6465** | **0.1037** | **0.0215** | **2,521.6356** |

## 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Low Rise | 106010 | 33.7770 | 1.3900e-003 | 2.9000e-004 | 33.8978 |
| Apartments Mid Rise | 3.94697e+006 | 1,257.5879 | 0.0519 | 0.0107 | 1,262.0869 |
| General Office Building | 584550 | 186.2502 | 7.6900e-003 | 1.5900e-003 | 186.9165 |
| High Turnover (Sit Down Restaurant) | 1.58904e+006 | 506.3022 | 0.0209 | 4.3200e-003 | 508.1135 |
| Hotel | 550308 | 175.3399 | 7.2400e-003 | 1.5000e-003 | 175.9672 |
| Quality Restaurant | 353120 | 112.5116 | 4.6500e-003 | 9.6000e-004 | 112.9141 |
| Regional Shopping Center | 756000 | 240.8778 | 9.9400e-003 | 2.0600e-003 | 241.7395 |
| **Total** | | **2,512.6465** | **0.1037** | **0.0215** | **2,521.6356** |

# 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 | 5.1437 | 0.2950 | 10.3804 | 1.6700e-003 | | 0.0714 | 0.0714 | | 0.0714 | 0.0714 | 0.0000 | 220.9670 | 220.9670 | 0.0201 | 3.7400e-003 | 222.5835 |
| Unmitigated | 5.1437 | 0.2950 | 10.3804 | 1.6700e-003 | | 0.0714 | 0.0714 | | 0.0714 | 0.0714 | 0.0000 | 220.9670 | 220.9670 | 0.0201 | 3.7400e-003 | 222.5835 |

## 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 | 0.4137 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 4.3998 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.0206 | 0.1763 | 0.0750 | 1.1200e-003 | | 0.0143 | 0.0143 | | 0.0143 | 0.0143 | 0.0000 | 204.1166 | 204.1166 | 3.9100e-003 | 3.7400e-003 | 205.3295 |
| Landscaping | 0.3096 | 0.1187 | 10.3054 | 5.4000e-004 | | 0.0572 | 0.0572 | | 0.0572 | 0.0572 | 0.0000 | 16.8504 | 16.8504 | 0.0161 | 0.0000 | 17.2540 |
| **Total** | **5.1437** | **0.2950** | **10.3804** | **1.6600e-003** | | **0.0714** | **0.0714** | | **0.0714** | **0.0714** | **0.0000** | **220.9670** | **220.9670** | **0.0201** | **3.7400e-003** | **222.5835** |

### 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 | 0.4137 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 4.3998 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.0206 | 0.1763 | 0.0750 | 1.1200e-003 | | 0.0143 | 0.0143 | | 0.0143 | 0.0143 | 0.0000 | 204.1166 | 204.1166 | 3.9100e-003 | 3.7400e-003 | 205.3295 |
| Landscaping | 0.3096 | 0.1187 | 10.3054 | 5.4000e-004 | | 0.0572 | 0.0572 | | 0.0572 | 0.0572 | 0.0000 | 16.8504 | 16.8504 | 0.0161 | 0.0000 | 17.2540 |
| **Total** | **5.1437** | **0.2950** | **10.3804** | **1.6600e-003** | | **0.0714** | **0.0714** | | **0.0714** | **0.0714** | **0.0000** | **220.9670** | **220.9670** | **0.0201** | **3.7400e-003** | **222.5835** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 585.8052 | 3.0183 | 0.0755 | 683.7567 |
| Unmitigated | 585.8052 | 3.0183 | 0.0755 | 683.7567 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Low Rise | 1.62885 / 1.02688 | 10.9095 | 0.0535 | 1.3400e-003 | 12.6471 |
| Apartments Mid Rise | 63.5252 / 40.0485 | 425.4719 | 2.0867 | 0.0523 | 493.2363 |
| General Office Building | 7.99802 / 4.90201 | 53.0719 | 0.2627 | 6.5900e-003 | 61.6019 |
| High Turnover (Sit Down Restaurant) | 10.9272 / 0.697482 | 51.2702 | 0.3580 | 8.8200e-003 | 62.8482 |
| Hotel | 1.26834 / 0.140927 | 6.1633 | 0.0416 | 1.0300e-003 | 7.5079 |
| Quality Restaurant | 2.42827 / 0.154996 | 11.3934 | 0.0796 | 1.9600e-003 | 13.9663 |
| Regional Shopping Center | 4.14806 / 2.54236 | 27.5250 | 0.1363 | 3.4200e-003 | 31.9490 |
| **Total** | | **585.8052** | **3.0183** | **0.0755** | **683.7567** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Low Rise | 1.62885 / 1.02688 | 10.9095 | 0.0535 | 1.3400e-003 | 12.6471 |
| Apartments Mid Rise | 63.5252 / 40.0485 | 425.4719 | 2.0867 | 0.0523 | 493.2363 |
| General Office Building | 7.99802 / 4.90201 | 53.0719 | 0.2627 | 6.5900e-003 | 61.6019 |
| High Turnover (Sit Down Restaurant) | 10.9272 / 0.697482 | 51.2702 | 0.3580 | 8.8200e-003 | 62.8482 |
| Hotel | 1.26834 / 0.140927 | 6.1633 | 0.0416 | 1.0300e-003 | 7.5079 |
| Quality Restaurant | 2.42827 / 0.154996 | 11.3934 | 0.0796 | 1.9600e-003 | 13.9663 |
| Regional Shopping Center | 4.14806 / 2.54236 | 27.5250 | 0.1363 | 3.4200e-003 | 31.9490 |
| **Total** | | **585.8052** | **3.0183** | **0.0755** | **683.7567** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 207.8079 | 12.2811 | 0.0000 | 514.8354 |
| Unmitigated | 207.8079 | 12.2811 | 0.0000 | 514.8354 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Low Rise | 11.5 | 2.3344 | 0.1380 | 0.0000 | 5.7834 |
| Apartments Mid Rise | 448.5 | 91.0415 | 5.3804 | 0.0000 | 225.5513 |
| General Office Building | 41.85 | 8.4952 | 0.5021 | 0.0000 | 21.0464 |
| High Turnover (Sit Down Restaurant) | 428.4 | 86.9613 | 5.1393 | 0.0000 | 215.4430 |
| Hotel | 27.38 | 5.5579 | 0.3285 | 0.0000 | 13.7694 |
| Quality Restaurant | 7.3 | 1.4818 | 0.0876 | 0.0000 | 3.6712 |
| Regional Shopping Center | 58.8 | 11.9359 | 0.7054 | 0.0000 | 29.5706 |
| **Total** | | **207.8079** | **12.2811** | **0.0000** | **514.8354** |

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Low Rise | 11.5 | 2.3344 | 0.1380 | 0.0000 | 5.7834 |
| Apartments Mid Rise | 448.5 | 91.0415 | 5.3804 | 0.0000 | 225.5513 |
| General Office Building | 41.85 | 8.4952 | 0.5021 | 0.0000 | 21.0464 |
| High Turnover (Sit Down Restaurant) | 428.4 | 86.9613 | 5.1393 | 0.0000 | 215.4430 |
| Hotel | 27.38 | 5.5579 | 0.3285 | 0.0000 | 13.7694 |
| Quality Restaurant | 7.3 | 1.4818 | 0.0876 | 0.0000 | 3.6712 |
| Regional Shopping Center | 58.8 | 11.9359 | 0.7054 | 0.0000 | 29.5706 |
| **Total** | | **207.8079** | **12.2811** | **0.0000** | **514.8354** |

## 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

# Village South Specific Plan (Proposed)

**Los Angeles-South Coast County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Office Building | 45.00 | 1000sqft | 1.03 | 45,000.00 | 0 |
| High Turnover (Sit Down Restaurant) | 36.00 | 1000sqft | 0.83 | 36,000.00 | 0 |
| Hotel | 50.00 | Room | 1.67 | 72,600.00 | 0 |
| Quality Restaurant | 8.00 | 1000sqft | 0.18 | 8,000.00 | 0 |
| Apartments Low Rise | 25.00 | Dwelling Unit | 1.56 | 25,000.00 | 72 |
| Apartments Mid Rise | 975.00 | Dwelling Unit | 25.66 | 975,000.00 | 2789 |
| Regional Shopping Center | 56.00 | 1000sqft | 1.29 | 56,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 33 |
| **Climate Zone** | 9 | | | **Operational Year** | 2028 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 702.44 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Summer

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment regarding residential and retail land uses.

Construction Phase - See SWAPE comment regarding individual construction phase lengths.

Demolition - Consistent with the DEIR's model. See SWAPE comment regarding demolition.

Vehicle Trips - Saturday trips consistent with the DEIR's model. See SWAPE comment regarding weekday and Sunday trips.

Woodstoves - Woodstoves and wood-burning fireplaces consistent with the DEIR's model. See SWAPE comment regarding gas fireplaces.

Energy Use -

Construction Off-road Equipment Mitigation - See SWAPE comment on construction-related mitigation.

Area Mitigation - See SWAPE comment regarding operational mitigation measures.

Water Mitigation - See SWAPE comment regarding operational mitigation measures.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblFireplaces | FireplaceWoodMass | 1,019.20 | 0.00 |
| tblFireplaces | FireplaceWoodMass | 1,019.20 | 0.00 |
| tblFireplaces | NumberWood | 1.25 | 0.00 |
| tblFireplaces | NumberWood | 48.75 | 0.00 |
| tblVehicleTrips | ST_TR | 7.16 | 6.17 |
| tblVehicleTrips | ST_TR | 6.39 | 3.87 |
| tblVehicleTrips | ST_TR | 2.46 | 1.39 |
| tblVehicleTrips | ST_TR | 158.37 | 79.82 |
| tblVehicleTrips | ST_TR | 8.19 | 3.75 |
| tblVehicleTrips | ST_TR | 94.36 | 63.99 |
| tblVehicleTrips | ST_TR | 49.97 | 10.74 |
| tblVehicleTrips | SU_TR | 6.07 | 6.16 |
| tblVehicleTrips | SU_TR | 5.86 | 4.18 |
| tblVehicleTrips | SU_TR | 1.05 | 0.69 |
| tblVehicleTrips | SU_TR | 131.84 | 78.27 |

| | | | |
|---|---|---|---|
| tblVehicleTrips | SU_TR | 5.95 | 3.20 |
| tblVehicleTrips | SU_TR | 72.16 | 57.65 |
| tblVehicleTrips | SU_TR | 25.24 | 6.39 |
| tblVehicleTrips | WD_TR | 6.59 | 5.83 |
| tblVehicleTrips | WD_TR | 6.65 | 4.13 |
| tblVehicleTrips | WD_TR | 11.03 | 6.41 |
| tblVehicleTrips | WD_TR | 127.15 | 65.80 |
| tblVehicleTrips | WD_TR | 8.17 | 3.84 |
| tblVehicleTrips | WD_TR | 89.95 | 62.64 |
| tblVehicleTrips | WD_TR | 42.70 | 9.43 |
| tblWoodstoves | NumberCatalytic | 1.25 | 0.00 |
| tblWoodstoves | NumberCatalytic | 48.75 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 1.25 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 48.75 | 0.00 |
| tblWoodstoves | WoodstoveDayYear | 25.00 | 0.00 |
| tblWoodstoves | WoodstoveDayYear | 25.00 | 0.00 |
| tblWoodstoves | WoodstoveWoodMass | 999.60 | 0.00 |
| tblWoodstoves | WoodstoveWoodMass | 999.60 | 0.00 |

## 2.0 Emissions Summary

## 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 | | | | | |
| 2021 | 4.2769 | 46.4588 | 31.6840 | 0.0643 | 18.2675 | 2.0461 | 20.3135 | 9.9840 | 1.8824 | 11.8664 | 0.0000 | 6,234.7974 | 6,234.7974 | 1.9495 | 0.0000 | 6,283.5352 |
| 2022 | 5.3304 | 38.8967 | 49.5629 | 0.1517 | 9.8688 | 1.6366 | 10.7727 | 3.6558 | 1.5057 | 5.1615 | 0.0000 | 15,251.5674 | 15,251.5674 | 1.9503 | 0.0000 | 15,278.5288 |
| 2023 | 4.8957 | 26.3317 | 46.7567 | 0.1472 | 9.8688 | 0.7794 | 10.6482 | 2.6381 | 0.7322 | 3.3702 | 0.0000 | 14,807.5269 | 14,807.5269 | 1.0250 | 0.0000 | 14,833.1521 |
| 2024 | 237.1630 | 9.5575 | 15.1043 | 0.0244 | 1.7884 | 0.4698 | 1.8628 | 0.4743 | 0.4322 | 0.5476 | 0.0000 | 2,361.3989 | 2,361.3989 | 0.7177 | 0.0000 | 2,379.3421 |
| **Maximum** | **237.1630** | **46.4588** | **49.5629** | **0.1517** | **18.2675** | **2.0461** | **20.3135** | **9.9840** | **1.8824** | **11.8664** | **0.0000** | **15,251.5674** | **15,251.5674** | **1.9503** | **0.0000** | **15,278.5288** |

## 2.1 Overall Construction (Maximum Daily Emission)

**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 | | | | | |
| 2021 | 4.2769 | 46.4588 | 31.6840 | 0.0643 | 18.2675 | 2.0461 | 20.3135 | 9.9840 | 1.8824 | 11.8664 | 0.0000 | 6,234.7974 | 6,234.7974 | 1.9495 | 0.0000 | 6,283.5352 |
| 2022 | 5.3304 | 38.8967 | 49.5629 | 0.1517 | 9.8688 | 1.6366 | 10.7727 | 3.6558 | 1.5057 | 5.1615 | 0.0000 | 15,251.5674 | 15,251.5674 | 1.9503 | 0.0000 | 15,278.5288 |
| 2023 | 4.8957 | 26.3317 | 46.7567 | 0.1472 | 9.8688 | 0.7794 | 10.6482 | 2.6381 | 0.7322 | 3.3702 | 0.0000 | 14,807.5269 | 14,807.5269 | 1.0250 | 0.0000 | 14,833.1520 |
| 2024 | 237.1630 | 9.5575 | 15.1043 | 0.0244 | 1.7884 | 0.4698 | 1.8628 | 0.4743 | 0.4322 | 0.5476 | 0.0000 | 2,361.3989 | 2,361.3989 | 0.7177 | 0.0000 | 2,379.3421 |
| **Maximum** | **237.1630** | **46.4588** | **49.5629** | **0.1517** | **18.2675** | **2.0461** | **20.3135** | **9.9840** | **1.8824** | **11.8664** | **0.0000** | **15,251.5674** | **15,251.5674** | **1.9503** | **0.0000** | **15,278.5288** |

| | ROG | NOx | 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** |

## 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 | 30.5020 | 15.0496 | 88.4430 | 0.0944 | | 1.5974 | 1.5974 | | 1.5974 | 1.5974 | 0.0000 | 18,148.5950 | 18,148.5950 | 0.4874 | 0.3300 | 18,259.1192 |
| Energy | 0.7660 | 6.7462 | 4.2573 | 0.0418 | | 0.5292 | 0.5292 | | 0.5292 | 0.5292 | | 8,355.9832 | 8,355.9832 | 0.1602 | 0.1532 | 8,405.6387 |
| Mobile | 9.8489 | 45.4304 | 114.8495 | 0.4917 | 45.9592 | 0.3360 | 46.2951 | 12.2950 | 0.3119 | 12.6070 | | 50,306.6034 | 50,306.6034 | 2.1807 | | 50,361.1208 |
| **Total** | **41.1168** | **67.2262** | **207.5497** | **0.6278** | **45.9592** | **2.4626** | **48.4217** | **12.2950** | **2.4385** | **14.7336** | **0.0000** | **76,811.1816** | **76,811.1816** | **2.8282** | **0.4832** | **77,025.8786** |

### 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 | 30.5020 | 15.0496 | 88.4430 | 0.0944 | | 1.5974 | 1.5974 | | 1.5974 | 1.5974 | 0.0000 | 18,148.5950 | 18,148.5950 | 0.4874 | 0.3300 | 18,259.1192 |
| Energy | 0.7660 | 6.7462 | 4.2573 | 0.0418 | | 0.5292 | 0.5292 | | 0.5292 | 0.5292 | | 8,355.9832 | 8,355.9832 | 0.1602 | 0.1532 | 8,405.6387 |
| Mobile | 9.8489 | 45.4304 | 114.8495 | 0.4917 | 45.9592 | 0.3360 | 46.2951 | 12.2950 | 0.3119 | 12.6070 | | 50,306.6034 | 50,306.6034 | 2.1807 | | 50,361.1208 |
| **Total** | **41.1168** | **67.2262** | **207.5497** | **0.6278** | **45.9592** | **2.4626** | **48.4217** | **12.2950** | **2.4385** | **14.7336** | **0.0000** | **76,811.1816** | **76,811.1816** | **2.8282** | **0.4832** | **77,025.8786** |

| | ROG | NOx | 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 | 9/1/2021 | 10/12/2021 | 5 | 30 | |
| 2 | Site Preparation | Site Preparation | 10/13/2021 | 11/9/2021 | 5 | 20 | |
| 3 | Grading | Grading | 11/10/2021 | 1/11/2022 | 5 | 45 | |
| 4 | Building Construction | Building Construction | 1/12/2022 | 12/12/2023 | 5 | 500 | |
| 5 | Paving | Paving | 12/13/2023 | 1/30/2024 | 5 | 35 | |
| 6 | Architectural Coating | Architectural Coating | 1/31/2024 | 3/19/2024 | 5 | 35 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 112.5**

**Acres of Paving: 0**

**Residential Indoor: 2,025,000; Residential Outdoor: 675,000; Non-Residential Indoor: 326,400; Non-Residential Outdoor: 108,800; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Summer

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**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 | 15.00 | 0.00 | 458.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 801.00 | 143.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 160.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2021

**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 | | | | | 3.3074 | 0.0000 | 3.3074 | 0.5008 | 0.0000 | 0.5008 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1651 | 31.4407 | 21.5650 | 0.0388 | | 1.5513 | 1.5513 | | 1.4411 | 1.4411 | | 3,747.9449 | 3,747.9449 | 1.0549 | | 3,774.3174 |
| **Total** | **3.1651** | **31.4407** | **21.5650** | **0.0388** | **3.3074** | **1.5513** | **4.8588** | **0.5008** | **1.4411** | **1.9419** | | **3,747.9449** | **3,747.9449** | **1.0549** | | **3,774.3174** |

## 3.2 Demolition - 2021

### 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 | 0.1273 | 4.0952 | 0.9602 | 0.0119 | 0.2669 | 0.0126 | 0.2795 | 0.0732 | 0.0120 | 0.0852 | | 1,292.2413 | 1,292.2413 | 0.0877 | | 1,294.4337 |
| 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 |
| Worker | 0.0643 | 0.0442 | 0.6042 | 1.7100e-003 | 0.1677 | 1.3500e-003 | 0.1690 | 0.0445 | 1.2500e-003 | 0.0457 | | 170.8155 | 170.8155 | 5.0300e-003 | | 170.9413 |
| **Total** | **0.1916** | **4.1394** | **1.5644** | **0.0136** | **0.4346** | **0.0139** | **0.4485** | **0.1176** | **0.0133** | **0.1309** | | **1,463.0568** | **1,463.0568** | **0.0927** | | **1,465.3750** |

### 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 | | | | | 3.3074 | 0.0000 | 3.3074 | 0.5008 | 0.0000 | 0.5008 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1651 | 31.4407 | 21.5650 | 0.0388 | | 1.5513 | 1.5513 | | 1.4411 | 1.4411 | 0.0000 | 3,747.9449 | 3,747.9449 | 1.0549 | | 3,774.3174 |
| **Total** | **3.1651** | **31.4407** | **21.5650** | **0.0388** | **3.3074** | **1.5513** | **4.8588** | **0.5008** | **1.4411** | **1.9419** | **0.0000** | **3,747.9449** | **3,747.9449** | **1.0549** | | **3,774.3174** |

## 3.2 Demolition - 2021

**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 | 0.1273 | 4.0952 | 0.9602 | 0.0119 | 0.2669 | 0.0126 | 0.2795 | 0.0732 | 0.0120 | 0.0852 | | 1,292.2413 | 1,292.2413 | 0.0877 | | 1,294.4337 |
| 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 |
| Worker | 0.0643 | 0.0442 | 0.6042 | 1.7100e-003 | 0.1677 | 1.3500e-003 | 0.1690 | 0.0445 | 1.2500e-003 | 0.0457 | | 170.8155 | 170.8155 | 5.0300e-003 | | 170.9413 |
| **Total** | **0.1916** | **4.1394** | **1.5644** | **0.0136** | **0.4346** | **0.0139** | **0.4485** | **0.1176** | **0.0133** | **0.1309** | | **1,463.0568** | **1,463.0568** | **0.0927** | | **1,465.3750** |

## 3.3 Site Preparation - 2021

**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 | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.8882 | 40.4971 | 21.1543 | 0.0380 | | 2.0445 | 2.0445 | | 1.8809 | 1.8809 | | 3,685.6569 | 3,685.6569 | 1.1920 | | 3,715.4573 |
| **Total** | **3.8882** | **40.4971** | **21.1543** | **0.0380** | **18.0663** | **2.0445** | **20.1107** | **9.9307** | **1.8809** | **11.8116** | | **3,685.6569** | **3,685.6569** | **1.1920** | | **3,715.4573** |

## 3.3 Site Preparation - 2021

### 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 |
| 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 |
| Worker | 0.0772 | 0.0530 | 0.7250 | 2.0600e-003 | 0.2012 | 1.6300e-003 | 0.2028 | 0.0534 | 1.5000e-003 | 0.0549 | | 204.9786 | 204.9786 | 6.0400e-003 | | 205.1296 |
| **Total** | **0.0772** | **0.0530** | **0.7250** | **2.0600e-003** | **0.2012** | **1.6300e-003** | **0.2028** | **0.0534** | **1.5000e-003** | **0.0549** | | **204.9786** | **204.9786** | **6.0400e-003** | | **205.1296** |

### 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 | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.8882 | 40.4971 | 21.1543 | 0.0380 | | 2.0445 | 2.0445 | | 1.8809 | 1.8809 | 0.0000 | 3,685.6569 | 3,685.6569 | 1.1920 | | 3,715.4573 |
| **Total** | **3.8882** | **40.4971** | **21.1543** | **0.0380** | **18.0663** | **2.0445** | **20.1107** | **9.9307** | **1.8809** | **11.8116** | **0.0000** | **3,685.6569** | **3,685.6569** | **1.1920** | | **3,715.4573** |

## 3.3 Site Preparation - 2021

**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 |
| 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 |
| Worker | 0.0772 | 0.0530 | 0.7250 | 2.0600e-003 | 0.2012 | 1.6300e-003 | 0.2028 | 0.0534 | 1.5000e-003 | 0.0549 | | 204.9786 | 204.9786 | 6.0400e-003 | | 205.1296 |
| **Total** | **0.0772** | **0.0530** | **0.7250** | **2.0600e-003** | **0.2012** | **1.6300e-003** | **0.2028** | **0.0534** | **1.5000e-003** | **0.0549** | | **204.9786** | **204.9786** | **6.0400e-003** | | **205.1296** |

## 3.4 Grading - 2021

**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 | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.1912 | 46.3998 | 30.8785 | 0.0620 | | 1.9853 | 1.9853 | | 1.8265 | 1.8265 | | 6,007.0434 | 6,007.0434 | 1.9428 | | 6,055.6134 |
| **Total** | **4.1912** | **46.3998** | **30.8785** | **0.0620** | **8.6733** | **1.9853** | **10.6587** | **3.5965** | **1.8265** | **5.4230** | | **6,007.0434** | **6,007.0434** | **1.9428** | | **6,055.6134** |

## 3.4 Grading - 2021

### 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 |
| 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 |
| Worker | 0.0857 | 0.0589 | 0.8056 | 2.2900e-003 | 0.2236 | 1.8100e-003 | 0.2254 | 0.0593 | 1.6600e-003 | 0.0610 | | 227.7540 | 227.7540 | 6.7100e-003 | | 227.9217 |
| **Total** | **0.0857** | **0.0589** | **0.8056** | **2.2900e-003** | **0.2236** | **1.8100e-003** | **0.2254** | **0.0593** | **1.6600e-003** | **0.0610** | | **227.7540** | **227.7540** | **6.7100e-003** | | **227.9217** |

### 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 | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.1912 | 46.3998 | 30.8785 | 0.0620 | | 1.9853 | 1.9853 | | 1.8265 | 1.8265 | 0.0000 | 6,007.0434 | 6,007.0434 | 1.9428 | | 6,055.6134 |
| **Total** | **4.1912** | **46.3998** | **30.8785** | **0.0620** | **8.6733** | **1.9853** | **10.6587** | **3.5965** | **1.8265** | **5.4230** | **0.0000** | **6,007.0434** | **6,007.0434** | **1.9428** | | **6,055.6134** |

## 3.4 Grading - 2021

**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 |
| 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 |
| Worker | 0.0857 | 0.0589 | 0.8056 | 2.2900e-003 | 0.2236 | 1.8100e-003 | 0.2254 | 0.0593 | 1.6600e-003 | 0.0610 | | 227.7540 | 227.7540 | 6.7100e-003 | | 227.9217 |
| **Total** | **0.0857** | **0.0589** | **0.8056** | **2.2900e-003** | **0.2236** | **1.8100e-003** | **0.2254** | **0.0593** | **1.6600e-003** | **0.0610** | | **227.7540** | **227.7540** | **6.7100e-003** | | **227.9217** |

## 3.4 Grading - 2022

**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 | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **8.6733** | **1.6349** | **10.3082** | **3.5965** | **1.5041** | **5.1006** | | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

## 3.4 Grading - 2022

### 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 |
| 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 |
| Worker | 0.0803 | 0.0532 | 0.7432 | 2.2100e-003 | 0.2236 | 1.7500e-003 | 0.2253 | 0.0593 | 1.6100e-003 | 0.0609 | | 219.7425 | 219.7425 | 6.0600e-003 | | 219.8941 |
| **Total** | **0.0803** | **0.0532** | **0.7432** | **2.2100e-003** | **0.2236** | **1.7500e-003** | **0.2253** | **0.0593** | **1.6100e-003** | **0.0609** | | **219.7425** | **219.7425** | **6.0600e-003** | | **219.8941** |

### 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 | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | 0.0000 | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **8.6733** | **1.6349** | **10.3082** | **3.5965** | **1.5041** | **5.1006** | **0.0000** | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

## 3.4 Grading - 2022

**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 |
| 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 |
| Worker | 0.0803 | 0.0532 | 0.7432 | 2.2100e-003 | 0.2236 | 1.7500e-003 | 0.2253 | 0.0593 | 1.6100e-003 | 0.0609 | | 219.7425 | 219.7425 | 6.0600e-003 | | 219.8941 |
| **Total** | **0.0803** | **0.0532** | **0.7432** | **2.2100e-003** | **0.2236** | **1.7500e-003** | **0.2253** | **0.0593** | **1.6100e-003** | **0.0609** | | **219.7425** | **219.7425** | **6.0600e-003** | | **219.8941** |

## 3.5 Building Construction - 2022

**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 | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

## 3.5 Building Construction - 2022

### 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 |
| Vendor | 0.4079 | 13.2032 | 3.4341 | 0.0364 | 0.9155 | 0.0248 | 0.9404 | 0.2636 | 0.0237 | 0.2873 | | 3,896.5482 | 3,896.5482 | 0.2236 | | 3,902.1384 |
| Worker | 3.2162 | 2.1318 | 29.7654 | 0.0883 | 8.9533 | 0.0701 | 9.0234 | 2.3745 | 0.0646 | 2.4390 | | 8,800.6857 | 8,800.6857 | 0.2429 | | 8,806.7582 |
| **Total** | **3.6242** | **15.3350** | **33.1995** | **0.1247** | **9.8688** | **0.0949** | **9.9637** | **2.6381** | **0.0883** | **2.7263** | | **12,697.2339** | **12,697.2339** | **0.4665** | | **12,708.8966** |

### 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 | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | 0.0000 | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | **0.0000** | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

## 3.5 Building Construction - 2022

**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 |
| Vendor | 0.4079 | 13.2032 | 3.4341 | 0.0364 | 0.9155 | 0.0248 | 0.9404 | 0.2636 | 0.0237 | 0.2873 | | 3,896.5482 | 3,896.5482 | 0.2236 | | 3,902.1384 |
| Worker | 3.2162 | 2.1318 | 29.7654 | 0.0883 | 8.9533 | 0.0701 | 9.0234 | 2.3745 | 0.0646 | 2.4390 | | 8,800.6857 | 8,800.6857 | 0.2429 | | 8,806.7582 |
| **Total** | **3.6242** | **15.3350** | **33.1995** | **0.1247** | **9.8688** | **0.0949** | **9.9637** | **2.6381** | **0.0883** | **2.7263** | | **12,697.2339** | **12,697.2339** | **0.4665** | | **12,708.8966** |

## 3.5 Building Construction - 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 | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

## 3.5 Building Construction - 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 |
| Vendor | 0.3027 | 10.0181 | 3.1014 | 0.0352 | 0.9156 | 0.0116 | 0.9271 | 0.2636 | 0.0111 | 0.2747 | | 3,773.8762 | 3,773.8762 | 0.1982 | | 3,778.8300 |
| Worker | 3.0203 | 1.9287 | 27.4113 | 0.0851 | 8.9533 | 0.0681 | 9.0214 | 2.3745 | 0.0627 | 2.4372 | | 8,478.4408 | 8,478.4408 | 0.2190 | | 8,483.9160 |
| **Total** | **3.3229** | **11.9468** | **30.5127** | **0.1203** | **9.8688** | **0.0797** | **9.9485** | **2.6381** | **0.0738** | **2.7118** | | **12,252.3170** | **12,252.3170** | **0.4172** | | **12,262.7460** |

### 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 | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | 0.0000 | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | **0.0000** | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

## 3.5 Building Construction - 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 |
| Vendor | 0.3027 | 10.0181 | 3.1014 | 0.0352 | 0.9156 | 0.0116 | 0.9271 | 0.2636 | 0.0111 | 0.2747 | | 3,773.8762 | 3,773.8762 | 0.1982 | | 3,778.8300 |
| Worker | 3.0203 | 1.9287 | 27.4113 | 0.0851 | 8.9533 | 0.0681 | 9.0214 | 2.3745 | 0.0627 | 2.4372 | | 8,478.4408 | 8,478.4408 | 0.2190 | | 8,483.9160 |
| **Total** | **3.3229** | **11.9468** | **30.5127** | **0.1203** | **9.8688** | **0.0797** | **9.9485** | **2.6381** | **0.0738** | **2.7118** | | **12,252.3170** | **12,252.3170** | **0.4172** | | **12,262.7460** |

## 3.6 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

## 3.6 Paving - 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 |
| 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 |
| Worker | 0.0566 | 0.0361 | 0.5133 | 1.5900e-003 | 0.1677 | 1.2800e-003 | 0.1689 | 0.0445 | 1.1700e-003 | 0.0456 | | 158.7723 | 158.7723 | 4.1000e-003 | | 158.8748 |
| **Total** | **0.0566** | **0.0361** | **0.5133** | **1.5900e-003** | **0.1677** | **1.2800e-003** | **0.1689** | **0.0445** | **1.1700e-003** | **0.0456** | | **158.7723** | **158.7723** | **4.1000e-003** | | **158.8748** |

### 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 | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | 0.0000 | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | **0.0000** | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

## 3.6 Paving - 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 |
| 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 |
| Worker | 0.0566 | 0.0361 | 0.5133 | 1.5900e-003 | 0.1677 | 1.2800e-003 | 0.1689 | 0.0445 | 1.1700e-003 | 0.0456 | | 158.7723 | 158.7723 | 4.1000e-003 | | 158.8748 |
| **Total** | **0.0566** | **0.0361** | **0.5133** | **1.5900e-003** | **0.1677** | **1.2800e-003** | **0.1689** | **0.0445** | **1.1700e-003** | **0.0456** | | **158.7723** | **158.7723** | **4.1000e-003** | | **158.8748** |

## 3.6 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9882 | 9.5246 | 14.6258 | 0.0228 | | 0.4685 | 0.4685 | | 0.4310 | 0.4310 | | 2,207.5472 | 2,207.5472 | 0.7140 | | 2,225.3963 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.9882** | **9.5246** | **14.6258** | **0.0228** | | **0.4685** | **0.4685** | | **0.4310** | **0.4310** | | **2,207.5472** | **2,207.5472** | **0.7140** | | **2,225.3963** |

## 3.6 Paving - 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 |
| 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 |
| Worker | 0.0535 | 0.0329 | 0.4785 | 1.5400e-003 | 0.1677 | 1.2600e-003 | 0.1689 | 0.0445 | 1.1600e-003 | 0.0456 | | 153.8517 | 153.8517 | 3.7600e-003 | | 153.9458 |
| **Total** | **0.0535** | **0.0329** | **0.4785** | **1.5400e-003** | **0.1677** | **1.2600e-003** | **0.1689** | **0.0445** | **1.1600e-003** | **0.0456** | | **153.8517** | **153.8517** | **3.7600e-003** | | **153.9458** |

### 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 | | | | | |
| Off-Road | 0.9882 | 9.5246 | 14.6258 | 0.0228 | | 0.4685 | 0.4685 | | 0.4310 | 0.4310 | 0.0000 | 2,207.5472 | 2,207.5472 | 0.7140 | | 2,225.3963 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.9882** | **9.5246** | **14.6258** | **0.0228** | | **0.4685** | **0.4685** | | **0.4310** | **0.4310** | **0.0000** | **2,207.5472** | **2,207.5472** | **0.7140** | | **2,225.3963** |

## 3.6 Paving - 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 |
| 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 |
| Worker | 0.0535 | 0.0329 | 0.4785 | 1.5400e-003 | 0.1677 | 1.2600e-003 | 0.1689 | 0.0445 | 1.1600e-003 | 0.0456 | | 153.8517 | 153.8517 | 3.7600e-003 | | 153.9458 |
| **Total** | **0.0535** | **0.0329** | **0.4785** | **1.5400e-003** | **0.1677** | **1.2600e-003** | **0.1689** | **0.0445** | **1.1600e-003** | **0.0456** | | **153.8517** | **153.8517** | **3.7600e-003** | | **153.9458** |

## 3.7 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 236.4115 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **236.5923** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

## 3.7 Architectural Coating - 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 |
| 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 |
| Worker | 0.5707 | 0.3513 | 5.1044 | 0.0165 | 1.7884 | 0.0134 | 1.8018 | 0.4743 | 0.0123 | 0.4866 | | 1,641.0852 | 1,641.0852 | 0.0401 | | 1,642.0886 |
| **Total** | **0.5707** | **0.3513** | **5.1044** | **0.0165** | **1.7884** | **0.0134** | **1.8018** | **0.4743** | **0.0123** | **0.4866** | | **1,641.0852** | **1,641.0852** | **0.0401** | | **1,642.0886** |

### 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 | 236.4115 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | 0.0000 | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **236.5923** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | **0.0000** | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

### 3.7 Architectural Coating - 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 |
| 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 |
| Worker | 0.5707 | 0.3513 | 5.1044 | 0.0165 | 1.7884 | 0.0134 | 1.8018 | 0.4743 | 0.0123 | 0.4866 | | 1,641.0852 | 1,641.0852 | 0.0401 | | 1,642.0886 |
| **Total** | **0.5707** | **0.3513** | **5.1044** | **0.0165** | **1.7884** | **0.0134** | **1.8018** | **0.4743** | **0.0123** | **0.4866** | | **1,641.0852** | **1,641.0852** | **0.0401** | | **1,642.0886** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 9.8489 | 45.4304 | 114.8495 | 0.4917 | 45.9592 | 0.3360 | 46.2951 | 12.2950 | 0.3119 | 12.6070 | | 50,306.6034 | 50,306.6034 | 2.1807 | | 50,361.1208 |
| Unmitigated | 9.8489 | 45.4304 | 114.8495 | 0.4917 | 45.9592 | 0.3360 | 46.2951 | 12.2950 | 0.3119 | 12.6070 | | 50,306.6034 | 50,306.6034 | 2.1807 | | 50,361.1208 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 145.75 | 154.25 | 154.00 | 506,227 | 506,227 |
| Apartments Mid Rise | 4,026.75 | 3,773.25 | 4075.50 | 13,660,065 | 13,660,065 |
| General Office Building | 288.45 | 62.55 | 31.05 | 706,812 | 706,812 |
| High Turnover (Sit Down Restaurant) | 2,368.80 | 2,873.52 | 2817.72 | 3,413,937 | 3,413,937 |
| Hotel | 192.00 | 187.50 | 160.00 | 445,703 | 445,703 |
| Quality Restaurant | 501.12 | 511.92 | 461.20 | 707,488 | 707,488 |
| Regional Shopping Center | 528.08 | 601.44 | 357.84 | 1,112,221 | 1,112,221 |
| Total | 8,050.95 | 8,164.43 | 8,057.31 | 20,552,452 | 20,552,452 |

## 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 Low Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| Apartments Mid Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| General Office Building | 16.60 | 8.40 | 6.90 | 33.00 | 48.00 | 19.00 | 77 | 19 | 4 |
| High Turnover (Sit Down | 16.60 | 8.40 | 6.90 | 8.50 | 72.50 | 19.00 | 37 | 20 | 43 |
| Hotel | 16.60 | 8.40 | 6.90 | 19.40 | 61.60 | 19.00 | 58 | 38 | 4 |
| Quality Restaurant | 16.60 | 8.40 | 6.90 | 12.00 | 69.00 | 19.00 | 38 | 18 | 44 |
| Regional Shopping Center | 16.60 | 8.40 | 6.90 | 16.30 | 64.70 | 19.00 | 54 | 35 | 11 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Low Rise | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Apartments Mid Rise | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| General Office Building | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| High Turnover (Sit Down Restaurant) | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Hotel | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Quality Restaurant | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Regional Shopping Center | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Summer

| | ROG | NOx | CO | SO2 | Fugitive 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 | 0.7660 | 6.7462 | 4.2573 | 0.0418 | | 0.5292 | 0.5292 | | 0.5292 | 0.5292 | | 8,355.9832 | 8,355.9832 | 0.1602 | 0.1532 | 8,405.6387 |
| NaturalGas Unmitigated | 0.7660 | 6.7462 | 4.2573 | 0.0418 | | 0.5292 | 0.5292 | | 0.5292 | 0.5292 | | 8,355.9832 | 8,355.9832 | 0.1602 | 0.1532 | 8,405.6387 |

## 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 Low Rise | 1119.16 | 0.0121 | 0.1031 | 0.0439 | 6.6000e-004 | | 8.3400e-003 | 8.3400e-003 | | 8.3400e-003 | 8.3400e-003 | | 131.6662 | 131.6662 | 2.5200e-003 | 2.4100e-003 | 132.4486 |
| Apartments Mid Rise | 35784.3 | 0.3859 | 3.2978 | 1.4033 | 0.0211 | | 0.2666 | 0.2666 | | 0.2666 | 0.2666 | | 4,209.9164 | 4,209.9164 | 0.0807 | 0.0772 | 4,234.9339 |
| General Office Building | 1283.42 | 0.0138 | 0.1258 | 0.1057 | 7.5000e-004 | | 9.5600e-003 | 9.5600e-003 | | 9.5600e-003 | 9.5600e-003 | | 150.9911 | 150.9911 | 2.8900e-003 | 2.7700e-003 | 151.8884 |
| High Turnover (Sit Down Restaurant) | 22759.9 | 0.2455 | 2.2314 | 1.8743 | 0.0134 | | 0.1696 | 0.1696 | | 0.1696 | 0.1696 | | 2,677.6342 | 2,677.6342 | 0.0513 | 0.0491 | 2,693.5460 |
| Hotel | 4769.72 | 0.0514 | 0.4676 | 0.3928 | 2.8100e-003 | | 0.0355 | 0.0355 | | 0.0355 | 0.0355 | | 561.1436 | 561.1436 | 0.0108 | 0.0103 | 564.4782 |
| Quality Restaurant | 5057.75 | 0.0545 | 0.4959 | 0.4165 | 2.9800e-003 | | 0.0377 | 0.0377 | | 0.0377 | 0.0377 | | 595.0298 | 595.0298 | 0.0114 | 0.0109 | 598.5658 |
| Regional Shopping Center | 251.616 | 2.7100e-003 | 0.0247 | 0.0207 | 1.5000e-004 | | 1.8700e-003 | 1.8700e-003 | | 1.8700e-003 | 1.8700e-003 | | 29.6019 | 29.6019 | 5.7000e-004 | 5.4000e-004 | 29.7778 |
| **Total** | | **0.7660** | **6.7463** | **4.2573** | **0.0418** | | **0.5292** | **0.5292** | | **0.5292** | **0.5292** | | **8,355.9832** | **8,355.9832** | **0.1602** | **0.1532** | **8,405.6387** |

## 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 Low Rise | 1.11916 | 0.0121 | 0.1031 | 0.0439 | 6.6000e-004 | | 8.3400e-003 | 8.3400e-003 | | 8.3400e-003 | 8.3400e-003 | | 131.6662 | 131.6662 | 2.5200e-003 | 2.4100e-003 | 132.4486 |
| Apartments Mid Rise | 35.7843 | 0.3859 | 3.2978 | 1.4033 | 0.0211 | | 0.2666 | 0.2666 | | 0.2666 | 0.2666 | | 4,209.9164 | 4,209.9164 | 0.0807 | 0.0772 | 4,234.9339 |
| General Office Building | 1.28342 | 0.0138 | 0.1258 | 0.1057 | 7.5000e-004 | | 9.5600e-003 | 9.5600e-003 | | 9.5600e-003 | 9.5600e-003 | | 150.9911 | 150.9911 | 2.8900e-003 | 2.7700e-003 | 151.8884 |
| High Turnover (Sit Down Restaurant) | 22.7599 | 0.2455 | 2.2314 | 1.8743 | 0.0134 | | 0.1696 | 0.1696 | | 0.1696 | 0.1696 | | 2,677.6342 | 2,677.6342 | 0.0513 | 0.0491 | 2,693.5460 |
| Hotel | 4.76972 | 0.0514 | 0.4676 | 0.3928 | 2.8100e-003 | | 0.0355 | 0.0355 | | 0.0355 | 0.0355 | | 561.1436 | 561.1436 | 0.0108 | 0.0103 | 564.4782 |
| Quality Restaurant | 5.05775 | 0.0545 | 0.4959 | 0.4165 | 2.9800e-003 | | 0.0377 | 0.0377 | | 0.0377 | 0.0377 | | 595.0298 | 595.0298 | 0.0114 | 0.0109 | 598.5658 |
| Regional Shopping Center | 0.251616 | 2.7100e-003 | 0.0247 | 0.0207 | 1.5000e-004 | | 1.8700e-003 | 1.8700e-003 | | 1.8700e-003 | 1.8700e-003 | | 29.6019 | 29.6019 | 5.7000e-004 | 5.4000e-004 | 29.7778 |
| **Total** | | **0.7660** | **6.7463** | **4.2573** | **0.0418** | | **0.5292** | **0.5292** | | **0.5292** | **0.5292** | | **8,355.9832** | **8,355.9832** | **0.1602** | **0.1532** | **8,405.6387** |

# 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 30.5020 | 15.0496 | 88.4430 | 0.0944 | | 1.5974 | 1.5974 | | 1.5974 | 1.5974 | 0.0000 | 18,148.5950 | 18,148.5950 | 0.4874 | 0.3300 | 18,259.1192 |
| Unmitigated | 30.5020 | 15.0496 | 88.4430 | 0.0944 | | 1.5974 | 1.5974 | | 1.5974 | 1.5974 | 0.0000 | 18,148.5950 | 18,148.5950 | 0.4874 | 0.3300 | 18,259.1192 |

## 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 | 2.2670 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 24.1085 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 1.6500 | 14.1000 | 6.0000 | 0.0900 | | 1.1400 | 1.1400 | | 1.1400 | 1.1400 | 0.0000 | 18,000.0000 | 18,000.0000 | 0.3450 | 0.3300 | 18,106.9650 |
| Landscaping | 2.4766 | 0.9496 | 82.4430 | 4.3600e-003 | | 0.4574 | 0.4574 | | 0.4574 | 0.4574 | | 148.5950 | 148.5950 | 0.1424 | | 152.1542 |
| **Total** | **30.5020** | **15.0496** | **88.4430** | **0.0944** | | **1.5974** | **1.5974** | | **1.5974** | **1.5974** | **0.0000** | **18,148.5950** | **18,148.5950** | **0.4874** | **0.3300** | **18,259.1192** |

### 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 | 2.2670 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 24.1085 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 1.6500 | 14.1000 | 6.0000 | 0.0900 | | 1.1400 | 1.1400 | | 1.1400 | 1.1400 | 0.0000 | 18,000.0000 | 18,000.0000 | 0.3450 | 0.3300 | 18,106.9650 |
| Landscaping | 2.4766 | 0.9496 | 82.4430 | 4.3600e-003 | | 0.4574 | 0.4574 | | 0.4574 | 0.4574 | | 148.5950 | 148.5950 | 0.1424 | | 152.1542 |
| **Total** | **30.5020** | **15.0496** | **88.4430** | **0.0944** | | **1.5974** | **1.5974** | | **1.5974** | **1.5974** | **0.0000** | **18,148.5950** | **18,148.5950** | **0.4874** | **0.3300** | **18,259.1192** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 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

# Village South Specific Plan (Proposed)

**Los Angeles-South Coast County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Office Building | 45.00 | 1000sqft | 1.03 | 45,000.00 | 0 |
| High Turnover (Sit Down Restaurant) | 36.00 | 1000sqft | 0.83 | 36,000.00 | 0 |
| Hotel | 50.00 | Room | 1.67 | 72,600.00 | 0 |
| Quality Restaurant | 8.00 | 1000sqft | 0.18 | 8,000.00 | 0 |
| Apartments Low Rise | 25.00 | Dwelling Unit | 1.56 | 25,000.00 | 72 |
| Apartments Mid Rise | 975.00 | Dwelling Unit | 25.66 | 975,000.00 | 2789 |
| Regional Shopping Center | 56.00 | 1000sqft | 1.29 | 56,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 33 |
| **Climate Zone** | 9 | | | **Operational Year** | 2028 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 702.44 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Winter

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment regarding residential and retail land uses.

Construction Phase - See SWAPE comment regarding individual construction phase lengths.

Demolition - Consistent with the DEIR's model. See SWAPE comment regarding demolition.

Vehicle Trips - Saturday trips consistent with the DEIR's model. See SWAPE comment regarding weekday and Sunday trips.

Woodstoves - Woodstoves and wood-burning fireplaces consistent with the DEIR's model. See SWAPE comment regarding gas fireplaces.

Energy Use -

Construction Off-road Equipment Mitigation - See SWAPE comment on construction-related mitigation.

Area Mitigation - See SWAPE comment regarding operational mitigation measures.

Water Mitigation - See SWAPE comment regarding operational mitigation measures.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblFireplaces | FireplaceWoodMass | 1,019.20 | 0.00 |
| tblFireplaces | FireplaceWoodMass | 1,019.20 | 0.00 |
| tblFireplaces | NumberWood | 1.25 | 0.00 |
| tblFireplaces | NumberWood | 48.75 | 0.00 |
| tblVehicleTrips | ST_TR | 7.16 | 6.17 |
| tblVehicleTrips | ST_TR | 6.39 | 3.87 |
| tblVehicleTrips | ST_TR | 2.46 | 1.39 |
| tblVehicleTrips | ST_TR | 158.37 | 79.82 |
| tblVehicleTrips | ST_TR | 8.19 | 3.75 |
| tblVehicleTrips | ST_TR | 94.36 | 63.99 |
| tblVehicleTrips | ST_TR | 49.97 | 10.74 |
| tblVehicleTrips | SU_TR | 6.07 | 6.16 |
| tblVehicleTrips | SU_TR | 5.86 | 4.18 |
| tblVehicleTrips | SU_TR | 1.05 | 0.69 |
| tblVehicleTrips | SU_TR | 131.84 | 78.27 |

| | | | |
|---|---|---|---|
| tblVehicleTrips | SU_TR | 5.95 | 3.20 |
| tblVehicleTrips | SU_TR | 72.16 | 57.65 |
| tblVehicleTrips | SU_TR | 25.24 | 6.39 |
| tblVehicleTrips | WD_TR | 6.59 | 5.83 |
| tblVehicleTrips | WD_TR | 6.65 | 4.13 |
| tblVehicleTrips | WD_TR | 11.03 | 6.41 |
| tblVehicleTrips | WD_TR | 127.15 | 65.80 |
| tblVehicleTrips | WD_TR | 8.17 | 3.84 |
| tblVehicleTrips | WD_TR | 89.95 | 62.64 |
| tblVehicleTrips | WD_TR | 42.70 | 9.43 |
| tblWoodstoves | NumberCatalytic | 1.25 | 0.00 |
| tblWoodstoves | NumberCatalytic | 48.75 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 1.25 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 48.75 | 0.00 |
| tblWoodstoves | WoodstoveDayYear | 25.00 | 0.00 |
| tblWoodstoves | WoodstoveDayYear | 25.00 | 0.00 |
| tblWoodstoves | WoodstoveWoodMass | 999.60 | 0.00 |
| tblWoodstoves | WoodstoveWoodMass | 999.60 | 0.00 |

## 2.0 Emissions Summary

## 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 | | | | | |
| 2021 | 4.2865 | 46.4651 | 31.6150 | 0.0642 | 18.2675 | 2.0461 | 20.3135 | 9.9840 | 1.8824 | 11.8664 | 0.0000 | 6,221.4937 | 6,221.4937 | 1.9491 | 0.0000 | 6,270.2214 |
| 2022 | 5.7218 | 38.9024 | 47.3319 | 0.1455 | 9.8688 | 1.6366 | 10.7736 | 3.6558 | 1.5057 | 5.1615 | 0.0000 | 14,630.3099 | 14,630.3099 | 1.9499 | 0.0000 | 14,657.2663 |
| 2023 | 5.2705 | 26.4914 | 44.5936 | 0.1413 | 9.8688 | 0.7800 | 10.6488 | 2.6381 | 0.7328 | 3.3708 | 0.0000 | 14,210.3424 | 14,210.3424 | 1.0230 | 0.0000 | 14,235.9160 |
| 2024 | 237.2328 | 9.5610 | 15.0611 | 0.0243 | 1.7884 | 0.4698 | 1.8628 | 0.4743 | 0.4322 | 0.5476 | 0.0000 | 2,352.4178 | 2,352.4178 | 0.7175 | 0.0000 | 2,370.3550 |
| **Maximum** | **237.2328** | **46.4651** | **47.3319** | **0.1455** | **18.2675** | **2.0461** | **20.3135** | **9.9840** | **1.8824** | **11.8664** | **0.0000** | **14,630.3099** | **14,630.3099** | **1.9499** | **0.0000** | **14,657.2663** |

## 2.1 Overall Construction (Maximum Daily Emission)

**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 | | | | | |
| 2021 | 4.2865 | 46.4651 | 31.6150 | 0.0642 | 18.2675 | 2.0461 | 20.3135 | 9.9840 | 1.8824 | 11.8664 | 0.0000 | 6,221.4937 | 6,221.4937 | 1.9491 | 0.0000 | 6,270.2214 |
| 2022 | 5.7218 | 38.9024 | 47.3319 | 0.1455 | 9.8688 | 1.6366 | 10.7736 | 3.6558 | 1.5057 | 5.1615 | 0.0000 | 14,630.3099 | 14,630.3099 | 1.9499 | 0.0000 | 14,657.2663 |
| 2023 | 5.2705 | 26.4914 | 44.5936 | 0.1413 | 9.8688 | 0.7800 | 10.6488 | 2.6381 | 0.7328 | 3.3708 | 0.0000 | 14,210.3424 | 14,210.3424 | 1.0230 | 0.0000 | 14,235.9160 |
| 2024 | 237.2328 | 9.5610 | 15.0611 | 0.0243 | 1.7884 | 0.4698 | 1.8628 | 0.4743 | 0.4322 | 0.5476 | 0.0000 | 2,352.4178 | 2,352.4178 | 0.7175 | 0.0000 | 2,370.3550 |
| **Maximum** | **237.2328** | **46.4651** | **47.3319** | **0.1455** | **18.2675** | **2.0461** | **20.3135** | **9.9840** | **1.8824** | **11.8664** | **0.0000** | **14,630.3099** | **14,630.3099** | **1.9499** | **0.0000** | **14,657.2663** |

| | ROG | NOx | 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** |

## 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 | 30.5020 | 15.0496 | 88.4430 | 0.0944 | | 1.5974 | 1.5974 | | 1.5974 | 1.5974 | 0.0000 | 18,148.5950 | 18,148.5950 | 0.4874 | 0.3300 | 18,259.1192 |
| Energy | 0.7660 | 6.7462 | 4.2573 | 0.0418 | | 0.5292 | 0.5292 | | 0.5292 | 0.5292 | | 8,355.9832 | 8,355.9832 | 0.1602 | 0.1532 | 8,405.6387 |
| Mobile | 9.5233 | 45.9914 | 110.0422 | 0.4681 | 45.9592 | 0.3373 | 46.2965 | 12.2950 | 0.3132 | 12.6083 | | 47,917.8005 | 47,917.8005 | 2.1953 | | 47,972.6839 |
| **Total** | **40.7912** | **67.7872** | **202.7424** | **0.6043** | **45.9592** | **2.4640** | **48.4231** | **12.2950** | **2.4399** | **14.7349** | **0.0000** | **74,422.3787** | **74,422.3787** | **2.8429** | **0.4832** | **74,637.4417** |

### 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 | 30.5020 | 15.0496 | 88.4430 | 0.0944 | | 1.5974 | 1.5974 | | 1.5974 | 1.5974 | 0.0000 | 18,148.5950 | 18,148.5950 | 0.4874 | 0.3300 | 18,259.1192 |
| Energy | 0.7660 | 6.7462 | 4.2573 | 0.0418 | | 0.5292 | 0.5292 | | 0.5292 | 0.5292 | | 8,355.9832 | 8,355.9832 | 0.1602 | 0.1532 | 8,405.6387 |
| Mobile | 9.5233 | 45.9914 | 110.0422 | 0.4681 | 45.9592 | 0.3373 | 46.2965 | 12.2950 | 0.3132 | 12.6083 | | 47,917.8005 | 47,917.8005 | 2.1953 | | 47,972.6839 |
| **Total** | **40.7912** | **67.7872** | **202.7424** | **0.6043** | **45.9592** | **2.4640** | **48.4231** | **12.2950** | **2.4399** | **14.7349** | **0.0000** | **74,422.3787** | **74,422.3787** | **2.8429** | **0.4832** | **74,637.4417** |

| | ROG | NOx | 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 | 9/1/2021 | 10/12/2021 | 5 | 30 | |
| 2 | Site Preparation | Site Preparation | 10/13/2021 | 11/9/2021 | 5 | 20 | |
| 3 | Grading | Grading | 11/10/2021 | 1/11/2022 | 5 | 45 | |
| 4 | Building Construction | Building Construction | 1/12/2022 | 12/12/2023 | 5 | 500 | |
| 5 | Paving | Paving | 12/13/2023 | 1/30/2024 | 5 | 35 | |
| 6 | Architectural Coating | Architectural Coating | 1/31/2024 | 3/19/2024 | 5 | 35 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 112.5**

**Acres of Paving: 0**

**Residential Indoor: 2,025,000; Residential Outdoor: 675,000; Non-Residential Indoor: 326,400; Non-Residential Outdoor: 108,800; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Winter

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**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 | 15.00 | 0.00 | 458.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 801.00 | 143.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 160.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2021

**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 | | | | | 3.3074 | 0.0000 | 3.3074 | 0.5008 | 0.0000 | 0.5008 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1651 | 31.4407 | 21.5650 | 0.0388 | | 1.5513 | 1.5513 | | 1.4411 | 1.4411 | | 3,747.9449 | 3,747.9449 | 1.0549 | | 3,774.3174 |
| **Total** | **3.1651** | **31.4407** | **21.5650** | **0.0388** | **3.3074** | **1.5513** | **4.8588** | **0.5008** | **1.4411** | **1.9419** | | **3,747.9449** | **3,747.9449** | **1.0549** | | **3,774.3174** |

## 3.2 Demolition - 2021

### 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 | 0.1304 | 4.1454 | 1.0182 | 0.0117 | 0.2669 | 0.0128 | 0.2797 | 0.0732 | 0.0122 | 0.0854 | | 1,269.8555 | 1,269.8555 | 0.0908 | | 1,272.1252 |
| 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 |
| Worker | 0.0715 | 0.0489 | 0.5524 | 1.6100e-003 | 0.1677 | 1.3500e-003 | 0.1690 | 0.0445 | 1.2500e-003 | 0.0457 | | 160.8377 | 160.8377 | 4.7300e-003 | | 160.9560 |
| **Total** | **0.2019** | **4.1943** | **1.5706** | **0.0133** | **0.4346** | **0.0141** | **0.4487** | **0.1176** | **0.0135** | **0.1311** | | **1,430.6932** | **1,430.6932** | **0.0955** | | **1,433.0812** |

### 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 | | | | | 3.3074 | 0.0000 | 3.3074 | 0.5008 | 0.0000 | 0.5008 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1651 | 31.4407 | 21.5650 | 0.0388 | | 1.5513 | 1.5513 | | 1.4411 | 1.4411 | 0.0000 | 3,747.9449 | 3,747.9449 | 1.0549 | | 3,774.3174 |
| **Total** | **3.1651** | **31.4407** | **21.5650** | **0.0388** | **3.3074** | **1.5513** | **4.8588** | **0.5008** | **1.4411** | **1.9419** | **0.0000** | **3,747.9449** | **3,747.9449** | **1.0549** | | **3,774.3174** |

## 3.2 Demolition - 2021

**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 | 0.1304 | 4.1454 | 1.0182 | 0.0117 | 0.2669 | 0.0128 | 0.2797 | 0.0732 | 0.0122 | 0.0854 | | 1,269.8555 | 1,269.8555 | 0.0908 | | 1,272.1252 |
| 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 |
| Worker | 0.0715 | 0.0489 | 0.5524 | 1.6100e-003 | 0.1677 | 1.3500e-003 | 0.1690 | 0.0445 | 1.2500e-003 | 0.0457 | | 160.8377 | 160.8377 | 4.7300e-003 | | 160.9560 |
| **Total** | **0.2019** | **4.1943** | **1.5706** | **0.0133** | **0.4346** | **0.0141** | **0.4487** | **0.1176** | **0.0135** | **0.1311** | | **1,430.6932** | **1,430.6932** | **0.0955** | | **1,433.0812** |

## 3.3 Site Preparation - 2021

**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 | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.8882 | 40.4971 | 21.1543 | 0.0380 | | 2.0445 | 2.0445 | | 1.8809 | 1.8809 | | 3,685.6569 | 3,685.6569 | 1.1920 | | 3,715.4573 |
| **Total** | **3.8882** | **40.4971** | **21.1543** | **0.0380** | **18.0663** | **2.0445** | **20.1107** | **9.9307** | **1.8809** | **11.8116** | | **3,685.6569** | **3,685.6569** | **1.1920** | | **3,715.4573** |

## 3.3 Site Preparation - 2021

### 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 |
| 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 |
| Worker | 0.0858 | 0.0587 | 0.6629 | 1.9400e-003 | 0.2012 | 1.6300e-003 | 0.2028 | 0.0534 | 1.5000e-003 | 0.0549 | | 193.0052 | 193.0052 | 5.6800e-003 | | 193.1472 |
| **Total** | **0.0858** | **0.0587** | **0.6629** | **1.9400e-003** | **0.2012** | **1.6300e-003** | **0.2028** | **0.0534** | **1.5000e-003** | **0.0549** | | **193.0052** | **193.0052** | **5.6800e-003** | | **193.1472** |

### 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 | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.8882 | 40.4971 | 21.1543 | 0.0380 | | 2.0445 | 2.0445 | | 1.8809 | 1.8809 | 0.0000 | 3,685.6569 | 3,685.6569 | 1.1920 | | 3,715.4573 |
| **Total** | **3.8882** | **40.4971** | **21.1543** | **0.0380** | **18.0663** | **2.0445** | **20.1107** | **9.9307** | **1.8809** | **11.8116** | **0.0000** | **3,685.6569** | **3,685.6569** | **1.1920** | | **3,715.4573** |

## 3.3 Site Preparation - 2021

**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 |
| 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 |
| Worker | 0.0858 | 0.0587 | 0.6629 | 1.9400e-003 | 0.2012 | 1.6300e-003 | 0.2028 | 0.0534 | 1.5000e-003 | 0.0549 | | 193.0052 | 193.0052 | 5.6800e-003 | | 193.1472 |
| **Total** | **0.0858** | **0.0587** | **0.6629** | **1.9400e-003** | **0.2012** | **1.6300e-003** | **0.2028** | **0.0534** | **1.5000e-003** | **0.0549** | | **193.0052** | **193.0052** | **5.6800e-003** | | **193.1472** |

## 3.4 Grading - 2021

**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 | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.1912 | 46.3998 | 30.8785 | 0.0620 | | 1.9853 | 1.9853 | | 1.8265 | 1.8265 | | 6,007.0434 | 6,007.0434 | 1.9428 | | 6,055.6134 |
| **Total** | **4.1912** | **46.3998** | **30.8785** | **0.0620** | **8.6733** | **1.9853** | **10.6587** | **3.5965** | **1.8265** | **5.4230** | | **6,007.0434** | **6,007.0434** | **1.9428** | | **6,055.6134** |

## 3.4 Grading - 2021

### 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 |
| 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 |
| Worker | 0.0954 | 0.0652 | 0.7365 | 2.1500e-003 | 0.2236 | 1.8100e-003 | 0.2254 | 0.0593 | 1.6600e-003 | 0.0610 | | 214.4502 | 214.4502 | 6.3100e-003 | | 214.6080 |
| **Total** | **0.0954** | **0.0652** | **0.7365** | **2.1500e-003** | **0.2236** | **1.8100e-003** | **0.2254** | **0.0593** | **1.6600e-003** | **0.0610** | | **214.4502** | **214.4502** | **6.3100e-003** | | **214.6080** |

### 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 | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.1912 | 46.3998 | 30.8785 | 0.0620 | | 1.9853 | 1.9853 | | 1.8265 | 1.8265 | 0.0000 | 6,007.0434 | 6,007.0434 | 1.9428 | | 6,055.6134 |
| **Total** | **4.1912** | **46.3998** | **30.8785** | **0.0620** | **8.6733** | **1.9853** | **10.6587** | **3.5965** | **1.8265** | **5.4230** | **0.0000** | **6,007.0434** | **6,007.0434** | **1.9428** | | **6,055.6134** |

## 3.4 Grading - 2021

**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 |
| 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 |
| Worker | 0.0954 | 0.0652 | 0.7365 | 2.1500e-003 | 0.2236 | 1.8100e-003 | 0.2254 | 0.0593 | 1.6600e-003 | 0.0610 | | 214.4502 | 214.4502 | 6.3100e-003 | | 214.6080 |
| **Total** | **0.0954** | **0.0652** | **0.7365** | **2.1500e-003** | **0.2236** | **1.8100e-003** | **0.2254** | **0.0593** | **1.6600e-003** | **0.0610** | | **214.4502** | **214.4502** | **6.3100e-003** | | **214.6080** |

## 3.4 Grading - 2022

**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 | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **8.6733** | **1.6349** | **10.3082** | **3.5965** | **1.5041** | **5.1006** | | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

## 3.4 Grading - 2022

### 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 |
| 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 |
| Worker | 0.0896 | 0.0589 | 0.6784 | 2.0800e-003 | 0.2236 | 1.7500e-003 | 0.2253 | 0.0593 | 1.6100e-003 | 0.0609 | | 206.9139 | 206.9139 | 5.7000e-003 | | 207.0563 |
| **Total** | **0.0896** | **0.0589** | **0.6784** | **2.0800e-003** | **0.2236** | **1.7500e-003** | **0.2253** | **0.0593** | **1.6100e-003** | **0.0609** | | **206.9139** | **206.9139** | **5.7000e-003** | | **207.0563** |

### 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 | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | 0.0000 | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **8.6733** | **1.6349** | **10.3082** | **3.5965** | **1.5041** | **5.1006** | **0.0000** | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

## 3.4 Grading - 2022

**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 |
| 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 |
| Worker | 0.0896 | 0.0589 | 0.6784 | 2.0800e-003 | 0.2236 | 1.7500e-003 | 0.2253 | 0.0593 | 1.6100e-003 | 0.0609 | | 206.9139 | 206.9139 | 5.7000e-003 | | 207.0563 |
| **Total** | **0.0896** | **0.0589** | **0.6784** | **2.0800e-003** | **0.2236** | **1.7500e-003** | **0.2253** | **0.0593** | **1.6100e-003** | **0.0609** | | **206.9139** | **206.9139** | **5.7000e-003** | | **207.0563** |

## 3.5 Building Construction - 2022

**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 | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

## 3.5 Building Construction - 2022

### 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 |
| Vendor | 0.4284 | 13.1673 | 3.8005 | 0.0354 | 0.9155 | 0.0256 | 0.9412 | 0.2636 | 0.0245 | 0.2881 | | 3,789.0750 | 3,789.0750 | 0.2381 | | 3,795.0283 |
| Worker | 3.5872 | 2.3593 | 27.1680 | 0.0832 | 8.9533 | 0.0701 | 9.0234 | 2.3745 | 0.0646 | 2.4390 | | 8,286.9013 | 8,286.9013 | 0.2282 | | 8,292.6058 |
| **Total** | **4.0156** | **15.5266** | **30.9685** | **0.1186** | **9.8688** | **0.0957** | **9.9645** | **2.6381** | **0.0891** | **2.7271** | | **12,075.9763** | **12,075.9763** | **0.4663** | | **12,087.6341** |

### 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 | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | 0.0000 | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | **0.0000** | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

## 3.5 Building Construction - 2022

**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 |
| Vendor | 0.4284 | 13.1673 | 3.8005 | 0.0354 | 0.9155 | 0.0256 | 0.9412 | 0.2636 | 0.0245 | 0.2881 | | 3,789.0750 | 3,789.0750 | 0.2381 | | 3,795.0283 |
| Worker | 3.5872 | 2.3593 | 27.1680 | 0.0832 | 8.9533 | 0.0701 | 9.0234 | 2.3745 | 0.0646 | 2.4390 | | 8,286.9013 | 8,286.9013 | 0.2282 | | 8,292.6058 |
| **Total** | **4.0156** | **15.5266** | **30.9685** | **0.1186** | **9.8688** | **0.0957** | **9.9645** | **2.6381** | **0.0891** | **2.7271** | | **12,075.9763** | **12,075.9763** | **0.4663** | | **12,087.6341** |

## 3.5 Building Construction - 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 | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

## 3.5 Building Construction - 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 |
| Vendor | 0.3183 | 9.9726 | 3.3771 | 0.0343 | 0.9156 | 0.0122 | 0.9277 | 0.2636 | 0.0116 | 0.2752 | | 3,671.4007 | 3,671.4007 | 0.2096 | | 3,676.6417 |
| Worker | 3.3795 | 2.1338 | 24.9725 | 0.0801 | 8.9533 | 0.0681 | 9.0214 | 2.3745 | 0.0627 | 2.4372 | | 7,983.7318 | 7,983.7318 | 0.2055 | | 7,988.8683 |
| **Total** | **3.6978** | **12.1065** | **28.3496** | **0.1144** | **9.8688** | **0.0803** | **9.9491** | **2.6381** | **0.0743** | **2.7124** | | **11,655.1325** | **11,655.1325** | **0.4151** | | **11,665.5099** |

### 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 | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | 0.0000 | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | **0.0000** | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

## 3.5 Building Construction - 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 |
| Vendor | 0.3183 | 9.9726 | 3.3771 | 0.0343 | 0.9156 | 0.0122 | 0.9277 | 0.2636 | 0.0116 | 0.2752 | | 3,671.4007 | 3,671.4007 | 0.2096 | | 3,676.6417 |
| Worker | 3.3795 | 2.1338 | 24.9725 | 0.0801 | 8.9533 | 0.0681 | 9.0214 | 2.3745 | 0.0627 | 2.4372 | | 7,983.7318 | 7,983.7318 | 0.2055 | | 7,988.8683 |
| **Total** | **3.6978** | **12.1065** | **28.3496** | **0.1144** | **9.8688** | **0.0803** | **9.9491** | **2.6381** | **0.0743** | **2.7124** | | **11,655.1325** | **11,655.1325** | **0.4151** | | **11,665.5099** |

## 3.6 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

## 3.6 Paving - 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 |
| 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 |
| Worker | 0.0633 | 0.0400 | 0.4677 | 1.5000e-003 | 0.1677 | 1.2800e-003 | 0.1689 | 0.0445 | 1.1700e-003 | 0.0456 | | 149.5081 | 149.5081 | 3.8500e-003 | | 149.6043 |
| **Total** | **0.0633** | **0.0400** | **0.4677** | **1.5000e-003** | **0.1677** | **1.2800e-003** | **0.1689** | **0.0445** | **1.1700e-003** | **0.0456** | | **149.5081** | **149.5081** | **3.8500e-003** | | **149.6043** |

### 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 | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | 0.0000 | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | **0.0000** | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

## 3.6 Paving - 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 |
| 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 |
| Worker | 0.0633 | 0.0400 | 0.4677 | 1.5000e-003 | 0.1677 | 1.2800e-003 | 0.1689 | 0.0445 | 1.1700e-003 | 0.0456 | | 149.5081 | 149.5081 | 3.8500e-003 | | 149.6043 |
| **Total** | **0.0633** | **0.0400** | **0.4677** | **1.5000e-003** | **0.1677** | **1.2800e-003** | **0.1689** | **0.0445** | **1.1700e-003** | **0.0456** | | **149.5081** | **149.5081** | **3.8500e-003** | | **149.6043** |

## 3.6 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9882 | 9.5246 | 14.6258 | 0.0228 | | 0.4685 | 0.4685 | | 0.4310 | 0.4310 | | 2,207.5472 | 2,207.5472 | 0.7140 | | 2,225.3963 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.9882** | **9.5246** | **14.6258** | **0.0228** | | **0.4685** | **0.4685** | | **0.4310** | **0.4310** | | **2,207.5472** | **2,207.5472** | **0.7140** | | **2,225.3963** |

## 3.6 Paving - 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 |
| 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 |
| Worker | 0.0601 | 0.0364 | 0.4354 | 1.4500e-003 | 0.1677 | 1.2600e-003 | 0.1689 | 0.0445 | 1.1600e-003 | 0.0456 | | 144.8706 | 144.8706 | 3.5300e-003 | | 144.9587 |
| **Total** | **0.0601** | **0.0364** | **0.4354** | **1.4500e-003** | **0.1677** | **1.2600e-003** | **0.1689** | **0.0445** | **1.1600e-003** | **0.0456** | | **144.8706** | **144.8706** | **3.5300e-003** | | **144.9587** |

### 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 | | | | | |
| Off-Road | 0.9882 | 9.5246 | 14.6258 | 0.0228 | | 0.4685 | 0.4685 | | 0.4310 | 0.4310 | 0.0000 | 2,207.5472 | 2,207.5472 | 0.7140 | | 2,225.3963 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.9882** | **9.5246** | **14.6258** | **0.0228** | | **0.4685** | **0.4685** | | **0.4310** | **0.4310** | **0.0000** | **2,207.5472** | **2,207.5472** | **0.7140** | | **2,225.3963** |

## 3.6 Paving - 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 |
| 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 |
| Worker | 0.0601 | 0.0364 | 0.4354 | 1.4500e-003 | 0.1677 | 1.2600e-003 | 0.1689 | 0.0445 | 1.1600e-003 | 0.0456 | | 144.8706 | 144.8706 | 3.5300e-003 | | 144.9587 |
| **Total** | **0.0601** | **0.0364** | **0.4354** | **1.4500e-003** | **0.1677** | **1.2600e-003** | **0.1689** | **0.0445** | **1.1600e-003** | **0.0456** | | **144.8706** | **144.8706** | **3.5300e-003** | | **144.9587** |

## 3.7 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 236.4115 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **236.5923** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

## 3.7 Architectural Coating - 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 |
| 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 |
| Worker | 0.6406 | 0.3886 | 4.6439 | 0.0155 | 1.7884 | 0.0134 | 1.8018 | 0.4743 | 0.0123 | 0.4866 | | 1,545.2860 | 1,545.2860 | 0.0376 | | 1,546.2262 |
| **Total** | **0.6406** | **0.3886** | **4.6439** | **0.0155** | **1.7884** | **0.0134** | **1.8018** | **0.4743** | **0.0123** | **0.4866** | | **1,545.2860** | **1,545.2860** | **0.0376** | | **1,546.2262** |

### 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 | 236.4115 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | 0.0000 | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **236.5923** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | **0.0000** | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

### 3.7 Architectural Coating - 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 |
| 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 |
| Worker | 0.6406 | 0.3886 | 4.6439 | 0.0155 | 1.7884 | 0.0134 | 1.8018 | 0.4743 | 0.0123 | 0.4866 | | 1,545.2860 | 1,545.2860 | 0.0376 | | 1,546.2262 |
| **Total** | **0.6406** | **0.3886** | **4.6439** | **0.0155** | **1.7884** | **0.0134** | **1.8018** | **0.4743** | **0.0123** | **0.4866** | | **1,545.2860** | **1,545.2860** | **0.0376** | | **1,546.2262** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 9.5233 | 45.9914 | 110.0422 | 0.4681 | 45.9592 | 0.3373 | 46.2965 | 12.2950 | 0.3132 | 12.6083 | | 47,917.8005 | 47,917.8005 | 2.1953 | | 47,972.6839 |
| Unmitigated | 9.5233 | 45.9914 | 110.0422 | 0.4681 | 45.9592 | 0.3373 | 46.2965 | 12.2950 | 0.3132 | 12.6083 | | 47,917.8005 | 47,917.8005 | 2.1953 | | 47,972.6839 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 145.75 | 154.25 | 154.00 | 506,227 | 506,227 |
| Apartments Mid Rise | 4,026.75 | 3,773.25 | 4075.50 | 13,660,065 | 13,660,065 |
| General Office Building | 288.45 | 62.55 | 31.05 | 706,812 | 706,812 |
| High Turnover (Sit Down Restaurant) | 2,368.80 | 2,873.52 | 2817.72 | 3,413,937 | 3,413,937 |
| Hotel | 192.00 | 187.50 | 160.00 | 445,703 | 445,703 |
| Quality Restaurant | 501.12 | 511.92 | 461.20 | 707,488 | 707,488 |
| Regional Shopping Center | 528.08 | 601.44 | 357.84 | 1,112,221 | 1,112,221 |
| Total | 8,050.95 | 8,164.43 | 8,057.31 | 20,552,452 | 20,552,452 |

## 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 Low Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| Apartments Mid Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| General Office Building | 16.60 | 8.40 | 6.90 | 33.00 | 48.00 | 19.00 | 77 | 19 | 4 |
| High Turnover (Sit Down | 16.60 | 8.40 | 6.90 | 8.50 | 72.50 | 19.00 | 37 | 20 | 43 |
| Hotel | 16.60 | 8.40 | 6.90 | 19.40 | 61.60 | 19.00 | 58 | 38 | 4 |
| Quality Restaurant | 16.60 | 8.40 | 6.90 | 12.00 | 69.00 | 19.00 | 38 | 18 | 44 |
| Regional Shopping Center | 16.60 | 8.40 | 6.90 | 16.30 | 64.70 | 19.00 | 54 | 35 | 11 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Low Rise | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Apartments Mid Rise | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| General Office Building | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| High Turnover (Sit Down Restaurant) | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Hotel | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Quality Restaurant | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Regional Shopping Center | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Winter

| | ROG | NOx | CO | SO2 | Fugitive 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 | 0.7660 | 6.7462 | 4.2573 | 0.0418 | | 0.5292 | 0.5292 | | 0.5292 | 0.5292 | | 8,355.9832 | 8,355.9832 | 0.1602 | 0.1532 | 8,405.6387 |
| NaturalGas Unmitigated | 0.7660 | 6.7462 | 4.2573 | 0.0418 | | 0.5292 | 0.5292 | | 0.5292 | 0.5292 | | 8,355.9832 | 8,355.9832 | 0.1602 | 0.1532 | 8,405.6387 |

## 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 Low Rise | 1119.16 | 0.0121 | 0.1031 | 0.0439 | 6.6000e-004 | | 8.3400e-003 | 8.3400e-003 | | 8.3400e-003 | 8.3400e-003 | | 131.6662 | 131.6662 | 2.5200e-003 | 2.4100e-003 | 132.4486 |
| Apartments Mid Rise | 35784.3 | 0.3859 | 3.2978 | 1.4033 | 0.0211 | | 0.2666 | 0.2666 | | 0.2666 | 0.2666 | | 4,209.9164 | 4,209.9164 | 0.0807 | 0.0772 | 4,234.9339 |
| General Office Building | 1283.42 | 0.0138 | 0.1258 | 0.1057 | 7.5000e-004 | | 9.5600e-003 | 9.5600e-003 | | 9.5600e-003 | 9.5600e-003 | | 150.9911 | 150.9911 | 2.8900e-003 | 2.7700e-003 | 151.8884 |
| High Turnover (Sit Down Restaurant) | 22759.9 | 0.2455 | 2.2314 | 1.8743 | 0.0134 | | 0.1696 | 0.1696 | | 0.1696 | 0.1696 | | 2,677.6342 | 2,677.6342 | 0.0513 | 0.0491 | 2,693.5460 |
| Hotel | 4769.72 | 0.0514 | 0.4676 | 0.3928 | 2.8100e-003 | | 0.0355 | 0.0355 | | 0.0355 | 0.0355 | | 561.1436 | 561.1436 | 0.0108 | 0.0103 | 564.4782 |
| Quality Restaurant | 5057.75 | 0.0545 | 0.4959 | 0.4165 | 2.9800e-003 | | 0.0377 | 0.0377 | | 0.0377 | 0.0377 | | 595.0298 | 595.0298 | 0.0114 | 0.0109 | 598.5658 |
| Regional Shopping Center | 251.616 | 2.7100e-003 | 0.0247 | 0.0207 | 1.5000e-004 | | 1.8700e-003 | 1.8700e-003 | | 1.8700e-003 | 1.8700e-003 | | 29.6019 | 29.6019 | 5.7000e-004 | 5.4000e-004 | 29.7778 |
| **Total** | | **0.7660** | **6.7463** | **4.2573** | **0.0418** | | **0.5292** | **0.5292** | | **0.5292** | **0.5292** | | **8,355.9832** | **8,355.9832** | **0.1602** | **0.1532** | **8,405.6387** |

## 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 Low Rise | 1.11916 | 0.0121 | 0.1031 | 0.0439 | 6.6000e-004 | | 8.3400e-003 | 8.3400e-003 | | 8.3400e-003 | 8.3400e-003 | | 131.6662 | 131.6662 | 2.5200e-003 | 2.4100e-003 | 132.4486 |
| Apartments Mid Rise | 35.7843 | 0.3859 | 3.2978 | 1.4033 | 0.0211 | | 0.2666 | 0.2666 | | 0.2666 | 0.2666 | | 4,209.9164 | 4,209.9164 | 0.0807 | 0.0772 | 4,234.9339 |
| General Office Building | 1.28342 | 0.0138 | 0.1258 | 0.1057 | 7.5000e-004 | | 9.5600e-003 | 9.5600e-003 | | 9.5600e-003 | 9.5600e-003 | | 150.9911 | 150.9911 | 2.8900e-003 | 2.7700e-003 | 151.8884 |
| High Turnover (Sit Down Restaurant) | 22.7599 | 0.2455 | 2.2314 | 1.8743 | 0.0134 | | 0.1696 | 0.1696 | | 0.1696 | 0.1696 | | 2,677.6342 | 2,677.6342 | 0.0513 | 0.0491 | 2,693.5460 |
| Hotel | 4.76972 | 0.0514 | 0.4676 | 0.3928 | 2.8100e-003 | | 0.0355 | 0.0355 | | 0.0355 | 0.0355 | | 561.1436 | 561.1436 | 0.0108 | 0.0103 | 564.4782 |
| Quality Restaurant | 5.05775 | 0.0545 | 0.4959 | 0.4165 | 2.9800e-003 | | 0.0377 | 0.0377 | | 0.0377 | 0.0377 | | 595.0298 | 595.0298 | 0.0114 | 0.0109 | 598.5658 |
| Regional Shopping Center | 0.251616 | 2.7100e-003 | 0.0247 | 0.0207 | 1.5000e-004 | | 1.8700e-003 | 1.8700e-003 | | 1.8700e-003 | 1.8700e-003 | | 29.6019 | 29.6019 | 5.7000e-004 | 5.4000e-004 | 29.7778 |
| **Total** | | **0.7660** | **6.7463** | **4.2573** | **0.0418** | | **0.5292** | **0.5292** | | **0.5292** | **0.5292** | | **8,355.9832** | **8,355.9832** | **0.1602** | **0.1532** | **8,405.6387** |

# 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 30.5020 | 15.0496 | 88.4430 | 0.0944 | | 1.5974 | 1.5974 | | 1.5974 | 1.5974 | 0.0000 | 18,148.5950 | 18,148.5950 | 0.4874 | 0.3300 | 18,259.1192 |
| Unmitigated | 30.5020 | 15.0496 | 88.4430 | 0.0944 | | 1.5974 | 1.5974 | | 1.5974 | 1.5974 | 0.0000 | 18,148.5950 | 18,148.5950 | 0.4874 | 0.3300 | 18,259.1192 |

## 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 | 2.2670 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 24.1085 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 1.6500 | 14.1000 | 6.0000 | 0.0900 | | 1.1400 | 1.1400 | | 1.1400 | 1.1400 | 0.0000 | 18,000.0000 | 18,000.0000 | 0.3450 | 0.3300 | 18,106.9650 |
| Landscaping | 2.4766 | 0.9496 | 82.4430 | 4.3600e-003 | | 0.4574 | 0.4574 | | 0.4574 | 0.4574 | | 148.5950 | 148.5950 | 0.1424 | | 152.1542 |
| **Total** | **30.5020** | **15.0496** | **88.4430** | **0.0944** | | **1.5974** | **1.5974** | | **1.5974** | **1.5974** | **0.0000** | **18,148.5950** | **18,148.5950** | **0.4874** | **0.3300** | **18,259.1192** |

### 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 | 2.2670 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 24.1085 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 1.6500 | 14.1000 | 6.0000 | 0.0900 | | 1.1400 | 1.1400 | | 1.1400 | 1.1400 | 0.0000 | 18,000.0000 | 18,000.0000 | 0.3450 | 0.3300 | 18,106.9650 |
| Landscaping | 2.4766 | 0.9496 | 82.4430 | 4.3600e-003 | | 0.4574 | 0.4574 | | 0.4574 | 0.4574 | | 148.5950 | 148.5950 | 0.1424 | | 152.1542 |
| **Total** | **30.5020** | **15.0496** | **88.4430** | **0.0944** | | **1.5974** | **1.5974** | | **1.5974** | **1.5974** | **0.0000** | **18,148.5950** | **18,148.5950** | **0.4874** | **0.3300** | **18,259.1192** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 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

# Village South Specific Plan (Proposed)

**Los Angeles-South Coast County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Office Building | 45.00 | 1000sqft | 1.03 | 45,000.00 | 0 |
| High Turnover (Sit Down Restaurant) | 36.00 | 1000sqft | 0.83 | 36,000.00 | 0 |
| Hotel | 50.00 | Room | 1.67 | 72,600.00 | 0 |
| Quality Restaurant | 8.00 | 1000sqft | 0.18 | 8,000.00 | 0 |
| Apartments Low Rise | 25.00 | Dwelling Unit | 1.56 | 25,000.00 | 72 |
| Apartments Mid Rise | 975.00 | Dwelling Unit | 25.66 | 975,000.00 | 2789 |
| Regional Shopping Center | 56.00 | 1000sqft | 1.29 | 56,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 33 |
| **Climate Zone** | 9 | | | **Operational Year** | 2028 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 702.44 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Annual

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment regarding residential and retail land uses.

Construction Phase - See SWAPE comment regarding individual construction phase lengths.

Demolition - Consistent with the DEIR's model. See SWAPE comment regarding demolition.

Vehicle Trips - Saturday trips consistent with the DEIR's model. See SWAPE comment regarding weekday and Sunday trips.

Woodstoves - Woodstoves and wood-burning fireplaces consistent with the DEIR's model. See SWAPE comment regarding gas fireplaces.

Energy Use -

Construction Off-road Equipment Mitigation - See SWAPE comment on construction-related mitigation.

Area Mitigation - See SWAPE comment regarding operational mitigation measures.

Water Mitigation - See SWAPE comment regarding operational mitigation measures.

Trips and VMT - Local hire provision

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblFireplaces | FireplaceWoodMass | 1,019.20 | 0.00 |
| tblFireplaces | FireplaceWoodMass | 1,019.20 | 0.00 |
| tblFireplaces | NumberWood | 1.25 | 0.00 |
| tblFireplaces | NumberWood | 48.75 | 0.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 10.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 10.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 10.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 10.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 10.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 10.00 |
| tblVehicleTrips | ST_TR | 7.16 | 6.17 |
| tblVehicleTrips | ST_TR | 6.39 | 3.87 |
| tblVehicleTrips | ST_TR | 2.46 | 1.39 |
| tblVehicleTrips | ST_TR | 158.37 | 79.82 |

| | | | |
|---|---|---|---|
| tblVehicleTrips | ST_TR | 8.19 | 3.75 |
| tblVehicleTrips | ST_TR | 94.36 | 63.99 |
| tblVehicleTrips | ST_TR | 49.97 | 10.74 |
| tblVehicleTrips | SU_TR | 6.07 | 6.16 |
| tblVehicleTrips | SU_TR | 5.86 | 4.18 |
| tblVehicleTrips | SU_TR | 1.05 | 0.69 |
| tblVehicleTrips | SU_TR | 131.84 | 78.27 |
| tblVehicleTrips | SU_TR | 5.95 | 3.20 |
| tblVehicleTrips | SU_TR | 72.16 | 57.65 |
| tblVehicleTrips | SU_TR | 25.24 | 6.39 |
| tblVehicleTrips | WD_TR | 6.59 | 5.83 |
| tblVehicleTrips | WD_TR | 6.65 | 4.13 |
| tblVehicleTrips | WD_TR | 11.03 | 6.41 |
| tblVehicleTrips | WD_TR | 127.15 | 65.80 |
| tblVehicleTrips | WD_TR | 8.17 | 3.84 |
| tblVehicleTrips | WD_TR | 89.95 | 62.64 |
| tblVehicleTrips | WD_TR | 42.70 | 9.43 |
| tblWoodstoves | NumberCatalytic | 1.25 | 0.00 |
| tblWoodstoves | NumberCatalytic | 48.75 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 1.25 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 48.75 | 0.00 |
| tblWoodstoves | WoodstoveDayYear | 25.00 | 0.00 |
| tblWoodstoves | WoodstoveDayYear | 25.00 | 0.00 |
| tblWoodstoves | WoodstoveWoodMass | 999.60 | 0.00 |
| tblWoodstoves | WoodstoveWoodMass | 999.60 | 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 | | | | | |
| 2021 | 0.1704 | 1.8234 | 1.1577 | 2.3800e-003 | 0.4141 | 0.0817 | 0.4958 | 0.1788 | 0.0754 | 0.2542 | 0.0000 | 210.7654 | 210.7654 | 0.0600 | 0.0000 | 212.2661 |
| 2022 | 0.5865 | 4.0240 | 5.1546 | 0.0155 | 0.9509 | 0.1175 | 1.0683 | 0.2518 | 0.1103 | 0.3621 | 0.0000 | 1,418.6554 | 1,418.6554 | 0.1215 | 0.0000 | 1,421.6925 |
| 2023 | 0.5190 | 3.2850 | 4.7678 | 0.0147 | 0.8497 | 0.0971 | 0.9468 | 0.2283 | 0.0912 | 0.3195 | 0.0000 | 1,342.4412 | 1,342.4412 | 0.1115 | 0.0000 | 1,345.2291 |
| 2024 | 4.1592 | 0.1313 | 0.2557 | 5.0000e-004 | 0.0221 | 6.3900e-003 | 0.0285 | 5.8700e-003 | 5.9700e-003 | 0.0118 | 0.0000 | 44.6355 | 44.6355 | 7.8300e-003 | 0.0000 | 44.8311 |
| **Maximum** | **4.1592** | **4.0240** | **5.1546** | **0.0155** | **0.9509** | **0.1175** | **1.0683** | **0.2518** | **0.1103** | **0.3621** | **0.0000** | **1,418.6554** | **1,418.6554** | **0.1215** | **0.0000** | **1,421.6925** |

## 2.1 Overall Construction

### 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 | | | | | |
| 2021 | 0.1704 | 1.8234 | 1.1577 | 2.3800e-003 | 0.4141 | 0.0817 | 0.4958 | 0.1788 | 0.0754 | 0.2542 | 0.0000 | 210.7651 | 210.7651 | 0.0600 | 0.0000 | 212.2658 |
| 2022 | 0.5865 | 4.0240 | 5.1546 | 0.0155 | 0.9509 | 0.1175 | 1.0683 | 0.2518 | 0.1103 | 0.3621 | 0.0000 | 1,418.6550 | 1,418.6550 | 0.1215 | 0.0000 | 1,421.6921 |
| 2023 | 0.5190 | 3.2850 | 4.7678 | 0.0147 | 0.8497 | 0.0971 | 0.9468 | 0.2283 | 0.0912 | 0.3195 | 0.0000 | 1,342.4409 | 1,342.4409 | 0.1115 | 0.0000 | 1,345.2287 |
| 2024 | 4.1592 | 0.1313 | 0.2557 | 5.0000e-004 | 0.0221 | 6.3900e-003 | 0.0285 | 5.8700e-003 | 5.9700e-003 | 0.0118 | 0.0000 | 44.6354 | 44.6354 | 7.8300e-003 | 0.0000 | 44.8311 |
| **Maximum** | **4.1592** | **4.0240** | **5.1546** | **0.0155** | **0.9509** | **0.1175** | **1.0683** | **0.2518** | **0.1103** | **0.3621** | **0.0000** | **1,418.6550** | **1,418.6550** | **0.1215** | **0.0000** | **1,421.6921** |

| | ROG | NOx | 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) |
|---|---|---|---|---|
| **1** | **9-1-2021** | **11-30-2021** | 1.4091 | 1.4091 |
| **2** | **12-1-2021** | **2-28-2022** | 1.3329 | 1.3329 |
| **3** | **3-1-2022** | **5-31-2022** | 1.1499 | 1.1499 |
| **4** | **6-1-2022** | **8-31-2022** | 1.1457 | 1.1457 |
| **5** | **9-1-2022** | **11-30-2022** | 1.1415 | 1.1415 |
| **6** | **12-1-2022** | **2-28-2023** | 1.0278 | 1.0278 |
| **7** | **3-1-2023** | **5-31-2023** | 0.9868 | 0.9868 |
| **8** | **6-1-2023** | **8-31-2023** | 0.9831 | 0.9831 |

| | | | | |
|---|---|---|---|---|
| **9** | **9-1-2023** | **11-30-2023** | 0.9798 | 0.9798 |
| **10** | **12-1-2023** | **2-29-2024** | 2.8757 | 2.8757 |
| **11** | **3-1-2024** | **5-31-2024** | 1.6188 | 1.6188 |
| | | **Highest** | 2.8757 | 2.8757 |

## 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 | 5.1437 | 0.2950 | 10.3804 | 1.6700e-003 | | 0.0714 | 0.0714 | | 0.0714 | 0.0714 | 0.0000 | 220.9670 | 220.9670 | 0.0201 | 3.7400e-003 | 222.5835 |
| Energy | 0.1398 | 1.2312 | 0.7770 | 7.6200e-003 | | 0.0966 | 0.0966 | | 0.0966 | 0.0966 | 0.0000 | 3,896.0732 | 3,896.0732 | 0.1303 | 0.0468 | 3,913.2833 |
| Mobile | 1.5857 | 7.9962 | 19.1834 | 0.0821 | 7.7979 | 0.0580 | 7.8559 | 2.0895 | 0.0539 | 2.1434 | 0.0000 | 7,620.4986 | 7,620.4986 | 0.3407 | 0.0000 | 7,629.0162 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 207.8079 | 0.0000 | 207.8079 | 12.2811 | 0.0000 | 514.8354 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 29.1632 | 556.6420 | 585.8052 | 3.0183 | 0.0755 | 683.7567 |
| **Total** | **6.8692** | **9.5223** | **30.3407** | **0.0914** | **7.7979** | **0.2260** | **8.0240** | **2.0895** | **0.2219** | **2.3114** | **236.9712** | **12,294.1807** | **12,531.1519** | **15.7904** | **0.1260** | **12,963.4751** |

## 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 | 5.1437 | 0.2950 | 10.3804 | 1.6700e-003 | | 0.0714 | 0.0714 | | 0.0714 | 0.0714 | 0.0000 | 220.9670 | 220.9670 | 0.0201 | 3.7400e-003 | 222.5835 |
| Energy | 0.1398 | 1.2312 | 0.7770 | 7.6200e-003 | | 0.0966 | 0.0966 | | 0.0966 | 0.0966 | 0.0000 | 3,896.0732 | 3,896.0732 | 0.1303 | 0.0468 | 3,913.2833 |
| Mobile | 1.5857 | 7.9962 | 19.1834 | 0.0821 | 7.7979 | 0.0580 | 7.8559 | 2.0895 | 0.0539 | 2.1434 | 0.0000 | 7,620.4986 | 7,620.4986 | 0.3407 | 0.0000 | 7,629.0162 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 207.8079 | 0.0000 | 207.8079 | 12.2811 | 0.0000 | 514.8354 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 29.1632 | 556.6420 | 585.8052 | 3.0183 | 0.0755 | 683.7567 |
| **Total** | **6.8692** | **9.5223** | **30.3407** | **0.0914** | **7.7979** | **0.2260** | **8.0240** | **2.0895** | **0.2219** | **2.3114** | **236.9712** | **12,294.1807** | **12,531.1519** | **15.7904** | **0.1260** | **12,963.4751** |

| | ROG | NOx | 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**

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Annual

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 9/1/2021 | 10/12/2021 | 5 | 30 | |
| 2 | Site Preparation | Site Preparation | 10/13/2021 | 11/9/2021 | 5 | 20 | |
| 3 | Grading | Grading | 11/10/2021 | 1/11/2022 | 5 | 45 | |
| 4 | Building Construction | Building Construction | 1/12/2022 | 12/12/2023 | 5 | 500 | |
| 5 | Paving | Paving | 12/13/2023 | 1/30/2024 | 5 | 35 | |
| 6 | Architectural Coating | Architectural Coating | 1/31/2024 | 3/19/2024 | 5 | 35 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 112.5**

**Acres of Paving: 0**

**Residential Indoor: 2,025,000; Residential Outdoor: 675,000; Non-Residential Indoor: 326,400; Non-Residential Outdoor: 108,800; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Annual

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**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 | 15.00 | 0.00 | 458.00 | 10.00 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.00 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.00 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 801.00 | 143.00 | 0.00 | 10.00 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.00 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 160.00 | 0.00 | 0.00 | 10.00 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2021

**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 | | | | | 0.0496 | 0.0000 | 0.0496 | 7.5100e-003 | 0.0000 | 7.5100e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0475 | 0.4716 | 0.3235 | 5.8000e-004 | | 0.0233 | 0.0233 | | 0.0216 | 0.0216 | 0.0000 | 51.0012 | 51.0012 | 0.0144 | 0.0000 | 51.3601 |
| **Total** | **0.0475** | **0.4716** | **0.3235** | **5.8000e-004** | **0.0496** | **0.0233** | **0.0729** | **7.5100e-003** | **0.0216** | **0.0291** | **0.0000** | **51.0012** | **51.0012** | **0.0144** | **0.0000** | **51.3601** |

## 3.2 Demolition - 2021

### 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 | 1.9300e-003 | 0.0634 | 0.0148 | 1.8000e-004 | 3.9400e-003 | 1.9000e-004 | 4.1300e-003 | 1.0800e-003 | 1.8000e-004 | 1.2600e-003 | 0.0000 | 17.4566 | 17.4566 | 1.2100e-003 | 0.0000 | 17.4869 |
| 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 | 7.2000e-004 | 5.3000e-004 | 6.0900e-003 | 2.0000e-005 | 1.6800e-003 | 1.0000e-005 | 1.6900e-003 | 4.5000e-004 | 1.0000e-005 | 4.6000e-004 | 0.0000 | 1.5281 | 1.5281 | 5.0000e-005 | 0.0000 | 1.5293 |
| **Total** | **2.6500e-003** | **0.0639** | **0.0209** | **2.0000e-004** | **5.6200e-003** | **2.0000e-004** | **5.8200e-003** | **1.5300e-003** | **1.9000e-004** | **1.7200e-003** | **0.0000** | **18.9847** | **18.9847** | **1.2600e-003** | **0.0000** | **19.0161** |

### 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 | | | | | 0.0496 | 0.0000 | 0.0496 | 7.5100e-003 | 0.0000 | 7.5100e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0475 | 0.4716 | 0.3235 | 5.8000e-004 | | 0.0233 | 0.0233 | | 0.0216 | 0.0216 | 0.0000 | 51.0011 | 51.0011 | 0.0144 | 0.0000 | 51.3600 |
| **Total** | **0.0475** | **0.4716** | **0.3235** | **5.8000e-004** | **0.0496** | **0.0233** | **0.0729** | **7.5100e-003** | **0.0216** | **0.0291** | **0.0000** | **51.0011** | **51.0011** | **0.0144** | **0.0000** | **51.3600** |

## 3.2 Demolition - 2021

**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 | 1.9300e-003 | 0.0634 | 0.0148 | 1.8000e-004 | 3.9400e-003 | 1.9000e-004 | 4.1300e-003 | 1.0800e-003 | 1.8000e-004 | 1.2600e-003 | 0.0000 | 17.4566 | 17.4566 | 1.2100e-003 | 0.0000 | 17.4869 |
| 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 | 7.2000e-004 | 5.3000e-004 | 6.0900e-003 | 2.0000e-005 | 1.6800e-003 | 1.0000e-005 | 1.6900e-003 | 4.5000e-004 | 1.0000e-005 | 4.6000e-004 | 0.0000 | 1.5281 | 1.5281 | 5.0000e-005 | 0.0000 | 1.5293 |
| **Total** | **2.6500e-003** | **0.0639** | **0.0209** | **2.0000e-004** | **5.6200e-003** | **2.0000e-004** | **5.8200e-003** | **1.5300e-003** | **1.9000e-004** | **1.7200e-003** | **0.0000** | **18.9847** | **18.9847** | **1.2600e-003** | **0.0000** | **19.0161** |

## 3.3 Site Preparation - 2021

**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 | | | | | 0.1807 | 0.0000 | 0.1807 | 0.0993 | 0.0000 | 0.0993 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0389 | 0.4050 | 0.2115 | 3.8000e-004 | | 0.0204 | 0.0204 | | 0.0188 | 0.0188 | 0.0000 | 33.4357 | 33.4357 | 0.0108 | 0.0000 | 33.7061 |
| **Total** | **0.0389** | **0.4050** | **0.2115** | **3.8000e-004** | **0.1807** | **0.0204** | **0.2011** | **0.0993** | **0.0188** | **0.1181** | **0.0000** | **33.4357** | **33.4357** | **0.0108** | **0.0000** | **33.7061** |

## 3.3 Site Preparation - 2021

### 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 | 5.8000e-004 | 4.3000e-004 | 4.8700e-003 | 1.0000e-005 | 1.3400e-003 | 1.0000e-005 | 1.3500e-003 | 3.6000e-004 | 1.0000e-005 | 3.7000e-004 | 0.0000 | 1.2225 | 1.2225 | 4.0000e-005 | 0.0000 | 1.2234 |
| **Total** | **5.8000e-004** | **4.3000e-004** | **4.8700e-003** | **1.0000e-005** | **1.3400e-003** | **1.0000e-005** | **1.3500e-003** | **3.6000e-004** | **1.0000e-005** | **3.7000e-004** | **0.0000** | **1.2225** | **1.2225** | **4.0000e-005** | **0.0000** | **1.2234** |

### 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 | | | | | |
| Fugitive Dust | | | | | 0.1807 | 0.0000 | 0.1807 | 0.0993 | 0.0000 | 0.0993 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0389 | 0.4050 | 0.2115 | 3.8000e-004 | | 0.0204 | 0.0204 | | 0.0188 | 0.0188 | 0.0000 | 33.4357 | 33.4357 | 0.0108 | 0.0000 | 33.7060 |
| **Total** | **0.0389** | **0.4050** | **0.2115** | **3.8000e-004** | **0.1807** | **0.0204** | **0.2011** | **0.0993** | **0.0188** | **0.1181** | **0.0000** | **33.4357** | **33.4357** | **0.0108** | **0.0000** | **33.7060** |

## 3.3 Site Preparation - 2021

**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 | 5.8000e-004 | 4.3000e-004 | 4.8700e-003 | 1.0000e-005 | 1.3400e-003 | 1.0000e-005 | 1.3500e-003 | 3.6000e-004 | 1.0000e-005 | 3.7000e-004 | 0.0000 | 1.2225 | 1.2225 | 4.0000e-005 | 0.0000 | 1.2234 |
| **Total** | **5.8000e-004** | **4.3000e-004** | **4.8700e-003** | **1.0000e-005** | **1.3400e-003** | **1.0000e-005** | **1.3500e-003** | **3.6000e-004** | **1.0000e-005** | **3.7000e-004** | **0.0000** | **1.2225** | **1.2225** | **4.0000e-005** | **0.0000** | **1.2234** |

## 3.4 Grading - 2021

**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 | | | | | 0.1741 | 0.0000 | 0.1741 | 0.0693 | 0.0000 | 0.0693 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0796 | 0.8816 | 0.5867 | 1.1800e-003 | | 0.0377 | 0.0377 | | 0.0347 | 0.0347 | 0.0000 | 103.5405 | 103.5405 | 0.0335 | 0.0000 | 104.3776 |
| **Total** | **0.0796** | **0.8816** | **0.5867** | **1.1800e-003** | **0.1741** | **0.0377** | **0.2118** | **0.0693** | **0.0347** | **0.1040** | **0.0000** | **103.5405** | **103.5405** | **0.0335** | **0.0000** | **104.3776** |

## 3.4 Grading - 2021

### 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 | 9.0000e-004 | 0.0103 | 3.0000e-005 | 2.8300e-003 | 2.0000e-005 | 2.8600e-003 | 7.5000e-004 | 2.0000e-005 | 7.8000e-004 | 0.0000 | 2.5808 | 2.5808 | 8.0000e-005 | 0.0000 | 2.5828 |
| **Total** | **1.2200e-003** | **9.0000e-004** | **0.0103** | **3.0000e-005** | **2.8300e-003** | **2.0000e-005** | **2.8600e-003** | **7.5000e-004** | **2.0000e-005** | **7.8000e-004** | **0.0000** | **2.5808** | **2.5808** | **8.0000e-005** | **0.0000** | **2.5828** |

### 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 | | | | | 0.1741 | 0.0000 | 0.1741 | 0.0693 | 0.0000 | 0.0693 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0796 | 0.8816 | 0.5867 | 1.1800e-003 | | 0.0377 | 0.0377 | | 0.0347 | 0.0347 | 0.0000 | 103.5403 | 103.5403 | 0.0335 | 0.0000 | 104.3775 |
| **Total** | **0.0796** | **0.8816** | **0.5867** | **1.1800e-003** | **0.1741** | **0.0377** | **0.2118** | **0.0693** | **0.0347** | **0.1040** | **0.0000** | **103.5403** | **103.5403** | **0.0335** | **0.0000** | **104.3775** |

## 3.4 Grading - 2021

**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 | 9.0000e-004 | 0.0103 | 3.0000e-005 | 2.8300e-003 | 2.0000e-005 | 2.8600e-003 | 7.5000e-004 | 2.0000e-005 | 7.8000e-004 | 0.0000 | 2.5808 | 2.5808 | 8.0000e-005 | 0.0000 | 2.5828 |
| **Total** | **1.2200e-003** | **9.0000e-004** | **0.0103** | **3.0000e-005** | **2.8300e-003** | **2.0000e-005** | **2.8600e-003** | **7.5000e-004** | **2.0000e-005** | **7.8000e-004** | **0.0000** | **2.5808** | **2.5808** | **8.0000e-005** | **0.0000** | **2.5828** |

## 3.4 Grading - 2022

**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 | | | | | 0.0807 | 0.0000 | 0.0807 | 0.0180 | 0.0000 | 0.0180 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0127 | 0.1360 | 0.1017 | 2.2000e-004 | | 5.7200e-003 | 5.7200e-003 | | 5.2600e-003 | 5.2600e-003 | 0.0000 | 19.0871 | 19.0871 | 6.1700e-003 | 0.0000 | 19.2414 |
| **Total** | **0.0127** | **0.1360** | **0.1017** | **2.2000e-004** | **0.0807** | **5.7200e-003** | **0.0865** | **0.0180** | **5.2600e-003** | **0.0233** | **0.0000** | **19.0871** | **19.0871** | **6.1700e-003** | **0.0000** | **19.2414** |

## 3.4 Grading - 2022

### 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 | 2.1000e-004 | 1.5000e-004 | 1.7400e-003 | 1.0000e-005 | 5.2000e-004 | 0.0000 | 5.3000e-004 | 1.4000e-004 | 0.0000 | 1.4000e-004 | 0.0000 | 0.4587 | 0.4587 | 1.0000e-005 | 0.0000 | 0.4590 |
| **Total** | **2.1000e-004** | **1.5000e-004** | **1.7400e-003** | **1.0000e-005** | **5.2000e-004** | **0.0000** | **5.3000e-004** | **1.4000e-004** | **0.0000** | **1.4000e-004** | **0.0000** | **0.4587** | **0.4587** | **1.0000e-005** | **0.0000** | **0.4590** |

### 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 | | | | | 0.0807 | 0.0000 | 0.0807 | 0.0180 | 0.0000 | 0.0180 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0127 | 0.1360 | 0.1017 | 2.2000e-004 | | 5.7200e-003 | 5.7200e-003 | | 5.2600e-003 | 5.2600e-003 | 0.0000 | 19.0871 | 19.0871 | 6.1700e-003 | 0.0000 | 19.2414 |
| **Total** | **0.0127** | **0.1360** | **0.1017** | **2.2000e-004** | **0.0807** | **5.7200e-003** | **0.0865** | **0.0180** | **5.2600e-003** | **0.0233** | **0.0000** | **19.0871** | **19.0871** | **6.1700e-003** | **0.0000** | **19.2414** |

## 3.4 Grading - 2022

**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 | 2.1000e-004 | 1.5000e-004 | 1.7400e-003 | 1.0000e-005 | 5.2000e-004 | 0.0000 | 5.3000e-004 | 1.4000e-004 | 0.0000 | 1.4000e-004 | 0.0000 | 0.4587 | 0.4587 | 1.0000e-005 | 0.0000 | 0.4590 |
| **Total** | **2.1000e-004** | **1.5000e-004** | **1.7400e-003** | **1.0000e-005** | **5.2000e-004** | **0.0000** | **5.3000e-004** | **1.4000e-004** | **0.0000** | **1.4000e-004** | **0.0000** | **0.4587** | **0.4587** | **1.0000e-005** | **0.0000** | **0.4590** |

## 3.5 Building Construction - 2022

**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 | 0.2158 | 1.9754 | 2.0700 | 3.4100e-003 | | 0.1023 | 0.1023 | | 0.0963 | 0.0963 | 0.0000 | 293.1324 | 293.1324 | 0.0702 | 0.0000 | 294.8881 |
| **Total** | **0.2158** | **1.9754** | **2.0700** | **3.4100e-003** | | **0.1023** | **0.1023** | | **0.0963** | **0.0963** | **0.0000** | **293.1324** | **293.1324** | **0.0702** | **0.0000** | **294.8881** |

## 3.5 Building Construction - 2022

### 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 | 0.0527 | 1.6961 | 0.4580 | 4.5500e-003 | 0.1140 | 3.1800e-003 | 0.1171 | 0.0329 | 3.0400e-003 | 0.0359 | 0.0000 | 441.9835 | 441.9835 | 0.0264 | 0.0000 | 442.6435 |
| Worker | 0.3051 | 0.2164 | 2.5233 | 7.3500e-003 | 0.7557 | 6.2300e-003 | 0.7619 | 0.2007 | 5.7400e-003 | 0.2065 | 0.0000 | 663.9936 | 663.9936 | 0.0187 | 0.0000 | 664.4604 |
| **Total** | **0.3578** | **1.9125** | **2.9812** | **0.0119** | **0.8696** | **9.4100e-003** | **0.8790** | **0.2336** | **8.7800e-003** | **0.2424** | **0.0000** | **1,105.9771** | **1,105.9771** | **0.0451** | **0.0000** | **1,107.1039** |

### 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 | 0.2158 | 1.9754 | 2.0700 | 3.4100e-003 | | 0.1023 | 0.1023 | | 0.0963 | 0.0963 | 0.0000 | 293.1321 | 293.1321 | 0.0702 | 0.0000 | 294.8877 |
| **Total** | **0.2158** | **1.9754** | **2.0700** | **3.4100e-003** | | **0.1023** | **0.1023** | | **0.0963** | **0.0963** | **0.0000** | **293.1321** | **293.1321** | **0.0702** | **0.0000** | **294.8877** |

## 3.5 Building Construction - 2022

**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 | 0.0527 | 1.6961 | 0.4580 | 4.5500e-003 | 0.1140 | 3.1800e-003 | 0.1171 | 0.0329 | 3.0400e-003 | 0.0359 | 0.0000 | 441.9835 | 441.9835 | 0.0264 | 0.0000 | 442.6435 |
| Worker | 0.3051 | 0.2164 | 2.5233 | 7.3500e-003 | 0.7557 | 6.2300e-003 | 0.7619 | 0.2007 | 5.7400e-003 | 0.2065 | 0.0000 | 663.9936 | 663.9936 | 0.0187 | 0.0000 | 664.4604 |
| **Total** | **0.3578** | **1.9125** | **2.9812** | **0.0119** | **0.8696** | **9.4100e-003** | **0.8790** | **0.2336** | **8.7800e-003** | **0.2424** | **0.0000** | **1,105.9771** | **1,105.9771** | **0.0451** | **0.0000** | **1,107.1039** |

## 3.5 Building Construction - 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 | 0.1942 | 1.7765 | 2.0061 | 3.3300e-003 | | 0.0864 | 0.0864 | | 0.0813 | 0.0813 | 0.0000 | 286.2789 | 286.2789 | 0.0681 | 0.0000 | 287.9814 |
| **Total** | **0.1942** | **1.7765** | **2.0061** | **3.3300e-003** | | **0.0864** | **0.0864** | | **0.0813** | **0.0813** | **0.0000** | **286.2789** | **286.2789** | **0.0681** | **0.0000** | **287.9814** |

## 3.5 Building Construction - 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 | 0.0382 | 1.2511 | 0.4011 | 4.3000e-003 | 0.1113 | 1.4600e-003 | 0.1127 | 0.0321 | 1.4000e-003 | 0.0335 | 0.0000 | 417.9930 | 417.9930 | 0.0228 | 0.0000 | 418.5624 |
| Worker | 0.2795 | 0.1910 | 2.2635 | 6.9100e-003 | 0.7377 | 5.9100e-003 | 0.7436 | 0.1960 | 5.4500e-003 | 0.2014 | 0.0000 | 624.5363 | 624.5363 | 0.0164 | 0.0000 | 624.9466 |
| **Total** | **0.3177** | **1.4420** | **2.6646** | **0.0112** | **0.8490** | **7.3700e-003** | **0.8564** | **0.2281** | **6.8500e-003** | **0.2349** | **0.0000** | **1,042.5294** | **1,042.5294** | **0.0392** | **0.0000** | **1,043.5090** |

### 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 | 0.1942 | 1.7765 | 2.0061 | 3.3300e-003 | | 0.0864 | 0.0864 | | 0.0813 | 0.0813 | 0.0000 | 286.2785 | 286.2785 | 0.0681 | 0.0000 | 287.9811 |
| **Total** | **0.1942** | **1.7765** | **2.0061** | **3.3300e-003** | | **0.0864** | **0.0864** | | **0.0813** | **0.0813** | **0.0000** | **286.2785** | **286.2785** | **0.0681** | **0.0000** | **287.9811** |

## 3.5 Building Construction - 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 | 0.0382 | 1.2511 | 0.4011 | 4.3000e-003 | 0.1113 | 1.4600e-003 | 0.1127 | 0.0321 | 1.4000e-003 | 0.0335 | 0.0000 | 417.9930 | 417.9930 | 0.0228 | 0.0000 | 418.5624 |
| Worker | 0.2795 | 0.1910 | 2.2635 | 6.9100e-003 | 0.7377 | 5.9100e-003 | 0.7436 | 0.1960 | 5.4500e-003 | 0.2014 | 0.0000 | 624.5363 | 624.5363 | 0.0164 | 0.0000 | 624.9466 |
| **Total** | **0.3177** | **1.4420** | **2.6646** | **0.0112** | **0.8490** | **7.3700e-003** | **0.8564** | **0.2281** | **6.8500e-003** | **0.2349** | **0.0000** | **1,042.5294** | **1,042.5294** | **0.0392** | **0.0000** | **1,043.5090** |

## 3.6 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 | | | | | |
| Off-Road | 6.7100e-003 | 0.0663 | 0.0948 | 1.5000e-004 | | 3.3200e-003 | 3.3200e-003 | | 3.0500e-003 | 3.0500e-003 | 0.0000 | 13.0175 | 13.0175 | 4.2100e-003 | 0.0000 | 13.1227 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **6.7100e-003** | **0.0663** | **0.0948** | **1.5000e-004** | | **3.3200e-003** | **3.3200e-003** | | **3.0500e-003** | **3.0500e-003** | **0.0000** | **13.0175** | **13.0175** | **4.2100e-003** | **0.0000** | **13.1227** |

## 3.6 Paving - 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 | 2.8000e-004 | 1.9000e-004 | 2.2300e-003 | 1.0000e-005 | 7.3000e-004 | 1.0000e-005 | 7.3000e-004 | 1.9000e-004 | 1.0000e-005 | 2.0000e-004 | 0.0000 | 0.6156 | 0.6156 | 2.0000e-005 | 0.0000 | 0.6160 |
| **Total** | **2.8000e-004** | **1.9000e-004** | **2.2300e-003** | **1.0000e-005** | **7.3000e-004** | **1.0000e-005** | **7.3000e-004** | **1.9000e-004** | **1.0000e-005** | **2.0000e-004** | **0.0000** | **0.6156** | **0.6156** | **2.0000e-005** | **0.0000** | **0.6160** |

### 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 | 6.7100e-003 | 0.0663 | 0.0948 | 1.5000e-004 | | 3.3200e-003 | 3.3200e-003 | | 3.0500e-003 | 3.0500e-003 | 0.0000 | 13.0175 | 13.0175 | 4.2100e-003 | 0.0000 | 13.1227 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **6.7100e-003** | **0.0663** | **0.0948** | **1.5000e-004** | | **3.3200e-003** | **3.3200e-003** | | **3.0500e-003** | **3.0500e-003** | **0.0000** | **13.0175** | **13.0175** | **4.2100e-003** | **0.0000** | **13.1227** |

### 3.6 Paving - 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 | 2.8000e-004 | 1.9000e-004 | 2.2300e-003 | 1.0000e-005 | 7.3000e-004 | 1.0000e-005 | 7.3000e-004 | 1.9000e-004 | 1.0000e-005 | 2.0000e-004 | 0.0000 | 0.6156 | 0.6156 | 2.0000e-005 | 0.0000 | 0.6160 |
| **Total** | **2.8000e-004** | **1.9000e-004** | **2.2300e-003** | **1.0000e-005** | **7.3000e-004** | **1.0000e-005** | **7.3000e-004** | **1.9000e-004** | **1.0000e-005** | **2.0000e-004** | **0.0000** | **0.6156** | **0.6156** | **2.0000e-005** | **0.0000** | **0.6160** |

### 3.6 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 | | | | | |
| Off-Road | 0.0109 | 0.1048 | 0.1609 | 2.5000e-004 | | 5.1500e-003 | 5.1500e-003 | | 4.7400e-003 | 4.7400e-003 | 0.0000 | 22.0292 | 22.0292 | 7.1200e-003 | 0.0000 | 22.2073 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0109** | **0.1048** | **0.1609** | **2.5000e-004** | | **5.1500e-003** | **5.1500e-003** | | **4.7400e-003** | **4.7400e-003** | **0.0000** | **22.0292** | **22.0292** | **7.1200e-003** | **0.0000** | **22.2073** |

## 3.6 Paving - 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 | 4.4000e-004 | 2.9000e-004 | 3.5100e-003 | 1.0000e-005 | 1.2300e-003 | 1.0000e-005 | 1.2400e-003 | 3.3000e-004 | 1.0000e-005 | 3.4000e-004 | 0.0000 | 1.0094 | 1.0094 | 3.0000e-005 | 0.0000 | 1.0100 |
| **Total** | **4.4000e-004** | **2.9000e-004** | **3.5100e-003** | **1.0000e-005** | **1.2300e-003** | **1.0000e-005** | **1.2400e-003** | **3.3000e-004** | **1.0000e-005** | **3.4000e-004** | **0.0000** | **1.0094** | **1.0094** | **3.0000e-005** | **0.0000** | **1.0100** |

### 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 | 0.0109 | 0.1048 | 0.1609 | 2.5000e-004 | | 5.1500e-003 | 5.1500e-003 | | 4.7400e-003 | 4.7400e-003 | 0.0000 | 22.0292 | 22.0292 | 7.1200e-003 | 0.0000 | 22.2073 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0109** | **0.1048** | **0.1609** | **2.5000e-004** | | **5.1500e-003** | **5.1500e-003** | | **4.7400e-003** | **4.7400e-003** | **0.0000** | **22.0292** | **22.0292** | **7.1200e-003** | **0.0000** | **22.2073** |

## 3.6 Paving - 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 | 4.4000e-004 | 2.9000e-004 | 3.5100e-003 | 1.0000e-005 | 1.2300e-003 | 1.0000e-005 | 1.2400e-003 | 3.3000e-004 | 1.0000e-005 | 3.4000e-004 | 0.0000 | 1.0094 | 1.0094 | 3.0000e-005 | 0.0000 | 1.0100 |
| **Total** | **4.4000e-004** | **2.9000e-004** | **3.5100e-003** | **1.0000e-005** | **1.2300e-003** | **1.0000e-005** | **1.2400e-003** | **3.3000e-004** | **1.0000e-005** | **3.4000e-004** | **0.0000** | **1.0094** | **1.0094** | **3.0000e-005** | **0.0000** | **1.0100** |

## 3.7 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 | 4.1372 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.1600e-003 | 0.0213 | 0.0317 | 5.0000e-005 | | 1.0700e-003 | 1.0700e-003 | | 1.0700e-003 | 1.0700e-003 | 0.0000 | 4.4682 | 4.4682 | 2.5000e-004 | 0.0000 | 4.4745 |
| **Total** | **4.1404** | **0.0213** | **0.0317** | **5.0000e-005** | | **1.0700e-003** | **1.0700e-003** | | **1.0700e-003** | **1.0700e-003** | **0.0000** | **4.4682** | **4.4682** | **2.5000e-004** | **0.0000** | **4.4745** |

## 3.7 Architectural Coating - 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 | 7.4800e-003 | 4.9300e-003 | 0.0596 | 1.9000e-004 | 0.0209 | 1.6000e-004 | 0.0211 | 5.5500e-003 | 1.5000e-004 | 5.7000e-003 | 0.0000 | 17.1287 | 17.1287 | 4.3000e-004 | 0.0000 | 17.1394 |
| **Total** | **7.4800e-003** | **4.9300e-003** | **0.0596** | **1.9000e-004** | **0.0209** | **1.6000e-004** | **0.0211** | **5.5500e-003** | **1.5000e-004** | **5.7000e-003** | **0.0000** | **17.1287** | **17.1287** | **4.3000e-004** | **0.0000** | **17.1394** |

### 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 | 4.1372 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.1600e-003 | 0.0213 | 0.0317 | 5.0000e-005 | | 1.0700e-003 | 1.0700e-003 | | 1.0700e-003 | 1.0700e-003 | 0.0000 | 4.4682 | 4.4682 | 2.5000e-004 | 0.0000 | 4.4745 |
| **Total** | **4.1404** | **0.0213** | **0.0317** | **5.0000e-005** | | **1.0700e-003** | **1.0700e-003** | | **1.0700e-003** | **1.0700e-003** | **0.0000** | **4.4682** | **4.4682** | **2.5000e-004** | **0.0000** | **4.4745** |

### 3.7 Architectural Coating - 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 | 7.4800e-003 | 4.9300e-003 | 0.0596 | 1.9000e-004 | 0.0209 | 1.6000e-004 | 0.0211 | 5.5500e-003 | 1.5000e-004 | 5.7000e-003 | 0.0000 | 17.1287 | 17.1287 | 4.3000e-004 | 0.0000 | 17.1394 |
| **Total** | **7.4800e-003** | **4.9300e-003** | **0.0596** | **1.9000e-004** | **0.0209** | **1.6000e-004** | **0.0211** | **5.5500e-003** | **1.5000e-004** | **5.7000e-003** | **0.0000** | **17.1287** | **17.1287** | **4.3000e-004** | **0.0000** | **17.1394** |

## 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 | 1.5857 | 7.9962 | 19.1834 | 0.0821 | 7.7979 | 0.0580 | 7.8559 | 2.0895 | 0.0539 | 2.1434 | 0.0000 | 7,620.4986 | 7,620.4986 | 0.3407 | 0.0000 | 7,629.0162 |
| Unmitigated | 1.5857 | 7.9962 | 19.1834 | 0.0821 | 7.7979 | 0.0580 | 7.8559 | 2.0895 | 0.0539 | 2.1434 | 0.0000 | 7,620.4986 | 7,620.4986 | 0.3407 | 0.0000 | 7,629.0162 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 145.75 | 154.25 | 154.00 | 506,227 | 506,227 |
| Apartments Mid Rise | 4,026.75 | 3,773.25 | 4075.50 | 13,660,065 | 13,660,065 |
| General Office Building | 288.45 | 62.55 | 31.05 | 706,812 | 706,812 |
| High Turnover (Sit Down Restaurant) | 2,368.80 | 2,873.52 | 2817.72 | 3,413,937 | 3,413,937 |
| Hotel | 192.00 | 187.50 | 160.00 | 445,703 | 445,703 |
| Quality Restaurant | 501.12 | 511.92 | 461.20 | 707,488 | 707,488 |
| Regional Shopping Center | 528.08 | 601.44 | 357.84 | 1,112,221 | 1,112,221 |
| Total | 8,050.95 | 8,164.43 | 8,057.31 | 20,552,452 | 20,552,452 |

## 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 Low Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| Apartments Mid Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| General Office Building | 16.60 | 8.40 | 6.90 | 33.00 | 48.00 | 19.00 | 77 | 19 | 4 |
| High Turnover (Sit Down | 16.60 | 8.40 | 6.90 | 8.50 | 72.50 | 19.00 | 37 | 20 | 43 |
| Hotel | 16.60 | 8.40 | 6.90 | 19.40 | 61.60 | 19.00 | 58 | 38 | 4 |
| Quality Restaurant | 16.60 | 8.40 | 6.90 | 12.00 | 69.00 | 19.00 | 38 | 18 | 44 |
| Regional Shopping Center | 16.60 | 8.40 | 6.90 | 16.30 | 64.70 | 19.00 | 54 | 35 | 11 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Low Rise | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Apartments Mid Rise | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| General Office Building | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| High Turnover (Sit Down Restaurant) | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Hotel | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Quality Restaurant | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Regional Shopping Center | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Annual

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 2,512.6465 | 2,512.6465 | 0.1037 | 0.0215 | 2,521.6356 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2,512.6465 | 2,512.6465 | 0.1037 | 0.0215 | 2,521.6356 |
| NaturalGas Mitigated | 0.1398 | 1.2312 | 0.7770 | 7.6200e-003 | | 0.0966 | 0.0966 | | 0.0966 | 0.0966 | 0.0000 | 1,383.4267 | 1,383.4267 | 0.0265 | 0.0254 | 1,391.6478 |
| NaturalGas Unmitigated | 0.1398 | 1.2312 | 0.7770 | 7.6200e-003 | | 0.0966 | 0.0966 | | 0.0966 | 0.0966 | 0.0000 | 1,383.4267 | 1,383.4267 | 0.0265 | 0.0254 | 1,391.6478 |

## 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 Low Rise | 408494 | 2.2000e-003 | 0.0188 | 8.0100e-003 | 1.2000e-004 | | 1.5200e-003 | 1.5200e-003 | | 1.5200e-003 | 1.5200e-003 | 0.0000 | 21.7988 | 21.7988 | 4.2000e-004 | 4.0000e-004 | 21.9284 |
| Apartments Mid Rise | 1.30613e+007 | 0.0704 | 0.6018 | 0.2561 | 3.8400e-003 | | 0.0487 | 0.0487 | | 0.0487 | 0.0487 | 0.0000 | 696.9989 | 696.9989 | 0.0134 | 0.0128 | 701.1408 |
| General Office Building | 468450 | 2.5300e-003 | 0.0230 | 0.0193 | 1.4000e-004 | | 1.7500e-003 | 1.7500e-003 | | 1.7500e-003 | 1.7500e-003 | 0.0000 | 24.9983 | 24.9983 | 4.8000e-004 | 4.6000e-004 | 25.1468 |
| High Turnover (Sit Down Restaurant) | 8.30736e+006 | 0.0448 | 0.4072 | 0.3421 | 2.4400e-003 | | 0.0310 | 0.0310 | | 0.0310 | 0.0310 | 0.0000 | 443.3124 | 443.3124 | 8.5000e-003 | 8.1300e-003 | 445.9468 |
| Hotel | 1.74095e+006 | 9.3900e-003 | 0.0853 | 0.0717 | 5.1000e-004 | | 6.4900e-003 | 6.4900e-003 | | 6.4900e-003 | 6.4900e-003 | 0.0000 | 92.9036 | 92.9036 | 1.7800e-003 | 1.7000e-003 | 93.4557 |
| Quality Restaurant | 1.84608e+006 | 9.9500e-003 | 0.0905 | 0.0760 | 5.4000e-004 | | 6.8800e-003 | 6.8800e-003 | | 6.8800e-003 | 6.8800e-003 | 0.0000 | 98.5139 | 98.5139 | 1.8900e-003 | 1.8100e-003 | 99.0993 |
| Regional Shopping Center | 91840 | 5.0000e-004 | 4.5000e-003 | 3.7800e-003 | 3.0000e-005 | | 3.4000e-004 | 3.4000e-004 | | 3.4000e-004 | 3.4000e-004 | 0.0000 | 4.9009 | 4.9009 | 9.0000e-005 | 9.0000e-005 | 4.9301 |
| **Total** | | **0.1398** | **1.2312** | **0.7770** | **7.6200e-003** | | **0.0966** | **0.0966** | | **0.0966** | **0.0966** | **0.0000** | **1,383.4268** | **1,383.4268** | **0.0265** | **0.0254** | **1,391.6478** |

## 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 Low Rise | 408494 | 2.2000e-003 | 0.0188 | 8.0100e-003 | 1.2000e-004 | | 1.5200e-003 | 1.5200e-003 | | 1.5200e-003 | 1.5200e-003 | 0.0000 | 21.7988 | 21.7988 | 4.2000e-004 | 4.0000e-004 | 21.9284 |
| Apartments Mid Rise | 1.30613e+007 | 0.0704 | 0.6018 | 0.2561 | 3.8400e-003 | | 0.0487 | 0.0487 | | 0.0487 | 0.0487 | 0.0000 | 696.9989 | 696.9989 | 0.0134 | 0.0128 | 701.1408 |
| General Office Building | 468450 | 2.5300e-003 | 0.0230 | 0.0193 | 1.4000e-004 | | 1.7500e-003 | 1.7500e-003 | | 1.7500e-003 | 1.7500e-003 | 0.0000 | 24.9983 | 24.9983 | 4.8000e-004 | 4.6000e-004 | 25.1468 |
| High Turnover (Sit Down Restaurant) | 8.30736e+006 | 0.0448 | 0.4072 | 0.3421 | 2.4400e-003 | | 0.0310 | 0.0310 | | 0.0310 | 0.0310 | 0.0000 | 443.3124 | 443.3124 | 8.5000e-003 | 8.1300e-003 | 445.9468 |
| Hotel | 1.74095e+006 | 9.3900e-003 | 0.0853 | 0.0717 | 5.1000e-004 | | 6.4900e-003 | 6.4900e-003 | | 6.4900e-003 | 6.4900e-003 | 0.0000 | 92.9036 | 92.9036 | 1.7800e-003 | 1.7000e-003 | 93.4557 |
| Quality Restaurant | 1.84608e+006 | 9.9500e-003 | 0.0905 | 0.0760 | 5.4000e-004 | | 6.8800e-003 | 6.8800e-003 | | 6.8800e-003 | 6.8800e-003 | 0.0000 | 98.5139 | 98.5139 | 1.8900e-003 | 1.8100e-003 | 99.0993 |
| Regional Shopping Center | 91840 | 5.0000e-004 | 4.5000e-003 | 3.7800e-003 | 3.0000e-005 | | 3.4000e-004 | 3.4000e-004 | | 3.4000e-004 | 3.4000e-004 | 0.0000 | 4.9009 | 4.9009 | 9.0000e-005 | 9.0000e-005 | 4.9301 |
| **Total** | | **0.1398** | **1.2312** | **0.7770** | **7.6200e-003** | | **0.0966** | **0.0966** | | **0.0966** | **0.0966** | **0.0000** | **1,383.4268** | **1,383.4268** | **0.0265** | **0.0254** | **1,391.6478** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Low Rise | 106010 | 33.7770 | 1.3900e-003 | 2.9000e-004 | 33.8978 |
| Apartments Mid Rise | 3.94697e+006 | 1,257.5879 | 0.0519 | 0.0107 | 1,262.0869 |
| General Office Building | 584550 | 186.2502 | 7.6900e-003 | 1.5900e-003 | 186.9165 |
| High Turnover (Sit Down Restaurant) | 1.58904e+006 | 506.3022 | 0.0209 | 4.3200e-003 | 508.1135 |
| Hotel | 550308 | 175.3399 | 7.2400e-003 | 1.5000e-003 | 175.9672 |
| Quality Restaurant | 353120 | 112.5116 | 4.6500e-003 | 9.6000e-004 | 112.9141 |
| Regional Shopping Center | 756000 | 240.8778 | 9.9400e-003 | 2.0600e-003 | 241.7395 |
| **Total** | | **2,512.6465** | **0.1037** | **0.0215** | **2,521.6356** |

## 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Low Rise | 106010 | 33.7770 | 1.3900e-003 | 2.9000e-004 | 33.8978 |
| Apartments Mid Rise | 3.94697e+006 | 1,257.5879 | 0.0519 | 0.0107 | 1,262.0869 |
| General Office Building | 584550 | 186.2502 | 7.6900e-003 | 1.5900e-003 | 186.9165 |
| High Turnover (Sit Down Restaurant) | 1.58904e+006 | 506.3022 | 0.0209 | 4.3200e-003 | 508.1135 |
| Hotel | 550308 | 175.3399 | 7.2400e-003 | 1.5000e-003 | 175.9672 |
| Quality Restaurant | 353120 | 112.5116 | 4.6500e-003 | 9.6000e-004 | 112.9141 |
| Regional Shopping Center | 756000 | 240.8778 | 9.9400e-003 | 2.0600e-003 | 241.7395 |
| **Total** | | **2,512.6465** | **0.1037** | **0.0215** | **2,521.6356** |

# 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 | 5.1437 | 0.2950 | 10.3804 | 1.6700e-003 | | 0.0714 | 0.0714 | | 0.0714 | 0.0714 | 0.0000 | 220.9670 | 220.9670 | 0.0201 | 3.7400e-003 | 222.5835 |
| Unmitigated | 5.1437 | 0.2950 | 10.3804 | 1.6700e-003 | | 0.0714 | 0.0714 | | 0.0714 | 0.0714 | 0.0000 | 220.9670 | 220.9670 | 0.0201 | 3.7400e-003 | 222.5835 |

## 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 | 0.4137 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 4.3998 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.0206 | 0.1763 | 0.0750 | 1.1200e-003 | | 0.0143 | 0.0143 | | 0.0143 | 0.0143 | 0.0000 | 204.1166 | 204.1166 | 3.9100e-003 | 3.7400e-003 | 205.3295 |
| Landscaping | 0.3096 | 0.1187 | 10.3054 | 5.4000e-004 | | 0.0572 | 0.0572 | | 0.0572 | 0.0572 | 0.0000 | 16.8504 | 16.8504 | 0.0161 | 0.0000 | 17.2540 |
| **Total** | **5.1437** | **0.2950** | **10.3804** | **1.6600e-003** | | **0.0714** | **0.0714** | | **0.0714** | **0.0714** | **0.0000** | **220.9670** | **220.9670** | **0.0201** | **3.7400e-003** | **222.5835** |

### 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 | 0.4137 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 4.3998 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.0206 | 0.1763 | 0.0750 | 1.1200e-003 | | 0.0143 | 0.0143 | | 0.0143 | 0.0143 | 0.0000 | 204.1166 | 204.1166 | 3.9100e-003 | 3.7400e-003 | 205.3295 |
| Landscaping | 0.3096 | 0.1187 | 10.3054 | 5.4000e-004 | | 0.0572 | 0.0572 | | 0.0572 | 0.0572 | 0.0000 | 16.8504 | 16.8504 | 0.0161 | 0.0000 | 17.2540 |
| **Total** | **5.1437** | **0.2950** | **10.3804** | **1.6600e-003** | | **0.0714** | **0.0714** | | **0.0714** | **0.0714** | **0.0000** | **220.9670** | **220.9670** | **0.0201** | **3.7400e-003** | **222.5835** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Annual

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 585.8052 | 3.0183 | 0.0755 | 683.7567 |
| Unmitigated | 585.8052 | 3.0183 | 0.0755 | 683.7567 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Low Rise | 1.62885 / 1.02688 | 10.9095 | 0.0535 | 1.3400e-003 | 12.6471 |
| Apartments Mid Rise | 63.5252 / 40.0485 | 425.4719 | 2.0867 | 0.0523 | 493.2363 |
| General Office Building | 7.99802 / 4.90201 | 53.0719 | 0.2627 | 6.5900e-003 | 61.6019 |
| High Turnover (Sit Down Restaurant) | 10.9272 / 0.697482 | 51.2702 | 0.3580 | 8.8200e-003 | 62.8482 |
| Hotel | 1.26834 / 0.140927 | 6.1633 | 0.0416 | 1.0300e-003 | 7.5079 |
| Quality Restaurant | 2.42827 / 0.154996 | 11.3934 | 0.0796 | 1.9600e-003 | 13.9663 |
| Regional Shopping Center | 4.14806 / 2.54236 | 27.5250 | 0.1363 | 3.4200e-003 | 31.9490 |
| **Total** | | **585.8052** | **3.0183** | **0.0755** | **683.7567** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Low Rise | 1.62885 / 1.02688 | 10.9095 | 0.0535 | 1.3400e-003 | 12.6471 |
| Apartments Mid Rise | 63.5252 / 40.0485 | 425.4719 | 2.0867 | 0.0523 | 493.2363 |
| General Office Building | 7.99802 / 4.90201 | 53.0719 | 0.2627 | 6.5900e-003 | 61.6019 |
| High Turnover (Sit Down Restaurant) | 10.9272 / 0.697482 | 51.2702 | 0.3580 | 8.8200e-003 | 62.8482 |
| Hotel | 1.26834 / 0.140927 | 6.1633 | 0.0416 | 1.0300e-003 | 7.5079 |
| Quality Restaurant | 2.42827 / 0.154996 | 11.3934 | 0.0796 | 1.9600e-003 | 13.9663 |
| Regional Shopping Center | 4.14806 / 2.54236 | 27.5250 | 0.1363 | 3.4200e-003 | 31.9490 |
| **Total** | | **585.8052** | **3.0183** | **0.0755** | **683.7567** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 207.8079 | 12.2811 | 0.0000 | 514.8354 |
| Unmitigated | 207.8079 | 12.2811 | 0.0000 | 514.8354 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Low Rise | 11.5 | 2.3344 | 0.1380 | 0.0000 | 5.7834 |
| Apartments Mid Rise | 448.5 | 91.0415 | 5.3804 | 0.0000 | 225.5513 |
| General Office Building | 41.85 | 8.4952 | 0.5021 | 0.0000 | 21.0464 |
| High Turnover (Sit Down Restaurant) | 428.4 | 86.9613 | 5.1393 | 0.0000 | 215.4430 |
| Hotel | 27.38 | 5.5579 | 0.3285 | 0.0000 | 13.7694 |
| Quality Restaurant | 7.3 | 1.4818 | 0.0876 | 0.0000 | 3.6712 |
| Regional Shopping Center | 58.8 | 11.9359 | 0.7054 | 0.0000 | 29.5706 |
| **Total** | | **207.8079** | **12.2811** | **0.0000** | **514.8354** |

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Low Rise | 11.5 | 2.3344 | 0.1380 | 0.0000 | 5.7834 |
| Apartments Mid Rise | 448.5 | 91.0415 | 5.3804 | 0.0000 | 225.5513 |
| General Office Building | 41.85 | 8.4952 | 0.5021 | 0.0000 | 21.0464 |
| High Turnover (Sit Down Restaurant) | 428.4 | 86.9613 | 5.1393 | 0.0000 | 215.4430 |
| Hotel | 27.38 | 5.5579 | 0.3285 | 0.0000 | 13.7694 |
| Quality Restaurant | 7.3 | 1.4818 | 0.0876 | 0.0000 | 3.6712 |
| Regional Shopping Center | 58.8 | 11.9359 | 0.7054 | 0.0000 | 29.5706 |
| **Total** | | **207.8079** | **12.2811** | **0.0000** | **514.8354** |

## 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

# Village South Specific Plan (Proposed)

**Los Angeles-South Coast County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Office Building | 45.00 | 1000sqft | 1.03 | 45,000.00 | 0 |
| High Turnover (Sit Down Restaurant) | 36.00 | 1000sqft | 0.83 | 36,000.00 | 0 |
| Hotel | 50.00 | Room | 1.67 | 72,600.00 | 0 |
| Quality Restaurant | 8.00 | 1000sqft | 0.18 | 8,000.00 | 0 |
| Apartments Low Rise | 25.00 | Dwelling Unit | 1.56 | 25,000.00 | 72 |
| Apartments Mid Rise | 975.00 | Dwelling Unit | 25.66 | 975,000.00 | 2789 |
| Regional Shopping Center | 56.00 | 1000sqft | 1.29 | 56,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 33 |
| **Climate Zone** | 9 | | | **Operational Year** | 2028 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 702.44 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Summer

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment regarding residential and retail land uses.

Construction Phase - See SWAPE comment regarding individual construction phase lengths.

Demolition - Consistent with the DEIR's model. See SWAPE comment regarding demolition.

Vehicle Trips - Saturday trips consistent with the DEIR's model. See SWAPE comment regarding weekday and Sunday trips.

Woodstoves - Woodstoves and wood-burning fireplaces consistent with the DEIR's model. See SWAPE comment regarding gas fireplaces.

Energy Use -

Construction Off-road Equipment Mitigation - See SWAPE comment on construction-related mitigation.

Area Mitigation - See SWAPE comment regarding operational mitigation measures.

Water Mitigation - See SWAPE comment regarding operational mitigation measures.

Trips and VMT - Local hire provision

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblFireplaces | FireplaceWoodMass | 1,019.20 | 0.00 |
| tblFireplaces | FireplaceWoodMass | 1,019.20 | 0.00 |
| tblFireplaces | NumberWood | 1.25 | 0.00 |
| tblFireplaces | NumberWood | 48.75 | 0.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 10.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 10.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 10.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 10.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 10.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 10.00 |
| tblVehicleTrips | ST_TR | 7.16 | 6.17 |
| tblVehicleTrips | ST_TR | 6.39 | 3.87 |
| tblVehicleTrips | ST_TR | 2.46 | 1.39 |
| tblVehicleTrips | ST_TR | 158.37 | 79.82 |

| | | | |
|---|---|---|---|
| tblVehicleTrips | ST_TR | 8.19 | 3.75 |
| tblVehicleTrips | ST_TR | 94.36 | 63.99 |
| tblVehicleTrips | ST_TR | 49.97 | 10.74 |
| tblVehicleTrips | SU_TR | 6.07 | 6.16 |
| tblVehicleTrips | SU_TR | 5.86 | 4.18 |
| tblVehicleTrips | SU_TR | 1.05 | 0.69 |
| tblVehicleTrips | SU_TR | 131.84 | 78.27 |
| tblVehicleTrips | SU_TR | 5.95 | 3.20 |
| tblVehicleTrips | SU_TR | 72.16 | 57.65 |
| tblVehicleTrips | SU_TR | 25.24 | 6.39 |
| tblVehicleTrips | WD_TR | 6.59 | 5.83 |
| tblVehicleTrips | WD_TR | 6.65 | 4.13 |
| tblVehicleTrips | WD_TR | 11.03 | 6.41 |
| tblVehicleTrips | WD_TR | 127.15 | 65.80 |
| tblVehicleTrips | WD_TR | 8.17 | 3.84 |
| tblVehicleTrips | WD_TR | 89.95 | 62.64 |
| tblVehicleTrips | WD_TR | 42.70 | 9.43 |
| tblWoodstoves | NumberCatalytic | 1.25 | 0.00 |
| tblWoodstoves | NumberCatalytic | 48.75 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 1.25 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 48.75 | 0.00 |
| tblWoodstoves | WoodstoveDayYear | 25.00 | 0.00 |
| tblWoodstoves | WoodstoveDayYear | 25.00 | 0.00 |
| tblWoodstoves | WoodstoveWoodMass | 999.60 | 0.00 |
| tblWoodstoves | WoodstoveWoodMass | 999.60 | 0.00 |

## 2.0 Emissions Summary

## 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 | | | | | |
| 2021 | 4.2561 | 46.4415 | 31.4494 | 0.0636 | 18.2032 | 2.0456 | 20.2488 | 9.9670 | 1.8820 | 11.8490 | 0.0000 | 6,163.4166 | 6,163.4166 | 1.9475 | 0.0000 | 6,212.1039 |
| 2022 | 4.5441 | 38.8811 | 40.8776 | 0.1240 | 8.8255 | 1.6361 | 10.4616 | 3.6369 | 1.5052 | 5.1421 | 0.0000 | 12,493.4403 | 12,493.4403 | 1.9485 | 0.0000 | 12,518.5707 |
| 2023 | 4.1534 | 25.7658 | 38.7457 | 0.1206 | 7.0088 | 0.7592 | 7.7679 | 1.8799 | 0.7136 | 2.5935 | 0.0000 | 12,150.4890 | 12,150.4890 | 0.9589 | 0.0000 | 12,174.4615 |
| 2024 | 237.0219 | 9.5478 | 14.9642 | 0.0239 | 1.2171 | 0.4694 | 1.2875 | 0.3229 | 0.4319 | 0.4621 | 0.0000 | 2,313.1808 | 2,313.1808 | 0.7166 | 0.0000 | 2,331.0956 |
| **Maximum** | **237.0219** | **46.4415** | **40.8776** | **0.1240** | **18.2032** | **2.0456** | **20.2488** | **9.9670** | **1.8820** | **11.8490** | **0.0000** | **12,493.4403** | **12,493.4403** | **1.9485** | **0.0000** | **12,518.5707** |

## 2.1 Overall Construction (Maximum Daily Emission)

**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 | | | | | |
| 2021 | 4.2561 | 46.4415 | 31.4494 | 0.0636 | 18.2032 | 2.0456 | 20.2488 | 9.9670 | 1.8820 | 11.8490 | 0.0000 | 6,163.4166 | 6,163.4166 | 1.9475 | 0.0000 | 6,212.1039 |
| 2022 | 4.5441 | 38.8811 | 40.8776 | 0.1240 | 8.8255 | 1.6361 | 10.4616 | 3.6369 | 1.5052 | 5.1421 | 0.0000 | 12,493.4403 | 12,493.4403 | 1.9485 | 0.0000 | 12,518.5707 |
| 2023 | 4.1534 | 25.7658 | 38.7457 | 0.1206 | 7.0088 | 0.7592 | 7.7679 | 1.8799 | 0.7136 | 2.5935 | 0.0000 | 12,150.4890 | 12,150.4890 | 0.9589 | 0.0000 | 12,174.4615 |
| 2024 | 237.0219 | 9.5478 | 14.9642 | 0.0239 | 1.2171 | 0.4694 | 1.2875 | 0.3229 | 0.4319 | 0.4621 | 0.0000 | 2,313.1808 | 2,313.1808 | 0.7166 | 0.0000 | 2,331.0955 |
| **Maximum** | **237.0219** | **46.4415** | **40.8776** | **0.1240** | **18.2032** | **2.0456** | **20.2488** | **9.9670** | **1.8820** | **11.8490** | **0.0000** | **12,493.4403** | **12,493.4403** | **1.9485** | **0.0000** | **12,518.5707** |

| | ROG | NOx | 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** |

## 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 | 30.5020 | 15.0496 | 88.4430 | 0.0944 | | 1.5974 | 1.5974 | | 1.5974 | 1.5974 | 0.0000 | 18,148.5950 | 18,148.5950 | 0.4874 | 0.3300 | 18,259.1192 |
| Energy | 0.7660 | 6.7462 | 4.2573 | 0.0418 | | 0.5292 | 0.5292 | | 0.5292 | 0.5292 | | 8,355.9832 | 8,355.9832 | 0.1602 | 0.1532 | 8,405.6387 |
| Mobile | 9.8489 | 45.4304 | 114.8495 | 0.4917 | 45.9592 | 0.3360 | 46.2951 | 12.2950 | 0.3119 | 12.6070 | | 50,306.6034 | 50,306.6034 | 2.1807 | | 50,361.1208 |
| **Total** | **41.1168** | **67.2262** | **207.5497** | **0.6278** | **45.9592** | **2.4626** | **48.4217** | **12.2950** | **2.4385** | **14.7336** | **0.0000** | **76,811.1816** | **76,811.1816** | **2.8282** | **0.4832** | **77,025.8786** |

### 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 | 30.5020 | 15.0496 | 88.4430 | 0.0944 | | 1.5974 | 1.5974 | | 1.5974 | 1.5974 | 0.0000 | 18,148.5950 | 18,148.5950 | 0.4874 | 0.3300 | 18,259.1192 |
| Energy | 0.7660 | 6.7462 | 4.2573 | 0.0418 | | 0.5292 | 0.5292 | | 0.5292 | 0.5292 | | 8,355.9832 | 8,355.9832 | 0.1602 | 0.1532 | 8,405.6387 |
| Mobile | 9.8489 | 45.4304 | 114.8495 | 0.4917 | 45.9592 | 0.3360 | 46.2951 | 12.2950 | 0.3119 | 12.6070 | | 50,306.6034 | 50,306.6034 | 2.1807 | | 50,361.1208 |
| **Total** | **41.1168** | **67.2262** | **207.5497** | **0.6278** | **45.9592** | **2.4626** | **48.4217** | **12.2950** | **2.4385** | **14.7336** | **0.0000** | **76,811.1816** | **76,811.1816** | **2.8282** | **0.4832** | **77,025.8786** |

| | ROG | NOx | 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 | 9/1/2021 | 10/12/2021 | 5 | 30 | |
| 2 | Site Preparation | Site Preparation | 10/13/2021 | 11/9/2021 | 5 | 20 | |
| 3 | Grading | Grading | 11/10/2021 | 1/11/2022 | 5 | 45 | |
| 4 | Building Construction | Building Construction | 1/12/2022 | 12/12/2023 | 5 | 500 | |
| 5 | Paving | Paving | 12/13/2023 | 1/30/2024 | 5 | 35 | |
| 6 | Architectural Coating | Architectural Coating | 1/31/2024 | 3/19/2024 | 5 | 35 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 112.5**

**Acres of Paving: 0**

**Residential Indoor: 2,025,000; Residential Outdoor: 675,000; Non-Residential Indoor: 326,400; Non-Residential Outdoor: 108,800; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Summer

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**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 | 15.00 | 0.00 | 458.00 | 10.00 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.00 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.00 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 801.00 | 143.00 | 0.00 | 10.00 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.00 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 160.00 | 0.00 | 0.00 | 10.00 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2021

**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 | | | | | 3.3074 | 0.0000 | 3.3074 | 0.5008 | 0.0000 | 0.5008 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1651 | 31.4407 | 21.5650 | 0.0388 | | 1.5513 | 1.5513 | | 1.4411 | 1.4411 | | 3,747.9449 | 3,747.9449 | 1.0549 | | 3,774.3174 |
| **Total** | **3.1651** | **31.4407** | **21.5650** | **0.0388** | **3.3074** | **1.5513** | **4.8588** | **0.5008** | **1.4411** | **1.9419** | | **3,747.9449** | **3,747.9449** | **1.0549** | | **3,774.3174** |

## 3.2 Demolition - 2021

### 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 | 0.1273 | 4.0952 | 0.9602 | 0.0119 | 0.2669 | 0.0126 | 0.2795 | 0.0732 | 0.0120 | 0.0852 | | 1,292.2413 | 1,292.2413 | 0.0877 | | 1,294.4337 |
| 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 |
| Worker | 0.0487 | 0.0313 | 0.4282 | 1.1800e-003 | 0.1141 | 9.5000e-004 | 0.1151 | 0.0303 | 8.8000e-004 | 0.0311 | | 117.2799 | 117.2799 | 3.5200e-003 | | 117.3678 |
| **Total** | **0.1760** | **4.1265** | **1.3884** | **0.0131** | **0.3810** | **0.0135** | **0.3946** | **0.1034** | **0.0129** | **0.1163** | | **1,409.5212** | **1,409.5212** | **0.0912** | | **1,411.8015** |

### 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 | | | | | 3.3074 | 0.0000 | 3.3074 | 0.5008 | 0.0000 | 0.5008 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1651 | 31.4407 | 21.5650 | 0.0388 | | 1.5513 | 1.5513 | | 1.4411 | 1.4411 | 0.0000 | 3,747.9449 | 3,747.9449 | 1.0549 | | 3,774.3174 |
| **Total** | **3.1651** | **31.4407** | **21.5650** | **0.0388** | **3.3074** | **1.5513** | **4.8588** | **0.5008** | **1.4411** | **1.9419** | **0.0000** | **3,747.9449** | **3,747.9449** | **1.0549** | | **3,774.3174** |

## 3.2 Demolition - 2021

**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 | 0.1273 | 4.0952 | 0.9602 | 0.0119 | 0.2669 | 0.0126 | 0.2795 | 0.0732 | 0.0120 | 0.0852 | | 1,292.2413 | 1,292.2413 | 0.0877 | | 1,294.4337 |
| 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 |
| Worker | 0.0487 | 0.0313 | 0.4282 | 1.1800e-003 | 0.1141 | 9.5000e-004 | 0.1151 | 0.0303 | 8.8000e-004 | 0.0311 | | 117.2799 | 117.2799 | 3.5200e-003 | | 117.3678 |
| **Total** | **0.1760** | **4.1265** | **1.3884** | **0.0131** | **0.3810** | **0.0135** | **0.3946** | **0.1034** | **0.0129** | **0.1163** | | **1,409.5212** | **1,409.5212** | **0.0912** | | **1,411.8015** |

## 3.3 Site Preparation - 2021

**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 | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.8882 | 40.4971 | 21.1543 | 0.0380 | | 2.0445 | 2.0445 | | 1.8809 | 1.8809 | | 3,685.6569 | 3,685.6569 | 1.1920 | | 3,715.4573 |
| **Total** | **3.8882** | **40.4971** | **21.1543** | **0.0380** | **18.0663** | **2.0445** | **20.1107** | **9.9307** | **1.8809** | **11.8116** | | **3,685.6569** | **3,685.6569** | **1.1920** | | **3,715.4573** |

## 3.3 Site Preparation - 2021

### 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 |
| 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 |
| Worker | 0.0584 | 0.0375 | 0.5139 | 1.4100e-003 | 0.1369 | 1.1400e-003 | 0.1381 | 0.0363 | 1.0500e-003 | 0.0374 | | 140.7359 | 140.7359 | 4.2200e-003 | | 140.8414 |
| **Total** | **0.0584** | **0.0375** | **0.5139** | **1.4100e-003** | **0.1369** | **1.1400e-003** | **0.1381** | **0.0363** | **1.0500e-003** | **0.0374** | | **140.7359** | **140.7359** | **4.2200e-003** | | **140.8414** |

### 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 | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.8882 | 40.4971 | 21.1543 | 0.0380 | | 2.0445 | 2.0445 | | 1.8809 | 1.8809 | 0.0000 | 3,685.6569 | 3,685.6569 | 1.1920 | | 3,715.4573 |
| **Total** | **3.8882** | **40.4971** | **21.1543** | **0.0380** | **18.0663** | **2.0445** | **20.1107** | **9.9307** | **1.8809** | **11.8116** | **0.0000** | **3,685.6569** | **3,685.6569** | **1.1920** | | **3,715.4573** |

## 3.3 Site Preparation - 2021

**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 |
| 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 |
| Worker | 0.0584 | 0.0375 | 0.5139 | 1.4100e-003 | 0.1369 | 1.1400e-003 | 0.1381 | 0.0363 | 1.0500e-003 | 0.0374 | | 140.7359 | 140.7359 | 4.2200e-003 | | 140.8414 |
| **Total** | **0.0584** | **0.0375** | **0.5139** | **1.4100e-003** | **0.1369** | **1.1400e-003** | **0.1381** | **0.0363** | **1.0500e-003** | **0.0374** | | **140.7359** | **140.7359** | **4.2200e-003** | | **140.8414** |

## 3.4 Grading - 2021

**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 | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.1912 | 46.3998 | 30.8785 | 0.0620 | | 1.9853 | 1.9853 | | 1.8265 | 1.8265 | | 6,007.0434 | 6,007.0434 | 1.9428 | | 6,055.6134 |
| **Total** | **4.1912** | **46.3998** | **30.8785** | **0.0620** | **8.6733** | **1.9853** | **10.6587** | **3.5965** | **1.8265** | **5.4230** | | **6,007.0434** | **6,007.0434** | **1.9428** | | **6,055.6134** |

## 3.4 Grading - 2021

### 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 |
| 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 |
| Worker | 0.0649 | 0.0417 | 0.5710 | 1.5700e-003 | 0.1521 | 1.2700e-003 | 0.1534 | 0.0404 | 1.1700e-003 | 0.0415 | | 156.3732 | 156.3732 | 4.6900e-003 | | 156.4904 |
| **Total** | **0.0649** | **0.0417** | **0.5710** | **1.5700e-003** | **0.1521** | **1.2700e-003** | **0.1534** | **0.0404** | **1.1700e-003** | **0.0415** | | **156.3732** | **156.3732** | **4.6900e-003** | | **156.4904** |

### 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 | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.1912 | 46.3998 | 30.8785 | 0.0620 | | 1.9853 | 1.9853 | | 1.8265 | 1.8265 | 0.0000 | 6,007.0434 | 6,007.0434 | 1.9428 | | 6,055.6134 |
| **Total** | **4.1912** | **46.3998** | **30.8785** | **0.0620** | **8.6733** | **1.9853** | **10.6587** | **3.5965** | **1.8265** | **5.4230** | **0.0000** | **6,007.0434** | **6,007.0434** | **1.9428** | | **6,055.6134** |

## 3.4 Grading - 2021

**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 |
| 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 |
| Worker | 0.0649 | 0.0417 | 0.5710 | 1.5700e-003 | 0.1521 | 1.2700e-003 | 0.1534 | 0.0404 | 1.1700e-003 | 0.0415 | | 156.3732 | 156.3732 | 4.6900e-003 | | 156.4904 |
| **Total** | **0.0649** | **0.0417** | **0.5710** | **1.5700e-003** | **0.1521** | **1.2700e-003** | **0.1534** | **0.0404** | **1.1700e-003** | **0.0415** | | **156.3732** | **156.3732** | **4.6900e-003** | | **156.4904** |

## 3.4 Grading - 2022

**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 | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **8.6733** | **1.6349** | **10.3082** | **3.5965** | **1.5041** | **5.1006** | | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

## 3.4 Grading - 2022

### 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 |
| 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 |
| Worker | 0.0607 | 0.0376 | 0.5263 | 1.5100e-003 | 0.1521 | 1.2300e-003 | 0.1534 | 0.0404 | 1.1300e-003 | 0.0415 | | 150.8754 | 150.8754 | 4.2400e-003 | | 150.9813 |
| **Total** | **0.0607** | **0.0376** | **0.5263** | **1.5100e-003** | **0.1521** | **1.2300e-003** | **0.1534** | **0.0404** | **1.1300e-003** | **0.0415** | | **150.8754** | **150.8754** | **4.2400e-003** | | **150.9813** |

### 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 | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | 0.0000 | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **8.6733** | **1.6349** | **10.3082** | **3.5965** | **1.5041** | **5.1006** | **0.0000** | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

## 3.4 Grading - 2022

**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 |
| 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 |
| Worker | 0.0607 | 0.0376 | 0.5263 | 1.5100e-003 | 0.1521 | 1.2300e-003 | 0.1534 | 0.0404 | 1.1300e-003 | 0.0415 | | 150.8754 | 150.8754 | 4.2400e-003 | | 150.9813 |
| **Total** | **0.0607** | **0.0376** | **0.5263** | **1.5100e-003** | **0.1521** | **1.2300e-003** | **0.1534** | **0.0404** | **1.1300e-003** | **0.0415** | | **150.8754** | **150.8754** | **4.2400e-003** | | **150.9813** |

## 3.5 Building Construction - 2022

**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 | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

## 3.5 Building Construction - 2022

### 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 |
| Vendor | 0.4079 | 13.2032 | 3.4341 | 0.0364 | 0.9155 | 0.0248 | 0.9404 | 0.2636 | 0.0237 | 0.2873 | | 3,896.5482 | 3,896.5482 | 0.2236 | | 3,902.1384 |
| Worker | 2.4299 | 1.5074 | 21.0801 | 0.0607 | 6.0932 | 0.0493 | 6.1425 | 1.6163 | 0.0454 | 1.6617 | | 6,042.5585 | 6,042.5585 | 0.1697 | | 6,046.8000 |
| **Total** | **2.8378** | **14.7106** | **24.5142** | **0.0971** | **7.0087** | **0.0741** | **7.0828** | **1.8799** | **0.0691** | **1.9490** | | **9,939.1067** | **9,939.1067** | **0.3933** | | **9,948.9384** |

### 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 | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | 0.0000 | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | **0.0000** | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

## 3.5 Building Construction - 2022

**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 |
| Vendor | 0.4079 | 13.2032 | 3.4341 | 0.0364 | 0.9155 | 0.0248 | 0.9404 | 0.2636 | 0.0237 | 0.2873 | | 3,896.5482 | 3,896.5482 | 0.2236 | | 3,902.1384 |
| Worker | 2.4299 | 1.5074 | 21.0801 | 0.0607 | 6.0932 | 0.0493 | 6.1425 | 1.6163 | 0.0454 | 1.6617 | | 6,042.5585 | 6,042.5585 | 0.1697 | | 6,046.8000 |
| **Total** | **2.8378** | **14.7106** | **24.5142** | **0.0971** | **7.0087** | **0.0741** | **7.0828** | **1.8799** | **0.0691** | **1.9490** | | **9,939.1067** | **9,939.1067** | **0.3933** | | **9,948.9384** |

## 3.5 Building Construction - 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 | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

## 3.5 Building Construction - 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 |
| Vendor | 0.3027 | 10.0181 | 3.1014 | 0.0352 | 0.9156 | 0.0116 | 0.9271 | 0.2636 | 0.0111 | 0.2747 | | 3,773.8762 | 3,773.8762 | 0.1982 | | 3,778.8300 |
| Worker | 2.2780 | 1.3628 | 19.4002 | 0.0584 | 6.0932 | 0.0479 | 6.1411 | 1.6163 | 0.0441 | 1.6604 | | 5,821.4028 | 5,821.4028 | 0.1529 | | 5,825.2254 |
| **Total** | **2.5807** | **11.3809** | **22.5017** | **0.0936** | **7.0088** | **0.0595** | **7.0682** | **1.8799** | **0.0552** | **1.9350** | | **9,595.2790** | **9,595.2790** | **0.3511** | | **9,604.0554** |

### 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 | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | 0.0000 | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | **0.0000** | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

## 3.5 Building Construction - 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 |
| Vendor | 0.3027 | 10.0181 | 3.1014 | 0.0352 | 0.9156 | 0.0116 | 0.9271 | 0.2636 | 0.0111 | 0.2747 | | 3,773.8762 | 3,773.8762 | 0.1982 | | 3,778.8300 |
| Worker | 2.2780 | 1.3628 | 19.4002 | 0.0584 | 6.0932 | 0.0479 | 6.1411 | 1.6163 | 0.0441 | 1.6604 | | 5,821.4028 | 5,821.4028 | 0.1529 | | 5,825.2254 |
| **Total** | **2.5807** | **11.3809** | **22.5017** | **0.0936** | **7.0088** | **0.0595** | **7.0682** | **1.8799** | **0.0552** | **1.9350** | | **9,595.2790** | **9,595.2790** | **0.3511** | | **9,604.0554** |

## 3.6 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

## 3.6 Paving - 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 |
| 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 |
| Worker | 0.0427 | 0.0255 | 0.3633 | 1.0900e-003 | 0.1141 | 9.0000e-004 | 0.1150 | 0.0303 | 8.3000e-004 | 0.0311 | | 109.0150 | 109.0150 | 2.8600e-003 | | 109.0866 |
| **Total** | **0.0427** | **0.0255** | **0.3633** | **1.0900e-003** | **0.1141** | **9.0000e-004** | **0.1150** | **0.0303** | **8.3000e-004** | **0.0311** | | **109.0150** | **109.0150** | **2.8600e-003** | | **109.0866** |

### 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 | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | 0.0000 | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | **0.0000** | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

## 3.6 Paving - 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 |
| 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 |
| Worker | 0.0427 | 0.0255 | 0.3633 | 1.0900e-003 | 0.1141 | 9.0000e-004 | 0.1150 | 0.0303 | 8.3000e-004 | 0.0311 | | 109.0150 | 109.0150 | 2.8600e-003 | | 109.0866 |
| **Total** | **0.0427** | **0.0255** | **0.3633** | **1.0900e-003** | **0.1141** | **9.0000e-004** | **0.1150** | **0.0303** | **8.3000e-004** | **0.0311** | | **109.0150** | **109.0150** | **2.8600e-003** | | **109.0866** |

## 3.6 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9882 | 9.5246 | 14.6258 | 0.0228 | | 0.4685 | 0.4685 | | 0.4310 | 0.4310 | | 2,207.5472 | 2,207.5472 | 0.7140 | | 2,225.3963 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.9882** | **9.5246** | **14.6258** | **0.0228** | | **0.4685** | **0.4685** | | **0.4310** | **0.4310** | | **2,207.5472** | **2,207.5472** | **0.7140** | | **2,225.3963** |

## 3.6 Paving - 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 |
| 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 |
| Worker | 0.0403 | 0.0233 | 0.3384 | 1.0600e-003 | 0.1141 | 8.8000e-004 | 0.1150 | 0.0303 | 8.1000e-004 | 0.0311 | | 105.6336 | 105.6336 | 2.6300e-003 | | 105.6992 |
| **Total** | **0.0403** | **0.0233** | **0.3384** | **1.0600e-003** | **0.1141** | **8.8000e-004** | **0.1150** | **0.0303** | **8.1000e-004** | **0.0311** | | **105.6336** | **105.6336** | **2.6300e-003** | | **105.6992** |

### 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 | | | | | |
| Off-Road | 0.9882 | 9.5246 | 14.6258 | 0.0228 | | 0.4685 | 0.4685 | | 0.4310 | 0.4310 | 0.0000 | 2,207.5472 | 2,207.5472 | 0.7140 | | 2,225.3963 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.9882** | **9.5246** | **14.6258** | **0.0228** | | **0.4685** | **0.4685** | | **0.4310** | **0.4310** | **0.0000** | **2,207.5472** | **2,207.5472** | **0.7140** | | **2,225.3963** |

## 3.6 Paving - 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 |
| 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 |
| Worker | 0.0403 | 0.0233 | 0.3384 | 1.0600e-003 | 0.1141 | 8.8000e-004 | 0.1150 | 0.0303 | 8.1000e-004 | 0.0311 | | 105.6336 | 105.6336 | 2.6300e-003 | | 105.6992 |
| **Total** | **0.0403** | **0.0233** | **0.3384** | **1.0600e-003** | **0.1141** | **8.8000e-004** | **0.1150** | **0.0303** | **8.1000e-004** | **0.0311** | | **105.6336** | **105.6336** | **2.6300e-003** | | **105.6992** |

## 3.7 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 236.4115 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **236.5923** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

## 3.7 Architectural Coating - 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 |
| 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 |
| Worker | 0.4296 | 0.2481 | 3.6098 | 0.0113 | 1.2171 | 9.4300e-003 | 1.2266 | 0.3229 | 8.6800e-003 | 0.3315 | | 1,126.7583 | 1,126.7583 | 0.0280 | | 1,127.4583 |
| **Total** | **0.4296** | **0.2481** | **3.6098** | **0.0113** | **1.2171** | **9.4300e-003** | **1.2266** | **0.3229** | **8.6800e-003** | **0.3315** | | **1,126.7583** | **1,126.7583** | **0.0280** | | **1,127.4583** |

### 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 | 236.4115 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | 0.0000 | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **236.5923** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | **0.0000** | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

### 3.7 Architectural Coating - 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 |
| 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 |
| Worker | 0.4296 | 0.2481 | 3.6098 | 0.0113 | 1.2171 | 9.4300e-003 | 1.2266 | 0.3229 | 8.6800e-003 | 0.3315 | | 1,126.7583 | 1,126.7583 | 0.0280 | | 1,127.4583 |
| **Total** | **0.4296** | **0.2481** | **3.6098** | **0.0113** | **1.2171** | **9.4300e-003** | **1.2266** | **0.3229** | **8.6800e-003** | **0.3315** | | **1,126.7583** | **1,126.7583** | **0.0280** | | **1,127.4583** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 9.8489 | 45.4304 | 114.8495 | 0.4917 | 45.9592 | 0.3360 | 46.2951 | 12.2950 | 0.3119 | 12.6070 | | 50,306.6034 | 50,306.6034 | 2.1807 | | 50,361.1208 |
| Unmitigated | 9.8489 | 45.4304 | 114.8495 | 0.4917 | 45.9592 | 0.3360 | 46.2951 | 12.2950 | 0.3119 | 12.6070 | | 50,306.6034 | 50,306.6034 | 2.1807 | | 50,361.1208 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 145.75 | 154.25 | 154.00 | 506,227 | 506,227 |
| Apartments Mid Rise | 4,026.75 | 3,773.25 | 4075.50 | 13,660,065 | 13,660,065 |
| General Office Building | 288.45 | 62.55 | 31.05 | 706,812 | 706,812 |
| High Turnover (Sit Down Restaurant) | 2,368.80 | 2,873.52 | 2817.72 | 3,413,937 | 3,413,937 |
| Hotel | 192.00 | 187.50 | 160.00 | 445,703 | 445,703 |
| Quality Restaurant | 501.12 | 511.92 | 461.20 | 707,488 | 707,488 |
| Regional Shopping Center | 528.08 | 601.44 | 357.84 | 1,112,221 | 1,112,221 |
| Total | 8,050.95 | 8,164.43 | 8,057.31 | 20,552,452 | 20,552,452 |

## 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 Low Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| Apartments Mid Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| General Office Building | 16.60 | 8.40 | 6.90 | 33.00 | 48.00 | 19.00 | 77 | 19 | 4 |
| High Turnover (Sit Down | 16.60 | 8.40 | 6.90 | 8.50 | 72.50 | 19.00 | 37 | 20 | 43 |
| Hotel | 16.60 | 8.40 | 6.90 | 19.40 | 61.60 | 19.00 | 58 | 38 | 4 |
| Quality Restaurant | 16.60 | 8.40 | 6.90 | 12.00 | 69.00 | 19.00 | 38 | 18 | 44 |
| Regional Shopping Center | 16.60 | 8.40 | 6.90 | 16.30 | 64.70 | 19.00 | 54 | 35 | 11 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Low Rise | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Apartments Mid Rise | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| General Office Building | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| High Turnover (Sit Down Restaurant) | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Hotel | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Quality Restaurant | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Regional Shopping Center | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Summer

| | ROG | NOx | CO | SO2 | Fugitive 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 | 0.7660 | 6.7462 | 4.2573 | 0.0418 | | 0.5292 | 0.5292 | | 0.5292 | 0.5292 | | 8,355.9832 | 8,355.9832 | 0.1602 | 0.1532 | 8,405.6387 |
| NaturalGas Unmitigated | 0.7660 | 6.7462 | 4.2573 | 0.0418 | | 0.5292 | 0.5292 | | 0.5292 | 0.5292 | | 8,355.9832 | 8,355.9832 | 0.1602 | 0.1532 | 8,405.6387 |

## 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 Low Rise | 1119.16 | 0.0121 | 0.1031 | 0.0439 | 6.6000e-004 | | 8.3400e-003 | 8.3400e-003 | | 8.3400e-003 | 8.3400e-003 | | 131.6662 | 131.6662 | 2.5200e-003 | 2.4100e-003 | 132.4486 |
| Apartments Mid Rise | 35784.3 | 0.3859 | 3.2978 | 1.4033 | 0.0211 | | 0.2666 | 0.2666 | | 0.2666 | 0.2666 | | 4,209.9164 | 4,209.9164 | 0.0807 | 0.0772 | 4,234.9339 |
| General Office Building | 1283.42 | 0.0138 | 0.1258 | 0.1057 | 7.5000e-004 | | 9.5600e-003 | 9.5600e-003 | | 9.5600e-003 | 9.5600e-003 | | 150.9911 | 150.9911 | 2.8900e-003 | 2.7700e-003 | 151.8884 |
| High Turnover (Sit Down Restaurant) | 22759.9 | 0.2455 | 2.2314 | 1.8743 | 0.0134 | | 0.1696 | 0.1696 | | 0.1696 | 0.1696 | | 2,677.6342 | 2,677.6342 | 0.0513 | 0.0491 | 2,693.5460 |
| Hotel | 4769.72 | 0.0514 | 0.4676 | 0.3928 | 2.8100e-003 | | 0.0355 | 0.0355 | | 0.0355 | 0.0355 | | 561.1436 | 561.1436 | 0.0108 | 0.0103 | 564.4782 |
| Quality Restaurant | 5057.75 | 0.0545 | 0.4959 | 0.4165 | 2.9800e-003 | | 0.0377 | 0.0377 | | 0.0377 | 0.0377 | | 595.0298 | 595.0298 | 0.0114 | 0.0109 | 598.5658 |
| Regional Shopping Center | 251.616 | 2.7100e-003 | 0.0247 | 0.0207 | 1.5000e-004 | | 1.8700e-003 | 1.8700e-003 | | 1.8700e-003 | 1.8700e-003 | | 29.6019 | 29.6019 | 5.7000e-004 | 5.4000e-004 | 29.7778 |
| **Total** | | **0.7660** | **6.7463** | **4.2573** | **0.0418** | | **0.5292** | **0.5292** | | **0.5292** | **0.5292** | | **8,355.9832** | **8,355.9832** | **0.1602** | **0.1532** | **8,405.6387** |

## 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 Low Rise | 1.11916 | 0.0121 | 0.1031 | 0.0439 | 6.6000e-004 | | 8.3400e-003 | 8.3400e-003 | | 8.3400e-003 | 8.3400e-003 | | 131.6662 | 131.6662 | 2.5200e-003 | 2.4100e-003 | 132.4486 |
| Apartments Mid Rise | 35.7843 | 0.3859 | 3.2978 | 1.4033 | 0.0211 | | 0.2666 | 0.2666 | | 0.2666 | 0.2666 | | 4,209.9164 | 4,209.9164 | 0.0807 | 0.0772 | 4,234.9339 |
| General Office Building | 1.28342 | 0.0138 | 0.1258 | 0.1057 | 7.5000e-004 | | 9.5600e-003 | 9.5600e-003 | | 9.5600e-003 | 9.5600e-003 | | 150.9911 | 150.9911 | 2.8900e-003 | 2.7700e-003 | 151.8884 |
| High Turnover (Sit Down Restaurant) | 22.7599 | 0.2455 | 2.2314 | 1.8743 | 0.0134 | | 0.1696 | 0.1696 | | 0.1696 | 0.1696 | | 2,677.6342 | 2,677.6342 | 0.0513 | 0.0491 | 2,693.5460 |
| Hotel | 4.76972 | 0.0514 | 0.4676 | 0.3928 | 2.8100e-003 | | 0.0355 | 0.0355 | | 0.0355 | 0.0355 | | 561.1436 | 561.1436 | 0.0108 | 0.0103 | 564.4782 |
| Quality Restaurant | 5.05775 | 0.0545 | 0.4959 | 0.4165 | 2.9800e-003 | | 0.0377 | 0.0377 | | 0.0377 | 0.0377 | | 595.0298 | 595.0298 | 0.0114 | 0.0109 | 598.5658 |
| Regional Shopping Center | 0.251616 | 2.7100e-003 | 0.0247 | 0.0207 | 1.5000e-004 | | 1.8700e-003 | 1.8700e-003 | | 1.8700e-003 | 1.8700e-003 | | 29.6019 | 29.6019 | 5.7000e-004 | 5.4000e-004 | 29.7778 |
| **Total** | | **0.7660** | **6.7463** | **4.2573** | **0.0418** | | **0.5292** | **0.5292** | | **0.5292** | **0.5292** | | **8,355.9832** | **8,355.9832** | **0.1602** | **0.1532** | **8,405.6387** |

# 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 30.5020 | 15.0496 | 88.4430 | 0.0944 | | 1.5974 | 1.5974 | | 1.5974 | 1.5974 | 0.0000 | 18,148.5950 | 18,148.5950 | 0.4874 | 0.3300 | 18,259.1192 |
| Unmitigated | 30.5020 | 15.0496 | 88.4430 | 0.0944 | | 1.5974 | 1.5974 | | 1.5974 | 1.5974 | 0.0000 | 18,148.5950 | 18,148.5950 | 0.4874 | 0.3300 | 18,259.1192 |

## 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 | 2.2670 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 24.1085 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 1.6500 | 14.1000 | 6.0000 | 0.0900 | | 1.1400 | 1.1400 | | 1.1400 | 1.1400 | 0.0000 | 18,000.0000 | 18,000.0000 | 0.3450 | 0.3300 | 18,106.9650 |
| Landscaping | 2.4766 | 0.9496 | 82.4430 | 4.3600e-003 | | 0.4574 | 0.4574 | | 0.4574 | 0.4574 | | 148.5950 | 148.5950 | 0.1424 | | 152.1542 |
| **Total** | **30.5020** | **15.0496** | **88.4430** | **0.0944** | | **1.5974** | **1.5974** | | **1.5974** | **1.5974** | **0.0000** | **18,148.5950** | **18,148.5950** | **0.4874** | **0.3300** | **18,259.1192** |

### 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 | 2.2670 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 24.1085 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 1.6500 | 14.1000 | 6.0000 | 0.0900 | | 1.1400 | 1.1400 | | 1.1400 | 1.1400 | 0.0000 | 18,000.0000 | 18,000.0000 | 0.3450 | 0.3300 | 18,106.9650 |
| Landscaping | 2.4766 | 0.9496 | 82.4430 | 4.3600e-003 | | 0.4574 | 0.4574 | | 0.4574 | 0.4574 | | 148.5950 | 148.5950 | 0.1424 | | 152.1542 |
| **Total** | **30.5020** | **15.0496** | **88.4430** | **0.0944** | | **1.5974** | **1.5974** | | **1.5974** | **1.5974** | **0.0000** | **18,148.5950** | **18,148.5950** | **0.4874** | **0.3300** | **18,259.1192** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 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

# Village South Specific Plan (Proposed)

**Los Angeles-South Coast County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Office Building | 45.00 | 1000sqft | 1.03 | 45,000.00 | 0 |
| High Turnover (Sit Down Restaurant) | 36.00 | 1000sqft | 0.83 | 36,000.00 | 0 |
| Hotel | 50.00 | Room | 1.67 | 72,600.00 | 0 |
| Quality Restaurant | 8.00 | 1000sqft | 0.18 | 8,000.00 | 0 |
| Apartments Low Rise | 25.00 | Dwelling Unit | 1.56 | 25,000.00 | 72 |
| Apartments Mid Rise | 975.00 | Dwelling Unit | 25.66 | 975,000.00 | 2789 |
| Regional Shopping Center | 56.00 | 1000sqft | 1.29 | 56,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 33 |
| **Climate Zone** | 9 | | | **Operational Year** | 2028 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 702.44 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Winter

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment regarding residential and retail land uses.

Construction Phase - See SWAPE comment regarding individual construction phase lengths.

Demolition - Consistent with the DEIR's model. See SWAPE comment regarding demolition.

Vehicle Trips - Saturday trips consistent with the DEIR's model. See SWAPE comment regarding weekday and Sunday trips.

Woodstoves - Woodstoves and wood-burning fireplaces consistent with the DEIR's model. See SWAPE comment regarding gas fireplaces.

Energy Use -

Construction Off-road Equipment Mitigation - See SWAPE comment on construction-related mitigation.

Area Mitigation - See SWAPE comment regarding operational mitigation measures.

Water Mitigation - See SWAPE comment regarding operational mitigation measures.

Trips and VMT - Local hire provision

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblFireplaces | FireplaceWoodMass | 1,019.20 | 0.00 |
| tblFireplaces | FireplaceWoodMass | 1,019.20 | 0.00 |
| tblFireplaces | NumberWood | 1.25 | 0.00 |
| tblFireplaces | NumberWood | 48.75 | 0.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 10.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 10.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 10.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 10.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 10.00 |
| tblTripsAndVMT | WorkerTripLength | 14.70 | 10.00 |
| tblVehicleTrips | ST_TR | 7.16 | 6.17 |
| tblVehicleTrips | ST_TR | 6.39 | 3.87 |
| tblVehicleTrips | ST_TR | 2.46 | 1.39 |
| tblVehicleTrips | ST_TR | 158.37 | 79.82 |

| | | | |
|---|---|---|---|
| tblVehicleTrips | ST_TR | 8.19 | 3.75 |
| tblVehicleTrips | ST_TR | 94.36 | 63.99 |
| tblVehicleTrips | ST_TR | 49.97 | 10.74 |
| tblVehicleTrips | SU_TR | 6.07 | 6.16 |
| tblVehicleTrips | SU_TR | 5.86 | 4.18 |
| tblVehicleTrips | SU_TR | 1.05 | 0.69 |
| tblVehicleTrips | SU_TR | 131.84 | 78.27 |
| tblVehicleTrips | SU_TR | 5.95 | 3.20 |
| tblVehicleTrips | SU_TR | 72.16 | 57.65 |
| tblVehicleTrips | SU_TR | 25.24 | 6.39 |
| tblVehicleTrips | WD_TR | 6.59 | 5.83 |
| tblVehicleTrips | WD_TR | 6.65 | 4.13 |
| tblVehicleTrips | WD_TR | 11.03 | 6.41 |
| tblVehicleTrips | WD_TR | 127.15 | 65.80 |
| tblVehicleTrips | WD_TR | 8.17 | 3.84 |
| tblVehicleTrips | WD_TR | 89.95 | 62.64 |
| tblVehicleTrips | WD_TR | 42.70 | 9.43 |
| tblWoodstoves | NumberCatalytic | 1.25 | 0.00 |
| tblWoodstoves | NumberCatalytic | 48.75 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 1.25 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 48.75 | 0.00 |
| tblWoodstoves | WoodstoveDayYear | 25.00 | 0.00 |
| tblWoodstoves | WoodstoveDayYear | 25.00 | 0.00 |
| tblWoodstoves | WoodstoveWoodMass | 999.60 | 0.00 |
| tblWoodstoves | WoodstoveWoodMass | 999.60 | 0.00 |

## 2.0 Emissions Summary

## 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 | | | | | |
| 2021 | 4.2621 | 46.4460 | 31.4068 | 0.0635 | 18.2032 | 2.0456 | 20.2488 | 9.9670 | 1.8820 | 11.8490 | 0.0000 | 6,154.3377 | 6,154.3377 | 1.9472 | 0.0000 | 6,203.0186 |
| 2022 | 4.7966 | 38.8851 | 39.6338 | 0.1195 | 8.8255 | 1.6361 | 10.4616 | 3.6369 | 1.5052 | 5.1421 | 0.0000 | 12,035.3440 | 12,035.3440 | 1.9482 | 0.0000 | 12,060.6013 |
| 2023 | 4.3939 | 25.8648 | 37.5031 | 0.1162 | 7.0088 | 0.7598 | 7.7685 | 1.8799 | 0.7142 | 2.5940 | 0.0000 | 11,710.4080 | 11,710.4080 | 0.9617 | 0.0000 | 11,734.4497 |
| 2024 | 237.0656 | 9.5503 | 14.9372 | 0.0238 | 1.2171 | 0.4694 | 1.2875 | 0.3229 | 0.4319 | 0.4621 | 0.0000 | 2,307.0517 | 2,307.0517 | 0.7164 | 0.0000 | 2,324.9627 |
| **Maximum** | **237.0656** | **46.4460** | **39.6338** | **0.1195** | **18.2032** | **2.0456** | **20.2488** | **9.9670** | **1.8820** | **11.8490** | **0.0000** | **12,035.3440** | **12,035.3440** | **1.9482** | **0.0000** | **12,060.6013** |

## 2.1 Overall Construction (Maximum Daily Emission)

**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 | | | | | |
| 2021 | 4.2621 | 46.4460 | 31.4068 | 0.0635 | 18.2032 | 2.0456 | 20.2488 | 9.9670 | 1.8820 | 11.8490 | 0.0000 | 6,154.3377 | 6,154.3377 | 1.9472 | 0.0000 | 6,203.0186 |
| 2022 | 4.7966 | 38.8851 | 39.6338 | 0.1195 | 8.8255 | 1.6361 | 10.4616 | 3.6369 | 1.5052 | 5.1421 | 0.0000 | 12,035.3440 | 12,035.3440 | 1.9482 | 0.0000 | 12,060.6013 |
| 2023 | 4.3939 | 25.8648 | 37.5031 | 0.1162 | 7.0088 | 0.7598 | 7.7685 | 1.8799 | 0.7142 | 2.5940 | 0.0000 | 11,710.4080 | 11,710.4080 | 0.9617 | 0.0000 | 11,734.4497 |
| 2024 | 237.0656 | 9.5503 | 14.9372 | 0.0238 | 1.2171 | 0.4694 | 1.2875 | 0.3229 | 0.4319 | 0.4621 | 0.0000 | 2,307.0517 | 2,307.0517 | 0.7164 | 0.0000 | 2,324.9627 |
| **Maximum** | **237.0656** | **46.4460** | **39.6338** | **0.1195** | **18.2032** | **2.0456** | **20.2488** | **9.9670** | **1.8820** | **11.8490** | **0.0000** | **12,035.3440** | **12,035.3440** | **1.9482** | **0.0000** | **12,060.6013** |

| | ROG | NOx | 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** |

## 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 | 30.5020 | 15.0496 | 88.4430 | 0.0944 | | 1.5974 | 1.5974 | | 1.5974 | 1.5974 | 0.0000 | 18,148.5950 | 18,148.5950 | 0.4874 | 0.3300 | 18,259.1192 |
| Energy | 0.7660 | 6.7462 | 4.2573 | 0.0418 | | 0.5292 | 0.5292 | | 0.5292 | 0.5292 | | 8,355.9832 | 8,355.9832 | 0.1602 | 0.1532 | 8,405.6387 |
| Mobile | 9.5233 | 45.9914 | 110.0422 | 0.4681 | 45.9592 | 0.3373 | 46.2965 | 12.2950 | 0.3132 | 12.6083 | | 47,917.8005 | 47,917.8005 | 2.1953 | | 47,972.6839 |
| **Total** | **40.7912** | **67.7872** | **202.7424** | **0.6043** | **45.9592** | **2.4640** | **48.4231** | **12.2950** | **2.4399** | **14.7349** | **0.0000** | **74,422.3787** | **74,422.3787** | **2.8429** | **0.4832** | **74,637.4417** |

### 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 | 30.5020 | 15.0496 | 88.4430 | 0.0944 | | 1.5974 | 1.5974 | | 1.5974 | 1.5974 | 0.0000 | 18,148.5950 | 18,148.5950 | 0.4874 | 0.3300 | 18,259.1192 |
| Energy | 0.7660 | 6.7462 | 4.2573 | 0.0418 | | 0.5292 | 0.5292 | | 0.5292 | 0.5292 | | 8,355.9832 | 8,355.9832 | 0.1602 | 0.1532 | 8,405.6387 |
| Mobile | 9.5233 | 45.9914 | 110.0422 | 0.4681 | 45.9592 | 0.3373 | 46.2965 | 12.2950 | 0.3132 | 12.6083 | | 47,917.8005 | 47,917.8005 | 2.1953 | | 47,972.6839 |
| **Total** | **40.7912** | **67.7872** | **202.7424** | **0.6043** | **45.9592** | **2.4640** | **48.4231** | **12.2950** | **2.4399** | **14.7349** | **0.0000** | **74,422.3787** | **74,422.3787** | **2.8429** | **0.4832** | **74,637.4417** |

| | ROG | NOx | 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 | 9/1/2021 | 10/12/2021 | 5 | 30 | |
| 2 | Site Preparation | Site Preparation | 10/13/2021 | 11/9/2021 | 5 | 20 | |
| 3 | Grading | Grading | 11/10/2021 | 1/11/2022 | 5 | 45 | |
| 4 | Building Construction | Building Construction | 1/12/2022 | 12/12/2023 | 5 | 500 | |
| 5 | Paving | Paving | 12/13/2023 | 1/30/2024 | 5 | 35 | |
| 6 | Architectural Coating | Architectural Coating | 1/31/2024 | 3/19/2024 | 5 | 35 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 112.5**

**Acres of Paving: 0**

**Residential Indoor: 2,025,000; Residential Outdoor: 675,000; Non-Residential Indoor: 326,400; Non-Residential Outdoor: 108,800; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Winter

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**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 | 15.00 | 0.00 | 458.00 | 10.00 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.00 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.00 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 801.00 | 143.00 | 0.00 | 10.00 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.00 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 160.00 | 0.00 | 0.00 | 10.00 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2021

**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 | | | | | 3.3074 | 0.0000 | 3.3074 | 0.5008 | 0.0000 | 0.5008 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1651 | 31.4407 | 21.5650 | 0.0388 | | 1.5513 | 1.5513 | | 1.4411 | 1.4411 | | 3,747.9449 | 3,747.9449 | 1.0549 | | 3,774.3174 |
| **Total** | **3.1651** | **31.4407** | **21.5650** | **0.0388** | **3.3074** | **1.5513** | **4.8588** | **0.5008** | **1.4411** | **1.9419** | | **3,747.9449** | **3,747.9449** | **1.0549** | | **3,774.3174** |

## 3.2 Demolition - 2021

### 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 | 0.1304 | 4.1454 | 1.0182 | 0.0117 | 0.2669 | 0.0128 | 0.2797 | 0.0732 | 0.0122 | 0.0854 | | 1,269.8555 | 1,269.8555 | 0.0908 | | 1,272.1252 |
| 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 |
| Worker | 0.0532 | 0.0346 | 0.3963 | 1.1100e-003 | 0.1141 | 9.5000e-004 | 0.1151 | 0.0303 | 8.8000e-004 | 0.0311 | | 110.4707 | 110.4707 | 3.3300e-003 | | 110.5539 |
| **Total** | **0.1835** | **4.1800** | **1.4144** | **0.0128** | **0.3810** | **0.0137** | **0.3948** | **0.1034** | **0.0131** | **0.1165** | | **1,380.3262** | **1,380.3262** | **0.0941** | | **1,382.6791** |

### 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 | | | | | 3.3074 | 0.0000 | 3.3074 | 0.5008 | 0.0000 | 0.5008 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1651 | 31.4407 | 21.5650 | 0.0388 | | 1.5513 | 1.5513 | | 1.4411 | 1.4411 | 0.0000 | 3,747.9449 | 3,747.9449 | 1.0549 | | 3,774.3174 |
| **Total** | **3.1651** | **31.4407** | **21.5650** | **0.0388** | **3.3074** | **1.5513** | **4.8588** | **0.5008** | **1.4411** | **1.9419** | **0.0000** | **3,747.9449** | **3,747.9449** | **1.0549** | | **3,774.3174** |

## 3.2 Demolition - 2021

**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 | 0.1304 | 4.1454 | 1.0182 | 0.0117 | 0.2669 | 0.0128 | 0.2797 | 0.0732 | 0.0122 | 0.0854 | | 1,269.8555 | 1,269.8555 | 0.0908 | | 1,272.1252 |
| 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 |
| Worker | 0.0532 | 0.0346 | 0.3963 | 1.1100e-003 | 0.1141 | 9.5000e-004 | 0.1151 | 0.0303 | 8.8000e-004 | 0.0311 | | 110.4707 | 110.4707 | 3.3300e-003 | | 110.5539 |
| **Total** | **0.1835** | **4.1800** | **1.4144** | **0.0128** | **0.3810** | **0.0137** | **0.3948** | **0.1034** | **0.0131** | **0.1165** | | **1,380.3262** | **1,380.3262** | **0.0941** | | **1,382.6791** |

## 3.3 Site Preparation - 2021

**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 | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.8882 | 40.4971 | 21.1543 | 0.0380 | | 2.0445 | 2.0445 | | 1.8809 | 1.8809 | | 3,685.6569 | 3,685.6569 | 1.1920 | | 3,715.4573 |
| **Total** | **3.8882** | **40.4971** | **21.1543** | **0.0380** | **18.0663** | **2.0445** | **20.1107** | **9.9307** | **1.8809** | **11.8116** | | **3,685.6569** | **3,685.6569** | **1.1920** | | **3,715.4573** |

## 3.3 Site Preparation - 2021

### 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 |
| 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 |
| Worker | 0.0638 | 0.0415 | 0.4755 | 1.3300e-003 | 0.1369 | 1.1400e-003 | 0.1381 | 0.0363 | 1.0500e-003 | 0.0374 | | 132.5649 | 132.5649 | 3.9900e-003 | | 132.6646 |
| **Total** | **0.0638** | **0.0415** | **0.4755** | **1.3300e-003** | **0.1369** | **1.1400e-003** | **0.1381** | **0.0363** | **1.0500e-003** | **0.0374** | | **132.5649** | **132.5649** | **3.9900e-003** | | **132.6646** |

### 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 | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.8882 | 40.4971 | 21.1543 | 0.0380 | | 2.0445 | 2.0445 | | 1.8809 | 1.8809 | 0.0000 | 3,685.6569 | 3,685.6569 | 1.1920 | | 3,715.4573 |
| **Total** | **3.8882** | **40.4971** | **21.1543** | **0.0380** | **18.0663** | **2.0445** | **20.1107** | **9.9307** | **1.8809** | **11.8116** | **0.0000** | **3,685.6569** | **3,685.6569** | **1.1920** | | **3,715.4573** |

## 3.3 Site Preparation - 2021

**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 |
| 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 |
| Worker | 0.0638 | 0.0415 | 0.4755 | 1.3300e-003 | 0.1369 | 1.1400e-003 | 0.1381 | 0.0363 | 1.0500e-003 | 0.0374 | | 132.5649 | 132.5649 | 3.9900e-003 | | 132.6646 |
| **Total** | **0.0638** | **0.0415** | **0.4755** | **1.3300e-003** | **0.1369** | **1.1400e-003** | **0.1381** | **0.0363** | **1.0500e-003** | **0.0374** | | **132.5649** | **132.5649** | **3.9900e-003** | | **132.6646** |

## 3.4 Grading - 2021

**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 | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.1912 | 46.3998 | 30.8785 | 0.0620 | | 1.9853 | 1.9853 | | 1.8265 | 1.8265 | | 6,007.0434 | 6,007.0434 | 1.9428 | | 6,055.6134 |
| **Total** | **4.1912** | **46.3998** | **30.8785** | **0.0620** | **8.6733** | **1.9853** | **10.6587** | **3.5965** | **1.8265** | **5.4230** | | **6,007.0434** | **6,007.0434** | **1.9428** | | **6,055.6134** |

## 3.4 Grading - 2021

### 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 |
| 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 |
| Worker | 0.0709 | 0.0462 | 0.5284 | 1.4800e-003 | 0.1521 | 1.2700e-003 | 0.1534 | 0.0404 | 1.1700e-003 | 0.0415 | | 147.2943 | 147.2943 | 4.4300e-003 | | 147.4051 |
| **Total** | **0.0709** | **0.0462** | **0.5284** | **1.4800e-003** | **0.1521** | **1.2700e-003** | **0.1534** | **0.0404** | **1.1700e-003** | **0.0415** | | **147.2943** | **147.2943** | **4.4300e-003** | | **147.4051** |

### 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 | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.1912 | 46.3998 | 30.8785 | 0.0620 | | 1.9853 | 1.9853 | | 1.8265 | 1.8265 | 0.0000 | 6,007.0434 | 6,007.0434 | 1.9428 | | 6,055.6134 |
| **Total** | **4.1912** | **46.3998** | **30.8785** | **0.0620** | **8.6733** | **1.9853** | **10.6587** | **3.5965** | **1.8265** | **5.4230** | **0.0000** | **6,007.0434** | **6,007.0434** | **1.9428** | | **6,055.6134** |

## 3.4 Grading - 2021

**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 |
| 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 |
| Worker | 0.0709 | 0.0462 | 0.5284 | 1.4800e-003 | 0.1521 | 1.2700e-003 | 0.1534 | 0.0404 | 1.1700e-003 | 0.0415 | | 147.2943 | 147.2943 | 4.4300e-003 | | 147.4051 |
| **Total** | **0.0709** | **0.0462** | **0.5284** | **1.4800e-003** | **0.1521** | **1.2700e-003** | **0.1534** | **0.0404** | **1.1700e-003** | **0.0415** | | **147.2943** | **147.2943** | **4.4300e-003** | | **147.4051** |

## 3.4 Grading - 2022

**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 | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **8.6733** | **1.6349** | **10.3082** | **3.5965** | **1.5041** | **5.1006** | | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

## 3.4 Grading - 2022

### 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 |
| 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 |
| Worker | 0.0665 | 0.0416 | 0.4861 | 1.4300e-003 | 0.1521 | 1.2300e-003 | 0.1534 | 0.0404 | 1.1300e-003 | 0.0415 | | 142.1207 | 142.1207 | 4.0000e-003 | | 142.2207 |
| **Total** | **0.0665** | **0.0416** | **0.4861** | **1.4300e-003** | **0.1521** | **1.2300e-003** | **0.1534** | **0.0404** | **1.1300e-003** | **0.0415** | | **142.1207** | **142.1207** | **4.0000e-003** | | **142.2207** |

### 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 | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | 0.0000 | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **8.6733** | **1.6349** | **10.3082** | **3.5965** | **1.5041** | **5.1006** | **0.0000** | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

## 3.4 Grading - 2022

**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 |
| 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 |
| Worker | 0.0665 | 0.0416 | 0.4861 | 1.4300e-003 | 0.1521 | 1.2300e-003 | 0.1534 | 0.0404 | 1.1300e-003 | 0.0415 | | 142.1207 | 142.1207 | 4.0000e-003 | | 142.2207 |
| **Total** | **0.0665** | **0.0416** | **0.4861** | **1.4300e-003** | **0.1521** | **1.2300e-003** | **0.1534** | **0.0404** | **1.1300e-003** | **0.0415** | | **142.1207** | **142.1207** | **4.0000e-003** | | **142.2207** |

## 3.5 Building Construction - 2022

**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 | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

## 3.5 Building Construction - 2022

### 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 |
| Vendor | 0.4284 | 13.1673 | 3.8005 | 0.0354 | 0.9155 | 0.0256 | 0.9412 | 0.2636 | 0.0245 | 0.2881 | | 3,789.0750 | 3,789.0750 | 0.2381 | | 3,795.0283 |
| Worker | 2.6620 | 1.6677 | 19.4699 | 0.0571 | 6.0932 | 0.0493 | 6.1425 | 1.6163 | 0.0454 | 1.6617 | | 5,691.9354 | 5,691.9354 | 0.1602 | | 5,695.9408 |
| **Total** | **3.0904** | **14.8350** | **23.2704** | **0.0926** | **7.0087** | **0.0749** | **7.0836** | **1.8799** | **0.0699** | **1.9498** | | **9,481.0104** | **9,481.0104** | **0.3984** | | **9,490.9691** |

### 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 | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | 0.0000 | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | **0.0000** | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

## 3.5 Building Construction - 2022

**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 |
| Vendor | 0.4284 | 13.1673 | 3.8005 | 0.0354 | 0.9155 | 0.0256 | 0.9412 | 0.2636 | 0.0245 | 0.2881 | | 3,789.0750 | 3,789.0750 | 0.2381 | | 3,795.0283 |
| Worker | 2.6620 | 1.6677 | 19.4699 | 0.0571 | 6.0932 | 0.0493 | 6.1425 | 1.6163 | 0.0454 | 1.6617 | | 5,691.9354 | 5,691.9354 | 0.1602 | | 5,695.9408 |
| **Total** | **3.0904** | **14.8350** | **23.2704** | **0.0926** | **7.0087** | **0.0749** | **7.0836** | **1.8799** | **0.0699** | **1.9498** | | **9,481.0104** | **9,481.0104** | **0.3984** | | **9,490.9691** |

## 3.5 Building Construction - 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 | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

## 3.5 Building Construction - 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 |
| Vendor | 0.3183 | 9.9726 | 3.3771 | 0.0343 | 0.9156 | 0.0122 | 0.9277 | 0.2636 | 0.0116 | 0.2752 | | 3,671.4007 | 3,671.4007 | 0.2096 | | 3,676.6417 |
| Worker | 2.5029 | 1.5073 | 17.8820 | 0.0550 | 6.0932 | 0.0479 | 6.1411 | 1.6163 | 0.0441 | 1.6604 | | 5,483.7974 | 5,483.7974 | 0.1442 | | 5,487.4020 |
| **Total** | **2.8211** | **11.4799** | **21.2591** | **0.0893** | **7.0088** | **0.0601** | **7.0688** | **1.8799** | **0.0557** | **1.9356** | | **9,155.1981** | **9,155.1981** | **0.3538** | | **9,164.0437** |

### 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 | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | 0.0000 | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | **0.0000** | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

## 3.5 Building Construction - 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 |
| Vendor | 0.3183 | 9.9726 | 3.3771 | 0.0343 | 0.9156 | 0.0122 | 0.9277 | 0.2636 | 0.0116 | 0.2752 | | 3,671.4007 | 3,671.4007 | 0.2096 | | 3,676.6417 |
| Worker | 2.5029 | 1.5073 | 17.8820 | 0.0550 | 6.0932 | 0.0479 | 6.1411 | 1.6163 | 0.0441 | 1.6604 | | 5,483.7974 | 5,483.7974 | 0.1442 | | 5,487.4020 |
| **Total** | **2.8211** | **11.4799** | **21.2591** | **0.0893** | **7.0088** | **0.0601** | **7.0688** | **1.8799** | **0.0557** | **1.9356** | | **9,155.1981** | **9,155.1981** | **0.3538** | | **9,164.0437** |

## 3.6 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

## 3.6 Paving - 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 |
| 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 |
| Worker | 0.0469 | 0.0282 | 0.3349 | 1.0300e-003 | 0.1141 | 9.0000e-004 | 0.1150 | 0.0303 | 8.3000e-004 | 0.0311 | | 102.6928 | 102.6928 | 2.7000e-003 | | 102.7603 |
| **Total** | **0.0469** | **0.0282** | **0.3349** | **1.0300e-003** | **0.1141** | **9.0000e-004** | **0.1150** | **0.0303** | **8.3000e-004** | **0.0311** | | **102.6928** | **102.6928** | **2.7000e-003** | | **102.7603** |

### 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 | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | 0.0000 | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | **0.0000** | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

## 3.6 Paving - 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 |
| 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 |
| Worker | 0.0469 | 0.0282 | 0.3349 | 1.0300e-003 | 0.1141 | 9.0000e-004 | 0.1150 | 0.0303 | 8.3000e-004 | 0.0311 | | 102.6928 | 102.6928 | 2.7000e-003 | | 102.7603 |
| **Total** | **0.0469** | **0.0282** | **0.3349** | **1.0300e-003** | **0.1141** | **9.0000e-004** | **0.1150** | **0.0303** | **8.3000e-004** | **0.0311** | | **102.6928** | **102.6928** | **2.7000e-003** | | **102.7603** |

## 3.6 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9882 | 9.5246 | 14.6258 | 0.0228 | | 0.4685 | 0.4685 | | 0.4310 | 0.4310 | | 2,207.5472 | 2,207.5472 | 0.7140 | | 2,225.3963 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.9882** | **9.5246** | **14.6258** | **0.0228** | | **0.4685** | **0.4685** | | **0.4310** | **0.4310** | | **2,207.5472** | **2,207.5472** | **0.7140** | | **2,225.3963** |

## 3.6 Paving - 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 |
| 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 |
| Worker | 0.0444 | 0.0257 | 0.3114 | 1.0000e-003 | 0.1141 | 8.8000e-004 | 0.1150 | 0.0303 | 8.1000e-004 | 0.0311 | | 99.5045 | 99.5045 | 2.4700e-003 | | 99.5663 |
| **Total** | **0.0444** | **0.0257** | **0.3114** | **1.0000e-003** | **0.1141** | **8.8000e-004** | **0.1150** | **0.0303** | **8.1000e-004** | **0.0311** | | **99.5045** | **99.5045** | **2.4700e-003** | | **99.5663** |

### 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 | | | | | |
| Off-Road | 0.9882 | 9.5246 | 14.6258 | 0.0228 | | 0.4685 | 0.4685 | | 0.4310 | 0.4310 | 0.0000 | 2,207.5472 | 2,207.5472 | 0.7140 | | 2,225.3963 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.9882** | **9.5246** | **14.6258** | **0.0228** | | **0.4685** | **0.4685** | | **0.4310** | **0.4310** | **0.0000** | **2,207.5472** | **2,207.5472** | **0.7140** | | **2,225.3963** |

## 3.6 Paving - 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 |
| 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 |
| Worker | 0.0444 | 0.0257 | 0.3114 | 1.0000e-003 | 0.1141 | 8.8000e-004 | 0.1150 | 0.0303 | 8.1000e-004 | 0.0311 | | 99.5045 | 99.5045 | 2.4700e-003 | | 99.5663 |
| **Total** | **0.0444** | **0.0257** | **0.3114** | **1.0000e-003** | **0.1141** | **8.8000e-004** | **0.1150** | **0.0303** | **8.1000e-004** | **0.0311** | | **99.5045** | **99.5045** | **2.4700e-003** | | **99.5663** |

## 3.7 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 236.4115 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **236.5923** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

## 3.7 Architectural Coating - 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 |
| 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 |
| Worker | 0.4734 | 0.2743 | 3.3220 | 0.0107 | 1.2171 | 9.4300e-003 | 1.2266 | 0.3229 | 8.6800e-003 | 0.3315 | | 1,061.3818 | 1,061.3818 | 0.0264 | | 1,062.0410 |
| **Total** | **0.4734** | **0.2743** | **3.3220** | **0.0107** | **1.2171** | **9.4300e-003** | **1.2266** | **0.3229** | **8.6800e-003** | **0.3315** | | **1,061.3818** | **1,061.3818** | **0.0264** | | **1,062.0410** |

### 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 | 236.4115 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | 0.0000 | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **236.5923** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | **0.0000** | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

### 3.7 Architectural Coating - 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 |
| 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 |
| Worker | 0.4734 | 0.2743 | 3.3220 | 0.0107 | 1.2171 | 9.4300e-003 | 1.2266 | 0.3229 | 8.6800e-003 | 0.3315 | | 1,061.3818 | 1,061.3818 | 0.0264 | | 1,062.0410 |
| **Total** | **0.4734** | **0.2743** | **3.3220** | **0.0107** | **1.2171** | **9.4300e-003** | **1.2266** | **0.3229** | **8.6800e-003** | **0.3315** | | **1,061.3818** | **1,061.3818** | **0.0264** | | **1,062.0410** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 9.5233 | 45.9914 | 110.0422 | 0.4681 | 45.9592 | 0.3373 | 46.2965 | 12.2950 | 0.3132 | 12.6083 | | 47,917.8005 | 47,917.8005 | 2.1953 | | 47,972.6839 |
| Unmitigated | 9.5233 | 45.9914 | 110.0422 | 0.4681 | 45.9592 | 0.3373 | 46.2965 | 12.2950 | 0.3132 | 12.6083 | | 47,917.8005 | 47,917.8005 | 2.1953 | | 47,972.6839 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 145.75 | 154.25 | 154.00 | 506,227 | 506,227 |
| Apartments Mid Rise | 4,026.75 | 3,773.25 | 4075.50 | 13,660,065 | 13,660,065 |
| General Office Building | 288.45 | 62.55 | 31.05 | 706,812 | 706,812 |
| High Turnover (Sit Down Restaurant) | 2,368.80 | 2,873.52 | 2817.72 | 3,413,937 | 3,413,937 |
| Hotel | 192.00 | 187.50 | 160.00 | 445,703 | 445,703 |
| Quality Restaurant | 501.12 | 511.92 | 461.20 | 707,488 | 707,488 |
| Regional Shopping Center | 528.08 | 601.44 | 357.84 | 1,112,221 | 1,112,221 |
| Total | 8,050.95 | 8,164.43 | 8,057.31 | 20,552,452 | 20,552,452 |

## 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 Low Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| Apartments Mid Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| General Office Building | 16.60 | 8.40 | 6.90 | 33.00 | 48.00 | 19.00 | 77 | 19 | 4 |
| High Turnover (Sit Down | 16.60 | 8.40 | 6.90 | 8.50 | 72.50 | 19.00 | 37 | 20 | 43 |
| Hotel | 16.60 | 8.40 | 6.90 | 19.40 | 61.60 | 19.00 | 58 | 38 | 4 |
| Quality Restaurant | 16.60 | 8.40 | 6.90 | 12.00 | 69.00 | 19.00 | 38 | 18 | 44 |
| Regional Shopping Center | 16.60 | 8.40 | 6.90 | 16.30 | 64.70 | 19.00 | 54 | 35 | 11 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Low Rise | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Apartments Mid Rise | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| General Office Building | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| High Turnover (Sit Down Restaurant) | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Hotel | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Quality Restaurant | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |
| Regional Shopping Center | 0.543088 | 0.044216 | 0.209971 | 0.116369 | 0.014033 | 0.006332 | 0.021166 | 0.033577 | 0.002613 | 0.001817 | 0.005285 | 0.000712 | 0.000821 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Winter

| | ROG | NOx | CO | SO2 | Fugitive 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 | 0.7660 | 6.7462 | 4.2573 | 0.0418 | | 0.5292 | 0.5292 | | 0.5292 | 0.5292 | | 8,355.9832 | 8,355.9832 | 0.1602 | 0.1532 | 8,405.6387 |
| NaturalGas Unmitigated | 0.7660 | 6.7462 | 4.2573 | 0.0418 | | 0.5292 | 0.5292 | | 0.5292 | 0.5292 | | 8,355.9832 | 8,355.9832 | 0.1602 | 0.1532 | 8,405.6387 |

## 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 Low Rise | 1119.16 | 0.0121 | 0.1031 | 0.0439 | 6.6000e-004 | | 8.3400e-003 | 8.3400e-003 | | 8.3400e-003 | 8.3400e-003 | | 131.6662 | 131.6662 | 2.5200e-003 | 2.4100e-003 | 132.4486 |
| Apartments Mid Rise | 35784.3 | 0.3859 | 3.2978 | 1.4033 | 0.0211 | | 0.2666 | 0.2666 | | 0.2666 | 0.2666 | | 4,209.9164 | 4,209.9164 | 0.0807 | 0.0772 | 4,234.9339 |
| General Office Building | 1283.42 | 0.0138 | 0.1258 | 0.1057 | 7.5000e-004 | | 9.5600e-003 | 9.5600e-003 | | 9.5600e-003 | 9.5600e-003 | | 150.9911 | 150.9911 | 2.8900e-003 | 2.7700e-003 | 151.8884 |
| High Turnover (Sit Down Restaurant) | 22759.9 | 0.2455 | 2.2314 | 1.8743 | 0.0134 | | 0.1696 | 0.1696 | | 0.1696 | 0.1696 | | 2,677.6342 | 2,677.6342 | 0.0513 | 0.0491 | 2,693.5460 |
| Hotel | 4769.72 | 0.0514 | 0.4676 | 0.3928 | 2.8100e-003 | | 0.0355 | 0.0355 | | 0.0355 | 0.0355 | | 561.1436 | 561.1436 | 0.0108 | 0.0103 | 564.4782 |
| Quality Restaurant | 5057.75 | 0.0545 | 0.4959 | 0.4165 | 2.9800e-003 | | 0.0377 | 0.0377 | | 0.0377 | 0.0377 | | 595.0298 | 595.0298 | 0.0114 | 0.0109 | 598.5658 |
| Regional Shopping Center | 251.616 | 2.7100e-003 | 0.0247 | 0.0207 | 1.5000e-004 | | 1.8700e-003 | 1.8700e-003 | | 1.8700e-003 | 1.8700e-003 | | 29.6019 | 29.6019 | 5.7000e-004 | 5.4000e-004 | 29.7778 |
| **Total** | | **0.7660** | **6.7463** | **4.2573** | **0.0418** | | **0.5292** | **0.5292** | | **0.5292** | **0.5292** | | **8,355.9832** | **8,355.9832** | **0.1602** | **0.1532** | **8,405.6387** |

## 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 Low Rise | 1.11916 | 0.0121 | 0.1031 | 0.0439 | 6.6000e-004 | | 8.3400e-003 | 8.3400e-003 | | 8.3400e-003 | 8.3400e-003 | | 131.6662 | 131.6662 | 2.5200e-003 | 2.4100e-003 | 132.4486 |
| Apartments Mid Rise | 35.7843 | 0.3859 | 3.2978 | 1.4033 | 0.0211 | | 0.2666 | 0.2666 | | 0.2666 | 0.2666 | | 4,209.9164 | 4,209.9164 | 0.0807 | 0.0772 | 4,234.9339 |
| General Office Building | 1.28342 | 0.0138 | 0.1258 | 0.1057 | 7.5000e-004 | | 9.5600e-003 | 9.5600e-003 | | 9.5600e-003 | 9.5600e-003 | | 150.9911 | 150.9911 | 2.8900e-003 | 2.7700e-003 | 151.8884 |
| High Turnover (Sit Down Restaurant) | 22.7599 | 0.2455 | 2.2314 | 1.8743 | 0.0134 | | 0.1696 | 0.1696 | | 0.1696 | 0.1696 | | 2,677.6342 | 2,677.6342 | 0.0513 | 0.0491 | 2,693.5460 |
| Hotel | 4.76972 | 0.0514 | 0.4676 | 0.3928 | 2.8100e-003 | | 0.0355 | 0.0355 | | 0.0355 | 0.0355 | | 561.1436 | 561.1436 | 0.0108 | 0.0103 | 564.4782 |
| Quality Restaurant | 5.05775 | 0.0545 | 0.4959 | 0.4165 | 2.9800e-003 | | 0.0377 | 0.0377 | | 0.0377 | 0.0377 | | 595.0298 | 595.0298 | 0.0114 | 0.0109 | 598.5658 |
| Regional Shopping Center | 0.251616 | 2.7100e-003 | 0.0247 | 0.0207 | 1.5000e-004 | | 1.8700e-003 | 1.8700e-003 | | 1.8700e-003 | 1.8700e-003 | | 29.6019 | 29.6019 | 5.7000e-004 | 5.4000e-004 | 29.7778 |
| **Total** | | **0.7660** | **6.7463** | **4.2573** | **0.0418** | | **0.5292** | **0.5292** | | **0.5292** | **0.5292** | | **8,355.9832** | **8,355.9832** | **0.1602** | **0.1532** | **8,405.6387** |

# 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 30.5020 | 15.0496 | 88.4430 | 0.0944 | | 1.5974 | 1.5974 | | 1.5974 | 1.5974 | 0.0000 | 18,148.5950 | 18,148.5950 | 0.4874 | 0.3300 | 18,259.1192 |
| Unmitigated | 30.5020 | 15.0496 | 88.4430 | 0.0944 | | 1.5974 | 1.5974 | | 1.5974 | 1.5974 | 0.0000 | 18,148.5950 | 18,148.5950 | 0.4874 | 0.3300 | 18,259.1192 |

## 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 | 2.2670 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 24.1085 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 1.6500 | 14.1000 | 6.0000 | 0.0900 | | 1.1400 | 1.1400 | | 1.1400 | 1.1400 | 0.0000 | 18,000.0000 | 18,000.0000 | 0.3450 | 0.3300 | 18,106.9650 |
| Landscaping | 2.4766 | 0.9496 | 82.4430 | 4.3600e-003 | | 0.4574 | 0.4574 | | 0.4574 | 0.4574 | | 148.5950 | 148.5950 | 0.1424 | | 152.1542 |
| **Total** | **30.5020** | **15.0496** | **88.4430** | **0.0944** | | **1.5974** | **1.5974** | | **1.5974** | **1.5974** | **0.0000** | **18,148.5950** | **18,148.5950** | **0.4874** | **0.3300** | **18,259.1192** |

### 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 | 2.2670 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 24.1085 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 1.6500 | 14.1000 | 6.0000 | 0.0900 | | 1.1400 | 1.1400 | | 1.1400 | 1.1400 | 0.0000 | 18,000.0000 | 18,000.0000 | 0.3450 | 0.3300 | 18,106.9650 |
| Landscaping | 2.4766 | 0.9496 | 82.4430 | 4.3600e-003 | | 0.4574 | 0.4574 | | 0.4574 | 0.4574 | | 148.5950 | 148.5950 | 0.1424 | | 152.1542 |
| **Total** | **30.5020** | **15.0496** | **88.4430** | **0.0944** | | **1.5974** | **1.5974** | | **1.5974** | **1.5974** | **0.0000** | **18,148.5950** | **18,148.5950** | **0.4874** | **0.3300** | **18,259.1192** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 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

Attachment C

| Local Hire Provision Net Change | |
|---|---|
| **Without Local Hire Provision** | |
| Total Construction GHG Emissions (MT CO2e) | 3,623 |
| Amortized (MT CO2e/year) | 120.77 |
| **With Local Hire Provision** | |
| Total Construction GHG Emissions (MT CO2e) | 3,024 |
| Amortized (MT CO2e/year) | 100.80 |
| ***% Decrease in Construction-related GHG Emissions*** | ***17%*** |

**EXHIBIT B**

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

**SOIL WATER AIR PROTECTION ENTERPRISE**
2656 29th Street, Suite 201
Santa Monica, California 90405
Attn: Paul Rosenfeld, Ph.D.
Mobil: (310) 795-2335
Office: (310) 452-5555
Fax: (310) 452-5550
**Email:** prosenfeld@swape.com

# *Paul Rosenfeld, Ph.D.*

**Chemical Fate and Transport & Air Dispersion Modeling**

*Principal Environmental Chemist*

**Risk Assessment & Remediation Specialist**

## Education

Ph.D. Soil Chemistry, University of Washington, 1999. Dissertation on volatile organic compound filtration.

M.S. Environmental Science, U.C. Berkeley, 1995. Thesis on organic waste economics.

B.A. Environmental Studies, U.C. Santa Barbara, 1991. Thesis on wastewater treatment.

## Professional Experience

Dr. Rosenfeld has over 25 years' experience conducting environmental investigations and risk assessments for evaluating impacts to human health, property, and ecological receptors. His expertise focuses on the fate and transport of environmental contaminants, human health risk, exposure assessment, and ecological restoration. Dr. Rosenfeld has evaluated and modeled emissions from unconventional oil drilling operations, oil spills, landfills, boilers and incinerators, process stacks, storage tanks, confined animal feeding operations, and many other industrial and agricultural sources. His project experience ranges from monitoring and modeling of pollution sources to evaluating impacts of pollution on workers at industrial facilities and residents in surrounding communities.

Dr. Rosenfeld has investigated and designed remediation programs and risk assessments for contaminated sites containing lead, heavy metals, mold, bacteria, particulate matter, petroleum hydrocarbons, chlorinated solvents, pesticides, radioactive waste, dioxins and furans, semi- and volatile organic compounds, PCBs, PAHs, perchlorate, asbestos, per- and poly-fluoroalkyl substances (PFOA/PFOS), unusual polymers, fuel oxygenates (MTBE), among other pollutants. Dr. Rosenfeld also has experience evaluating greenhouse gas emissions from various projects and is an expert on the assessment of odors from industrial and agricultural sites, as well as the evaluation of odor nuisance impacts and technologies for abatement of odorous emissions. As a principal scientist at SWAPE, Dr. Rosenfeld directs air dispersion modeling and exposure assessments. He has served as an expert witness and testified about pollution sources causing nuisance and/or personal injury at dozens of sites and has testified as an expert witness on more than ten cases involving exposure to air contaminants from industrial sources.

## Professional History:

Soil Water Air Protection Enterprise (SWAPE); 2003 to present; Principal and Founding Partner
UCLA School of Public Health; 2007 to 2011; Lecturer (Assistant Researcher)
UCLA School of Public Health; 2003 to 2006; Adjunct Professor
UCLA Environmental Science and Engineering Program; 2002-2004; Doctoral Intern Coordinator
UCLA Institute of the Environment, 2001-2002; Research Associate
Komex $H_2O$ Science, 2001 to 2003; Senior Remediation Scientist
National Groundwater Association, 2002-2004; Lecturer
San Diego State University, 1999-2001; Adjunct Professor
Anteon Corp., San Diego, 2000-2001; Remediation Project Manager
Ogden (now Amec), San Diego, 2000-2000; Remediation Project Manager
Bechtel, San Diego, California, 1999 – 2000; Risk Assessor
King County, Seattle, 1996 – 1999; Scientist
James River Corp., Washington, 1995-96; Scientist
Big Creek Lumber, Davenport, California, 1995; Scientist
Plumas Corp., California and USFS, Tahoe 1993-1995; Scientist
Peace Corps and World Wildlife Fund, St. Kitts, West Indies, 1991-1993; Scientist

## Publications:

Remy, L.L., Clay T., Byers, V., **Rosenfeld P. E.** (2019) Hospital, Health, and Community Burden After Oil Refinery Fires, Richmond, California 2007 and 2012. *Environmental Health.* 18:48

Simons, R.A., Seo, Y. **Rosenfeld, P**., (2015) Modeling the Effect of Refinery Emission On Residential Property Value. Journal of Real Estate Research. 27(3):321-342

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**Rosenfeld, P.E.,** J. J. J. Clark, A. R. Hensley, M. Suffet. (2007). The Use of an Odor Wheel Classification for Evaluation of Human Health Risk Criteria for Compost Facilities. *Water Science & Technology* 55(5), 345-357.

**Rosenfeld, P. E.,** M. Suffet. (2007). The Anatomy Of Odour Wheels For Odours Of Drinking Water, Wastewater, Compost And The Urban Environment. *Water Science & Technology* 55(5), 335-344.

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**Rosenfeld, P.E.,** and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash. *Water Science and Technology*. 49(9),171-178.

**Rosenfeld P. E.,** J.J. Clark, I.H. (Mel) Suffet (2004). The Value of An Odor-Quality-Wheel Classification Scheme For The Urban Environment. *Water Environment Federation's Technical Exhibition and Conference (WEFTEC) 2004.* New Orleans, October 2-6, 2004.

**Rosenfeld, P.E.,** and Suffet, I.H. (2004). Understanding Odorants Associated With Compost, Biomass Facilities, and the Land Application of Biosolids. *Water Science and Technology*. 49(9), 193-199.

**Rosenfeld, P.E.,** and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash, *Water Science and Technology*, 49( 9), 171-178.

**Rosenfeld, P. E**., Grey, M. A., Sellew, P. (2004). Measurement of Biosolids Odor and Odorant Emissions from Windrows, Static Pile and Biofilter. *Water Environment Research*. 76(4), 310-315.

**Rosenfeld, P.E.,** Grey, M and Suffet, M. (2002). Compost Demonstration Project, Sacramento California Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Integrated Waste Management Board Public Affairs Office*, Publications Clearinghouse (MS–6), Sacramento, CA Publication #442-02-008.

**Rosenfeld, P.E**., and C.L. Henry. (2001). Characterization of odor emissions from three different biosolids. *Water Soil and Air Pollution*. 127(1-4), 173-191.

**Rosenfeld, P.E.,** and Henry C. L., (2000). Wood ash control of odor emissions from biosolids application. *Journal of Environmental Quality.* 29, 1662-1668.

**Rosenfeld, P.E.,** C.L. Henry and D. Bennett. (2001). Wastewater dewatering polymer affect on biosolids odor emissions and microbial activity. *Water Environment Research*. 73(4), 363-367.

**Rosenfeld, P.E.,** and C.L. Henry. (2001). Activated Carbon and Wood Ash Sorption of Wastewater, Compost, and Biosolids Odorants. *Water Environment Research*, 73, 388-393.

**Rosenfeld, P.E.,** and Henry C. L., (2001). High carbon wood ash effect on biosolids microbial activity and odor. *Water Environment Research*. 131(1-4), 247-262.

Chollack, T. and **P. Rosenfeld. (**1998). Compost Amendment Handbook For Landscaping. Prepared for and distributed by the City of Redmond, Washington State.

**Rosenfeld, P. E.** (1992). The Mount Liamuiga Crater Trail. *Heritage Magazine of St. Kitts*, 3(2).

**Rosenfeld, P. E.** (1993). High School Biogas Project to Prevent Deforestation On St. Kitts. *Biomass Users Network*, 7(1).

**Rosenfeld, P. E. (**1998). Characterization, Quantification, and Control of Odor Emissions From Biosolids Application To Forest Soil. Doctoral Thesis. University of Washington College of Forest Resources.

**Rosenfeld, P. E.** (1994). Potential Utilization of Small Diameter Trees on Sierra County Public Land. Masters thesis reprinted by the Sierra County Economic Council. Sierra County, California.

**Rosenfeld, P. E. (**1991). How to Build a Small Rural Anaerobic Digester & Uses Of Biogas In The First And Third World. Bachelors Thesis. University of California.

## Presentations:

**Rosenfeld, P.E.,** Sutherland, A; Hesse, R.; Zapata, A. (October 3-6, 2013). Air dispersion modeling of volatile organic emissions from multiple natural gas wells in Decatur, TX. *44th Western Regional Meeting, American Chemical Society.* Lecture conducted from Santa Clara, CA.

Sok, H.L.; Waller, C.C.; Feng, L.; Gonzalez, J.; Sutherland, A.J.; Wisdom-Stack, T.; Sahai, R.K.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Atrazine: A Persistent Pesticide in Urban Drinking Water. *Urban Environmental Pollution*. Lecture conducted from Boston, MA.

Feng, L.; Gonzalez, J.; Sok, H.L.; Sutherland, A.J.; Waller, C.C.; Wisdom-Stack, T.; Sahai, R.K.; La, M.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Bringing Environmental Justice to East St. Louis, Illinois. *Urban Environmental Pollution.* Lecture conducted from Boston, MA.

**Rosenfeld, P.E**. (April 19-23, 2009). Perfluoroctanoic Acid (PFOA) and Perfluoroactane Sulfonate (PFOS) Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*, Lecture conducted from Tuscon, AZ.

**Rosenfeld, P.E.** (April 19-23, 2009). Cost to Filter Atrazine Contamination from Drinking Water in the United States" Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*. Lecture conducted from Tuscon, AZ.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P**. (20-22 July, 2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. Brebbia, C.A. and Popov, V., eds., *Air Pollution XVII: Proceedings of the Seventeenth International Conference on Modeling, Monitoring and Management of Air Pollution*. Lecture conducted from Tallinn, Estonia.

**Rosenfeld, P. E.** (October 15-18, 2007). Moss Point Community Exposure To Contaminants From A Releasing Facility. *The 23rd Annual International Conferences on Soils Sediment and Water.* Platform lecture conducted from University of Massachusetts, Amherst MA.

**Rosenfeld, P. E.** (October 15-18, 2007). The Repeated Trespass of Tritium-Contaminated Water Into A Surrounding Community Form Repeated Waste Spills From A Nuclear Power Plant. *The 23rd Annual International Conferences on Soils Sediment and Water*. Platform lecture conducted from University of Massachusetts, Amherst MA.

**Rosenfeld, P. E.** (October 15-18, 2007). Somerville Community Exposure To Contaminants From Wood Treatment Facility Emissions. The *23rd Annual International Conferences on Soils Sediment and Water*. Lecture conducted from University of Massachusetts, Amherst MA.

**Rosenfeld P. E.** (March 2007). Production, Chemical Properties, Toxicology, & Treatment Case Studies of 1,2,3-Trichloropropane (TCP). *The Association for Environmental Health and Sciences (AEHS) Annual Meeting*. Lecture conducted from San Diego, CA.

**Rosenfeld P. E.** (March 2007). Blood and Attic Sampling for Dioxin/Furan, PAH, and Metal Exposure in Florala, Alabama. *The AEHS Annual Meeting.* Lecture conducted from San Diego, CA.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (August 21 – 25, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *The 26th International Symposium on Halogenated Persistent Organic Pollutants – DIOXIN2006*. Lecture conducted from Radisson SAS Scandinavia Hotel in Oslo Norway.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (November 4-8, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *APHA 134 Annual Meeting & Exposition.* Lecture conducted from Boston Massachusetts.

**Paul Rosenfeld Ph.D**. (October 24-25, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. Mealey's C8/PFOA. *Science, Risk & Litigation Conference.* Lecture conducted from The Rittenhouse Hotel, Philadelphia, PA.

**Paul Rosenfeld Ph.D**. (September 19, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, *Toxicology and Remediation PEMA Emerging Contaminant Conference*. Lecture conducted from Hilton Hotel, Irvine California.

**Paul Rosenfeld Ph.D**. (September 19, 2005). Fate, Transport, Toxicity, And Persistence of 1,2,3-TCP. *PEMA Emerging Contaminant Conference.* Lecture conducted from Hilton Hotel in Irvine, California.

**Paul Rosenfeld Ph.D**. (September 26-27, 2005). Fate, Transport and Persistence of PDBEs. *Mealey's Groundwater Conference.* Lecture conducted from Ritz Carlton Hotel, Marina Del Ray, California.

**Paul Rosenfeld Ph.D**. (June 7-8, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. *International Society of Environmental Forensics: Focus On Emerging Contaminants*. Lecture conducted from Sheraton Oceanfront Hotel, Virginia Beach, Virginia.

**Paul Rosenfeld Ph.D**. (July 21-22, 2005). Fate Transport, Persistence and Toxicology of PFOA and Related Perfluorochemicals. *2005 National Groundwater Association Ground Water And Environmental Law Conference*. Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

**Paul Rosenfeld Ph.D**. (July 21-22, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, Toxicology and Remediation. *2005 National Groundwater Association Ground Water and Environmental Law Conference.* Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

**Paul Rosenfeld, Ph.D.** and James Clark Ph.D. and Rob Hesse R.G. (May 5-6, 2004). Tert-butyl Alcohol Liability and Toxicology, A National Problem and Unquantified Liability. *National Groundwater Association. Environmental Law Conference*. Lecture conducted from Congress Plaza Hotel, Chicago Illinois.

**Paul Rosenfeld, Ph.D.** (March 2004). Perchlorate Toxicology. *Meeting of the American Groundwater Trust*. Lecture conducted from Phoenix Arizona.

Hagemann, M.F., **Paul Rosenfeld, Ph.D.** and Rob Hesse (2004). Perchlorate Contamination of the Colorado River. *Meeting of tribal representatives*. Lecture conducted from Parker, AZ.

**Paul Rosenfeld, Ph.D.** (April 7, 2004). A National Damage Assessment Model For PCE and Dry Cleaners. *Drycleaner Symposium. California Ground Water Association*. Lecture conducted from Radison Hotel, Sacramento, California.

**Rosenfeld, P. E**., Grey, M., (June 2003) Two stage biofilter for biosolids composting odor control. *Seventh International In Situ And On Site Bioremediation Symposium Battelle Conference* Orlando, FL.

**Paul Rosenfeld, Ph.D.** and James Clark Ph.D. (February 20-21, 2003) Understanding Historical Use, Chemical Properties, Toxicity and Regulatory Guidance of 1,4 Dioxane. *National Groundwater Association. Southwest Focus Conference. Water Supply and Emerging Contaminants*.. Lecture conducted from Hyatt Regency Phoenix Arizona.

**Paul Rosenfeld, Ph.D.** (February 6-7, 2003). Underground Storage Tank Litigation and Remediation. *California CUPA Forum*. Lecture conducted from Marriott Hotel, Anaheim California.

**Paul Rosenfeld, Ph.D**. (October 23, 2002) Underground Storage Tank Litigation and Remediation. *EPA Underground Storage Tank Roundtable*. Lecture conducted from Sacramento California.

**Rosenfeld, P.E**. and Suffet, M. (October 7- 10, 2002). Understanding Odor from Compost, *Wastewater and Industrial Processes. Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

**Rosenfeld, P.E**. and Suffet, M. (October 7- 10, 2002). Using High Carbon Wood Ash to Control Compost Odor. *Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

**Rosenfeld, P.E.** and Grey, M. A. (September 22-24, 2002). Biocycle Composting For Coastal Sage Restoration. *Northwest Biosolids Management Association*. Lecture conducted from Vancouver Washington..

**Rosenfeld, P.E**. and Grey, M. A. (November 11-14, 2002). Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Soil Science Society Annual Conferenc*e. Lecture conducted from Indianapolis, Maryland.

**Rosenfeld. P.E.** (September 16, 2000). Two stage biofilter for biosolids composting odor control. *Water Environment Federation.* Lecture conducted from Anaheim California.

**Rosenfeld. P.E. (**October 16, 2000). Wood ash and biofilter control of compost odor. *Biofest.* Lecture conducted from Ocean Shores, California.

**Rosenfeld, P.E. (**2000). Bioremediation Using Organic Soil Amendments. *California Resource Recovery Association*. Lecture conducted from Sacramento California.

**Rosenfeld, P.E**., C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. *Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings*. Lecture conducted from Bellevue Washington.

**Rosenfeld, P.E.**, and C.L. Henry. (1999). An evaluation of ash incorporation with biosolids for odor reduction. *Soil Science Society of America*. Lecture conducted from Salt Lake City Utah.

**Rosenfeld, P.E.**, C.L. Henry, R. Harrison. (1998). Comparison of Microbial Activity and Odor Emissions from Three Different Biosolids Applied to Forest Soil. *Brown and Caldwell.* Lecture conducted from Seattle Washington.

**Rosenfeld, P.E.**, C.L. Henry. (1998). Characterization, Quantification, and Control of Odor Emissions from Biosolids Application To Forest Soil. *Biofest.* Lecture conducted from Lake Chelan, Washington.

**Rosenfeld, P.E,** C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings. Lecture conducted from Bellevue Washington.

**Rosenfeld, P.E.**, C.L. Henry, R. B. Harrison, and R. Dills. (1997). Comparison of Odor Emissions From Three Different Biosolids Applied to Forest Soil. *Soil Science Society of America*. Lecture conducted from Anaheim California.

## Teaching Experience:

UCLA Department of Environmental Health (Summer 2003 through 20010) Taught Environmental Health Science 100 to students, including undergrad, medical doctors, public health professionals and nurses. Course focused on the health effects of environmental contaminants.

National Ground Water Association, Successful Remediation Technologies. Custom Course in Sante Fe, New Mexico. May 21, 2002. Focused on fate and transport of fuel contaminants associated with underground storage tanks.

National Ground Water Association; Successful Remediation Technologies Course in Chicago Illinois. April 1, 2002. Focused on fate and transport of contaminants associated with Superfund and RCRA sites.

California Integrated Waste Management Board, April and May, 2001. Alternative Landfill Caps Seminar in San Diego, Ventura, and San Francisco. Focused on both prescriptive and innovative landfill cover design.

UCLA Department of Environmental Engineering, February 5, 2002. Seminar on Successful Remediation Technologies focusing on Groundwater Remediation.

University Of Washington, Soil Science Program, Teaching Assistant for several courses including: Soil Chemistry, Organic Soil Amendments, and Soil Stability.

U.C. Berkeley, Environmental Science Program Teaching Assistant for Environmental Science 10.

## Academic Grants Awarded:

California Integrated Waste Management Board. $41,000 grant awarded to UCLA Institute of the Environment. Goal: To investigate effect of high carbon wood ash on volatile organic emissions from compost. 2001.

Synagro Technologies, Corona California: $10,000 grant awarded to San Diego State University.
Goal: investigate effect of biosolids for restoration and remediation of degraded coastal sage soils. 2000.

King County, Department of Research and Technology, Washington State. $100,000 grant awarded to University of Washington: Goal: To investigate odor emissions from biosolids application and the effect of polymers and ash on VOC emissions. 1998.

Northwest Biosolids Management Association, Washington State. $20,000 grant awarded to investigate effect of polymers and ash on VOC emissions from biosolids. 1997.

James River Corporation, Oregon: $10,000 grant was awarded to investigate the success of genetically engineered Poplar trees with resistance to round-up. 1996.

United State Forest Service, Tahoe National Forest: $15,000 grant was awarded to investigating fire ecology of the Tahoe National Forest. 1995.

Kellogg Foundation, Washington D.C. $500 grant was awarded to construct a large anaerobic digester on St. Kitts in West Indies. 1993

## Deposition and/or Trial Testimony:

In the United States District Court For The District of New Jersey
Duarte et al, *Plaintiffs,* vs. United States Metals Refining Company et. al. *Defendant.*
Case No.: 2:17-cv-01624-ES-SCM
Rosenfeld Deposition. 6-7-2019

In the United States District Court of Southern District of Texas Galveston Division
M/T Carla Maersk, *Plaintiffs,* vs. Conti 168., Schiffahrts-GMBH & Co. Bulker KG MS "Conti Perdido" *Defendant.*
Case No.: 3:15-CV-00106 consolidated with 3:15-CV-00237
Rosenfeld Deposition. 5-9-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica
Carole-Taddeo-Bates et al., vs. Ifran Khan et al., Defendants
Case No.: No. BC615636
Rosenfeld Deposition, 1-26-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica
The San Gabriel Valley Council of Governments et al. vs El Adobe Apts. Inc. et al., Defendants
Case No.: No. BC646857
Rosenfeld Deposition, 10-6-2018; Trial 3-7-19

In United States District Court For The District of Colorado
Bells et al. Plaintiff vs. The 3M Company et al., Defendants
Case: No 1:16-cv-02531-RBJ
Rosenfeld Deposition, 3-15-2018 and 4-3-2018

In The District Court Of Regan County, Texas, 112th Judicial District
Phillip Bales et al., Plaintiff vs. Dow Agrosciences, LLC, et al., Defendants
Cause No 1923
Rosenfeld Deposition, 11-17-2017

In The Superior Court of the State of California In And For The County Of Contra Costa
Simons et al., Plaintiffs vs. Chevron Corporation, et al., Defendants
Cause No C12-01481
Rosenfeld Deposition, 11-20-2017

In The Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois
Martha Custer et al., Plaintiff vs. Cerro Flow Products, Inc., Defendants
Case No.: No. 0i9-L-2295
Rosenfeld Deposition, 8-23-2017

In The Superior Court of the State of California, For The County of Los Angeles
Warrn Gilbert and Penny Gilber, Plaintiff vs. BMW of North America LLC
Case No.: LC102019 (c/w BC582154)
Rosenfeld Deposition, 8-16-2017, Trail 8-28-2018

In the Northern District Court of Mississippi, Greenville Division
Brenda J. Cooper, et al., *Plaintiffs,* vs. Meritor Inc., et al., *Defendants*
Case Number: 4:16-cv-52-DMB-JVM
Rosenfeld Deposition: July 2017

In The Superior Court of the State of Washington, County of Snohomish
Michael Davis and Julie Davis et al., Plaintiff vs. Cedar Grove Composting Inc., Defendants
Case No.: No. 13-2-03987-5
Rosenfeld Deposition, February 2017
Trial, March 2017

In The Superior Court of the State of California, County of Alameda
Charles Spain., Plaintiff vs. Thermo Fisher Scientific, et al., Defendants
Case No.: RG14711115
Rosenfeld Deposition, September 2015

In The Iowa District Court In And For Poweshiek County
Russell D. Winburn, et al., Plaintiffs vs. Doug Hoksbergen, et al., Defendants
Case No.: LALA002187
Rosenfeld Deposition, August 2015

In The Iowa District Court For Wapello County
Jerry Dovico, et al., Plaintiffs vs. Valley View Sine LLC, et al., Defendants
Law No,: LALA105144 - Division A
Rosenfeld Deposition, August 2015

In The Iowa District Court For Wapello County
Doug Pauls, et al.,, et al., Plaintiffs vs. Richard Warren, et al., Defendants
Law No,: LALA105144 - Division A
Rosenfeld Deposition, August 2015

In The Circuit Court of Ohio County, West Virginia
Robert Andrews, et al. v. Antero, et al.
Civil Action N0. 14-C-30000
Rosenfeld Deposition, June 2015

In The Third Judicial District County of Dona Ana, New Mexico
Betty Gonzalez, et al. Plaintiffs vs. Del Oro Dairy, Del Oro Real Estate LLC, Jerry Settles and Deward DeRuyter, Defendants
Rosenfeld Deposition: July 2015

In The Iowa District Court For Muscatine County
Laurie Freeman et. al. Plaintiffs vs. Grain Processing Corporation, Defendant
Case No 4980
Rosenfeld Deposition: May 2015

In the Circuit Court of the 17th Judicial Circuit, in and For Broward County, Florida
Walter Hinton, et. al. Plaintiff, vs. City of Fort Lauderdale, Florida, a Municipality, Defendant.
Case Number CACE07030358 (26)
Rosenfeld Deposition: December 2014

In the United States District Court Western District of Oklahoma
Tommy McCarty, et al., Plaintiffs, v. Oklahoma City Landfill, LLC d/b/a Southeast Oklahoma City Landfill, et al. Defendants.
Case No. 5:12-cv-01152-C
Rosenfeld Deposition: July 2014

In the County Court of Dallas County Texas
Lisa Parr et al, *Plaintiff*, vs. Aruba et al, *Defendant.*
Case Number cc-11-01650-E
Rosenfeld Deposition: March and September 2013
Rosenfeld Trial: April 2014

In the Court of Common Pleas of Tuscarawas County Ohio
John Michael Abicht, et al., *Plaintiffs,* vs. Republic Services, Inc., et al., *Defendants*
Case Number: 2008 CT 10 0741 (Cons. w/ 2009 CV 10 0987)
Rosenfeld Deposition: October 2012

In the United States District Court of Southern District of Texas Galveston Division
Kyle Cannon, Eugene Donovan, Genaro Ramirez, Carol Sassler, and Harvey Walton, each Individually and on behalf of those similarly situated, *Plaintiffs,* vs. BP Products North America, Inc., *Defendant.*
Case 3:10-cv-00622
Rosenfeld Deposition: February 2012
Rosenfeld Trial: April 2013

In the Circuit Court of Baltimore County Maryland
Philip E. Cvach, II et al., *Plaintiffs* vs. Two Farms, Inc. d/b/a Royal Farms, Defendants
Case Number: 03-C-12-012487 OT
Rosenfeld Deposition: September 2013

# EXHIBIT C

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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## Matthew F. Hagemann, P.G., C.Hg., QSD, QSP

**Geologic and Hydrogeologic Characterization**
**Industrial Stormwater Compliance**
**Investigation and Remediation Strategies**
**Litigation Support and Testifying Expert**
**CEQA Review**

**Education:**

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.
B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

**Professional Certifications:**

California Professional Geologist
California Certified Hydrogeologist
Qualified SWPPP Developer and Practitioner

**Professional Experience:**

Matt has 25 years of experience in environmental policy, assessment and remediation. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) while also working with permit holders to improve hydrogeologic characterization and water quality monitoring.

Matt has worked closely with U.S. EPA legal counsel and the technical staff of several states in the application and enforcement of RCRA, Safe Drinking Water Act and Clean Water Act regulations. Matt has trained the technical staff in the States of California, Hawaii, Nevada, Arizona and the Territory of Guam in the conduct of investigations, groundwater fundamentals, and sampling techniques.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – 2014;
- Senior Environmental Analyst, Komex H2O Science, Inc. (2000 -- 2003);

- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

**Senior Regulatory and Litigation Support Analyst:**

With SWAPE, Matt's responsibilities have included:

- Lead analyst and testifying expert in the review of over 100 environmental impact reports since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, Valley Fever, greenhouse gas emissions, and geologic hazards. Make recommendations for additional mitigation measures to lead agencies at the local and county level to include additional characterization of health risks and implementation of protective measures to reduce worker exposure to hazards from toxins and Valley Fever.
- Stormwater analysis, sampling and best management practice evaluation at industrial facilities.
- Manager of a project to provide technical assistance to a community adjacent to a former Naval shipyard under a grant from the U.S. EPA.
- Technical assistance and litigation support for vapor intrusion concerns.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.
- Expert witness on two cases involving MTBE litigation.
- Expert witness and litigation support on the impact of air toxins and hazards at a school.
- Expert witness in litigation at a former plywood plant.

With Komex H2O Science Inc., Matt's duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.

- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.

- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

**Executive Director:**

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

**Hydrogeology:**

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

**Policy:**

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9. Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

**Geology:**

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

**Teaching:**

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt taught physical geology (lecture and lab and introductory geology at Golden West College in Huntington Beach, California from 2010 to 2014.

**Invited Testimony, Reports, Papers and Presentations:**

**Hagemann, M.F**., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

**Hagemann, M.F**., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

**Hagemann, M.F.,** 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Coloradao.

**Hagemann, M.F.,** 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

**Hagemann, M.F.**, 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

**Hagemann, M.F.,** 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

**Hagemann, M.F.,** 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

**Hagemann, M.F**., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

**Hagemann, M.F**., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal repesentatives, Parker, AZ.

**Hagemann, M.F**., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

**Hagemann, M.F**., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

**Hagemann, M.F**., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

**Hagemann, M.F**., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

**Hagemann, M.F**., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

**Hagemann, M.F**., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

**Hagemann, M.F**., 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

**Hagemann, M.F**., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

**Hagemann, M.F**., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

**Hagemann, M.F**., 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

**Hagemann, M.F**., 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

**Hagemann, M.F**., and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F**. 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

**Hagemann, M.F**., 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

**Hagemann, M.F**., 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

**Hagemann, M.F**., and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

**Hagemann, M.F**., Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

**Hagemann, M. F**., Fukanaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

**Hagemann, M.F**., 1994. Groundwater Characterization and Cleanup at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

**Hagemann, M.**F. and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

**Hagemann, M.F**., 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

**Hagemann, M.F**., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

**Other Experience:**

Selected as subject matter expert for the California Professional Geologist licensing examination, 2009-2011.

**EXHIBIT D**

CITY OF LONG BEACH

**Development Services**
**Planning Bureau**
411 West Ocean Boulevard, 3rd Floor, Long Beach, CA 90802
(562) 570-6194

November 18, 2022

Burnham Development,
Derek Burnham
130 Pine Ave, Suite 200
Long Beach, CA 90802
derek@burnhamdevelopment.com

**Re:** 5150 E Pacific Coast Highway
Application No. 2208-43 (CSPR22-010)

Dear Mr. Burnham,

On Wednesday, October 26, your application for Conceptual Site Plan Review for the above-noted project was reviewed by the Site Plan Review Committee. The project proposes to convert an existing seven story office building to a dormitory with 593 beds. The Site Plan Review Committee expressed the need for additional housing for students and they were generally supportive of the proposed project. This letter serves to officially transmit the comments of the Site Plan Review Committee to you, as well as to provide the statutory information required by Section 21.25.503.C of the Zoning Regulations to conclude the CSPR process for your project.

Comments

- Concerns were raised regarding the changes that will be needed on the exterior of the building to accommodate the change in use. The Committee will review the proposed changes during the next stage in the project.
- AB 2097 applies to this property site which eliminates the requirement for minimum parking requirements for the change in use.
- Based on the plans, it appears that the existing basement encroaches into the Pacific Coast Highway sidewalk. The applicant shall confirm that this is the case. If it does indeed encroach, Public Works has no record of a vacation of area below Pacific Coast Highway to allow for the subterranean encroachment. Provide documentation of this vacation. If one does not exist, the applicant will need to process the subterranean vacation.
- One bike parking space per unit should be provided. Upon the next submittal, provide a clear bike route plan of how tenants are to access the bike kitchen in the basement level. How do tenants get to the bike kitchen from when they enter the site? What is the bike path of travel?
- There are future plans to, at a minimum, put Clark on a road diet and add a bike path between Anaheim and Pacific Coast Highway. There is also the possibility of closing off Clark to through traffic, but still allowing access to the site for tenants. Contact Giselle Terzian, Public Works, [redacted] for more information on this matter.

- There appears to be signage proposed within the right of way at the intersection of Clark and Pacific Coast Highway and potentially Pacific Coast Highway and Anaheim. The applicant shall remove all private signage from the ROW and relocate onto private property.
- A Pre-Development Meeting with Building & Safety is recommended to discuss major issues relating to building and fire code compliance early, so any potential issues can be avoided during the construction documents/plan check stage. Please contact Truong Huynh at ([redacted] or truong.huynh@longbeach.gov to schedule.
- Long Beach Energy Resources currently maintains an active gas service line feeding the existing building on the lot that will need to be upsized/renewed if loads increase due to the conversion. See GIS map (attached) for approximate location of the service.
- If additional new gas service or renewal of existing service is needed for the proposed conversion, Long Beach Energy Resources will need to review and approve the location for the meter and buried service line to be installed. Please consider that the routing of the buried gas service line and clearance requirements for meter may impact the design of the development.
- To further review and coordinate the scope and costs involved with the installation of gas facilities, the developer should contact us as soon as possible by calling (562)570-5991 to initiate an investigation with an assigned LBER inspector. The assigned LBER inspector will be the point of contact and will engage additional resources as required depending on project details.

Statutory Comments

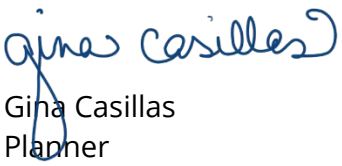
Per Section 21.25.503.C of the Zoning Regulations, conclusion of a Conceptual Site Plan Review shall result in a written report to the applicant indicating the following:

- **Whether site plan review will be done by the Site Plan Review Committee or the Planning Commission:** This project will require several entitlements in addition to the Site Plan Review for the Adaptive Reuse request. The Site Plan Review Committee will act upon the adaptive reuse request and any waivers of development standards that are requested.
- **What other entitlements/applications and/or reviews are necessary for the project as submitted:**
    - Conditional Use Permit for the Special Group Residence use for the dormitory - Planning Commission
    - General Plan LUE Amendment/Map changing Commercial (CC) Placetype to Neighborhood Serving Center (NSC-Moderate) – City Council
    - Zoning Map Change from Commercial (C ) to Mixed Use (MU-3) – City Council
    - Building Permits for the change in use of the building.

Please find the response documents received from other departments regarding your project received to date. I will forward any additional response documents as they are received.

This concludes the Conceptual Site Plan Review process. Please do not hesitate to reach out with any questions you might have.

Sincerely,



Gina Casillas
Planner
([redacted])

Attachments: TAC comments
- Police Department
- Public Works
- Gas Department

# EXHIBIT E

# Meeting Minutes



| | | | |
|---|---|---|---|
| **DATE** | 07/01/2022 | **PROJECT NO.** | 22081 |
| **PROJECT** | 5150 Pacific Coast HWY | **FILE NO.** | 2MM |
| **MEETING DATE** | 06/30/2022 | **ATTENDEES** | City of LB: Truong Hyunh, Philip Yin, Bill Pittman Bret Anderson, Stephen Figueira, Pablo Leon, Giselle Terzian Stacy Cole – Fountain Res., Gary Dominguez – Jensen Hughes, David Funk – LFA, Phil Trafton – DFDA, S111: Michael Bohn, Erika Stubstad, Matt Wister |
| **LOCATION** | Studio 111 | | |
| **REGARDING** | Pre-Development Mtg. | | |

**THESE NOTES SHALL SERVE AS THE OFFICIAL RECORD OF MATTERS DISCUSSED AND CONCLUSIONS REACHED UNLESS WRITTEN NOTICE TO THE CONTRARY IS RECEIVED BY RETAIL DESIGN COLLABORATIVE WITHIN 10 CALENDAR DAYS FOLLOWING ISSUANCE OF THESE NOTES.**

| ITEM NO. | DISCUSSION | ACTION |
|---|---|---|
| | **Package Review** | |
| 1 | Public Works Feedback:<br>• Confirmation on dedications via 2035 general plan reviewed, transportation element identifies 5' dedication at Clark (70' existing to 80' goal). Anaheim may be acceptable as-is.<br>• Eventual Conditions of Approval for a project on PCH may include improvements to areas within Cal-Trans boundary. Under these circumstances it will be the applicant's resposiblity to obtain cal-trans approval for improvements.<br>• Stephen F. shared Cal-Trans right of way boundary map with the group.<br>• Trip generation / traffic study will most likely be requested to determine any impacts to existing signalization. Transportation impact fees may apply, recommendation to begin this study as early as project unit counts and use are determined. | Info |
| 2 | High Rise / Low Rise building determination:<br>• City permit records reviewed; original project Certificate of Occupancy was not found. Proposed next step from City of LB is to provide an analysis of 1976 UBC vs. current building code to determine high-rise building requirements then vs. today. Existing conditions may be grand-fathered into current project depending upon the conclusion from this analysis and further research. S111 to provide copes of original drawings with 1976 UBC analysis.<br>• Bret A. – LB Fire to check City's annual inspection list of high-rise buildings to determine if the existing building has been considered a high-rise. | S111/ LB Fire |
| 3 | Structural Design Requirements:<br>• Existing building consists of a concrete moment frame with post-tensioned slabs.<br>• City of LB confirmed with LFA (Structural Engineer) no anticipated changes to current design requirements for a project of this type in the City of LB, no changes to the risk category will assist with design decisions.<br>• LFA currently assuming 75% CBC force level standards for baseline design | Info |

| | | |
|---|---|---|
| | requirements for engineering analysis, confirmed acceptable by City of LB. | |
| 4 | Plan Check Submittal / Upcoming Code Cycle Update:<br>• City confirmed acceptance for plan check review prior to completion of the entitlement process will be determined by City Planning, not Building and Safety. Conversations with leadership staff within City Planning will need to be coordinated, start this discussion early as it impacts governing code versions and basis of design.<br>• Cal-Green will mandate requirements within existing buildings, begin energy modeling analysis early. City of LB open to further discussion and review on proposed improvements.<br>• Ideal to have building systems (MEP) submitted along with architectural and structural plans concurrently, submitting these later may push them into the newer code cycle.<br>• City currently running approx. 5 weeks to plan check assignment (60-80 days). With a code cycle update coming in January, higher volumes of plan check submittals expected in December and may extend plan check review durations. | Info |

**EXHIBIT F**

# FEES NOT PAID - All Fees

**Report Description:**

12/22/2022
2:50:50PM

MILAN PARK TOWER LLC
888 S DISNEYLAND DR STE 103
ANAHEIM CA, 92802

Contractor:

2301-01 GPA23-01, ZC23-01, CUP23-001, CUP23-002, SPR23-001 for 5150 E Pacific Coast Hwy to convert existing 7-story office building to private dorms

## PLNE54154

| Fee Description | QTY | VAL | AMT |
|---|---|---|---|
| Conditional Use Permit | 2.00 | 8,400.0000 | 16,800.00 |
| General Plan Amendment | 1.00 | 15,265.0000 | 15,265.00 |
| Mailed Notice for Public Hearing 300ft | 1.00 | 410.0000 | 410.00 |
| SPR Planning Commission Approval | 1.00 | 9,755.0000 | 9,755.00 |
| Surcharge General Plan | 57,495.00 | 0.0400 | 2,299.80 |
| Surcharge Technology | 57,495.00 | 0.0400 | 2,299.80 |
| Zoning Amendment/Zone Change | 1.00 | 15,265.0000 | 15,265.00 |
| | | | **62,094.60** |

**$62,094.60**

# EXHIBIT G

## TRANSIENT LODGING GUEST ROOMS

1. Hotels, motels, inns, dormitories, resorts and similar transient lodging facilities shall provide guest rooms complying with the following requirements:
   a. Where guest rooms are altered or added, the requirements of 11B-224 Transient Lodging Guest Rooms shall apply only to the guest rooms being altered or added until the number of guest rooms complies with the minimum number required for new construction.
   b. Entrances, doors, and doorways providing user passage into and within guest rooms that are not required to provide mobility features complying with 11B-806.2 Guest Rooms with Mobility Features shall comply with 11B-404.2.3 Clear Width. Bathrooms doors shall be either sliding or hung to swing in the direction of egress from the bathroom.
   c. Accessible guest rooms or suites shall be dispersed among the various classes of sleeping accommodations to provide a range of options applicable to room sizes, costs, and amenities provided.
   d. Where toilet and bathing rooms are provided in guest rooms that are not required to provide mobility features complying with 11B-806.2 Guest Rooms with Mobility Features, toilet and bathing fixtures shall only be required to comply with 11B-603.6 Guest Room Toilet and Bathing Rooms.
2. In transient lodging facilities, provide guest rooms with mobility features complying with 11B-806.2 Guest Rooms with Mobility Features in the number required per Table 11B-224.2. Comply with the following: **§11B-224.2**
   a. Facilities that are subject to the same permit application on a common site that each have 50 or fewer guest rooms may be combined for the purposes of determining the required number of accessible rooms and type of accessible bathing facility.
   b. Facilities with more than 50 guest rooms shall be treated separately for the purposes of determining the required number of accessible rooms and type of accessible bathing facility.
3. In guest rooms having more than 25 beds, 5 percent minimum of the beds shall have clear floor space complying with 11B-806.2.3 Sleeping Areas. **§11B-224.3**
4. In transient lodging facilities, guest rooms with communication features complying with 11B-806.3 Guest Rooms with Communication Features shall be provided in the number required by Table 11B-224.4. **§11B-224.4**
5. Guest rooms required to provide mobility features complying with 11B-806.2 Guest Rooms with Mobility Features and guest rooms required to provide communication features complying with 11B-806.3 Guest Rooms with Communication Features shall be dispersed among the various classes of guest rooms, and shall provide choices of types of guest rooms, number of beds, and other amenities comparable to the choices provided to other guests. Where the minimum number of guest rooms required to comply with 11B-806 Transient Lodging Guest Rooms is not sufficient to allow for complete dispersion, guest rooms shall be dispersed in the following priority: guest room type, number of beds, and amenities. At least one guest room required to provide mobility features complying with 11B-806.2 shall also provide communication features complying with 11B-806.3. Not more than 10 percent of guest rooms required to provide mobility features complying with 11B-806.2 shall be used to satisfy the minimum number of guest rooms required to provide communication features complying with 11B-806.3. **§11B-224.5**
6. Fixed or built-in storage facilities within guest rooms required to provide mobility features shall comply with 11B-225 Storage. **§11B-224.6**
7. Guest rooms required to provide mobility features shall comply with the following: **§11B-806.2**
   a. Living and dining areas shall be accessible.
   b. Exterior spaces, including patios, terraces and balconies, that serve the guest room shall be accessible.
   c. At least one sleeping area shall provide a 36 inch by 48 inch minimum clear space on both sides of a bed. The clear space shall be positioned for parallel approach to the side of the bed.

d. There shall be a clear space under the bed for the use of a personal lift device. The clear space shall extend under the bed parallel to the long side and be adjacent to an accessible route. The clear space shall extend to points horizontally 30 inches, vertically 7 inches and not more than 12 inches from the head and foot end of the bed.

e. At least one bathroom that is provided as part of a guest room shall comply with 11B-603 Toilet and Bathing Rooms. No fewer than one water closet, one lavatory, and one bathtub or shower shall comply with applicable requirements of 11B-603 through 11B-610. In addition, required roll-in shower compartments shall comply with 11B-608.2.2 or 11B-608.2.3. Toilet and bathing fixtures required to comply with 11B-603 through 11B-610 shall be permitted to be located in more than one toilet or bathing area, provided that travel between fixtures does not require travel between other parts of the guest room. If vanity counter top space is provided in non-accessible guest toilet or bathing rooms, comparable vanity counter top space, in terms of size and proximity to the lavatory, shall also be provided in accessible guest toilet or bathing rooms.

f. Kitchens, kitchenettes and wet bars shall comply with 11B-804.

g. Turning space complying with 11B-304 shall be provided within the guest room.

8. Guest rooms required to provide communication features shall comply with the following: **§11B-806.3**

   a. Where emergency warning systems are provided, fire alarms shall comply with 11B-702 and carbon monoxide alarms shall comply with Chapter 4.

   b. Visible notification devices shall be provided to alert room occupants of incoming telephone calls and a door knock or bell. Notification devices shall not be connected to visible alarm signal appliances. Telephones shall have volume controls compatible with the telephone system and shall comply with 11B-704.3 Volume Control Telephones. Telephones shall be served by an electrical outlet complying with 11B-309 Operable Parts located within 48 inches of the telephone to facilitate the use of a TTY.

9. Housing at a place of education subject to this section shall comply with Sections 11B-224.1 through 11B-224.6 and 11B-806 for transient lodging guest rooms. For the purposes of the application of this section, the term “sleeping room” is interchangeable with “guest room” as used in the transient lodging standards. **§11B-224.7**

   **Exceptions:**
   1. Kitchens within housing units containing accessible sleeping rooms with mobility features (including suites and clustered sleeping rooms) or on floors containing accessible sleeping rooms with mobility features shall provide turning spaces that comply with Section 11B-809.2.2 and kitchen work surfaces that comply with Section 11B-804.3.
   2. Multi-bedroom housing units containing accessible sleeping rooms with mobility features shall have an accessible route throughout the unit in compliance with Section 11B-809.2.
   3. Housing facilities that are provided by or on behalf of a place of education, with residential dwelling units leased on a year-round basis exclusively to graduate students or faculty, and that do not contain any public use or common use areas available for educational programming, are not subject to Section 11B-224 and shall comply with Section 11B-233.

   a. Multi-bedroom housing units containing accessible sleeping rooms with mobility features shall have an accessible route throughout the unit in compliance with Section 11B-809.2. Kitchens, when provided, within housing units containing accessible sleeping rooms with mobility features shall comply with Section 11B-804. **§11B-224.7.1**

   b. Multi-bedroom housing units with adaptable features shall be provided as required by Section 11B-233.3.1.2. The number of required multi-bedroom housing units with adaptable features shall be reduced by the number of multi-bedroom housing units with mobility features required by Section 11B-224.2. **§11B-224.7.2**

10. Group homes, halfway houses, shelters, or similar social service center establishments that provide either temporary sleeping accommodations or residential dwelling units subject to this section shall comply with Sections 11B-224.1 through 11B-224.6 and Section 11B-233.3. **§11B-224.8**

    a. In sleeping rooms with more than 25 beds, a minimum of 5 percent of the beds shall have clear floor space complying with Section 11B-806.2.3. **§11B-224.8.1**

    b. Facilities with more than 50 beds that provide common use bathing facilities shall provide at least one roll-in shower with a seat that complies with Section 11B-608. When separate shower facilities are provided for men and women, at least one roll-in shower shall be provided for each group. **§11B-224.78.2**

**TABLE *11B*-224.2**
**GUEST ROOMS WITH MOBILITY FEATURES**

| TOTAL NUMBER OF GUEST ROOMS PROVIDED | MINIMUM NUMBER OF REQUIRED ROOMS WITHOUT ROLL-IN SHOWERS | MINIMUM NUMBER OF REQUIRED ROOMS WITH ROLL-IN SHOWERS | TOTAL NUMBER OF REQUIRED ROOMS |
|---|---|---|---|
| 1 to 25 | *0* | *1* | 1 |
| 26 to 50 | *1* | *1* | 2 |
| 51 to 75 | 3 | 1 | 4 |
| 76 to 100 | 4 | 1 | 5 |
| 101 to 150 | 5 | 2 | 7 |
| 151 to 200 | 6 | 2 | 8 |
| 201 to 300 | 7 | 3 | 10 |
| 301 to 400 | 8 | 4 | 12 |
| 401 to 500 | 9 | 4 | 13 |
| 501 to 1000 | 2 percent of total | 1 percent of total | 3 percent of total |
| 1001 and over | 20, plus 1 for each 100, or fraction thereof, over 1000 | 10, plus 1 for each 100, or fraction thereof, over 1000 | 30, plus 2 for each 100, or fraction thereof, over 1000 |

**TABLE *11B*-224.4**
**GUEST ROOMS WITH COMMUNICATION FEATURES**

| TOTAL NUMBER OF GUEST ROOMS PROVIDED | MINIMUM NUMBER OF REQUIRED GUEST ROOMS WITH COMMUNICATION FEATURES |
|---|---|
| 1 | 1 |
| 2 to 25 | 2 |
| 26 to 50 | 4 |
| 51 to 75 | 7 |
| 76 to 100 | 9 |
| 101 to 150 | 12 |
| 151 to 200 | 14 |
| 201 to 300 | 17 |
| 301 to 400 | 20 |
| 401 to 500 | 22 |
| 501 to 1000 | 5 percent of total |
| 1001 and over | 50, plus 3 for each 100 over 1000 |

**ADDITIONAL COMMENTS**

**EXHIBIT H**

# Park Tower

5150 E. Pacific Coast Hwy, 2nd Floor, Long Beach, CA 90804

Get Directions

(562) 346-3200



**General Manager**
Lillian Villa-Quintero

Request Information

Take a Tour

Book a Meeting Room

Welcome to our Premier Workspaces in the Park Tower at 5150 Pacific Coast Highway, 2nd Floor in Long Beach. Located at the corner of PCH and Anaheim, our 17,274 square foot executive suite has 58 window and interior offices and three conference rooms to accommodate all your business needs. This building is a 7-story Class A office tower with renovated lobby, common areas, elevator lobbies, parking garage and landscaping as well as a dramatic new ground floor main building lobby making this mirrored glass landmark building one of the region's most modern business environments.





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**Meeting Rooms**

Meeting Rooms

**from $65/hour**

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Meeting Rooms

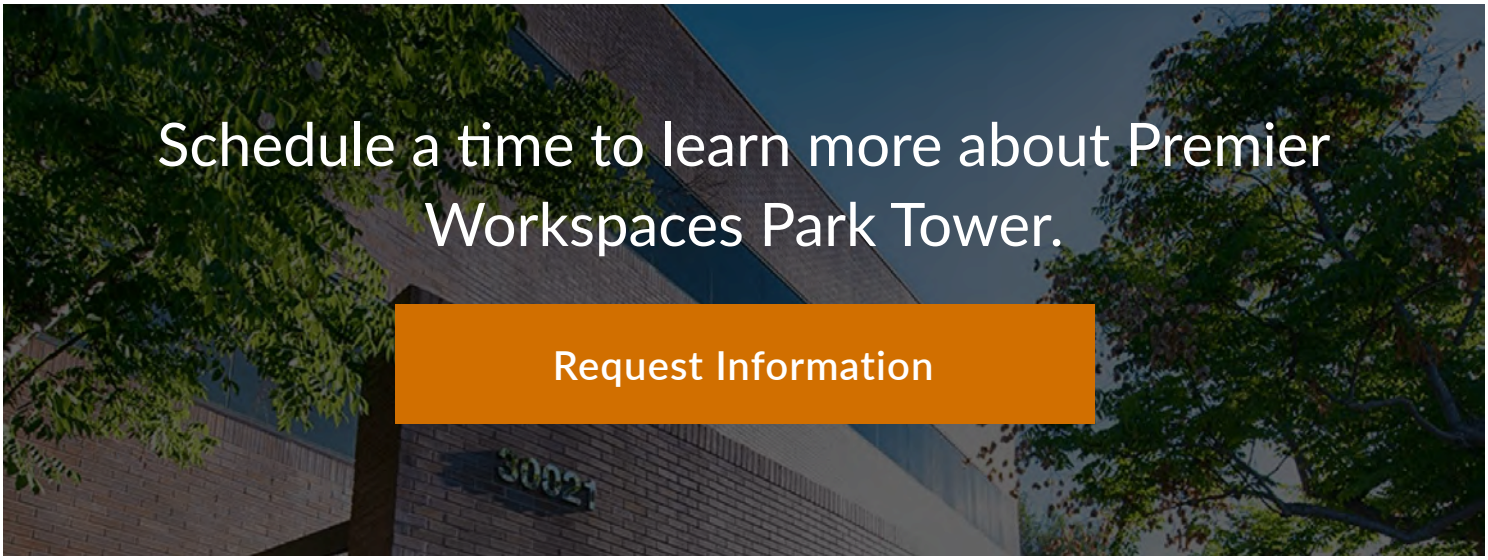
Flexible Terms

Professional Address

Virtual Offices

Equipped Kitchen

Support Services




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Coworking Space Available in Long Beach, CA 90804





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LoopNet™ Advertise

# 5150 E Pacific Coast Hwy - Park Tower

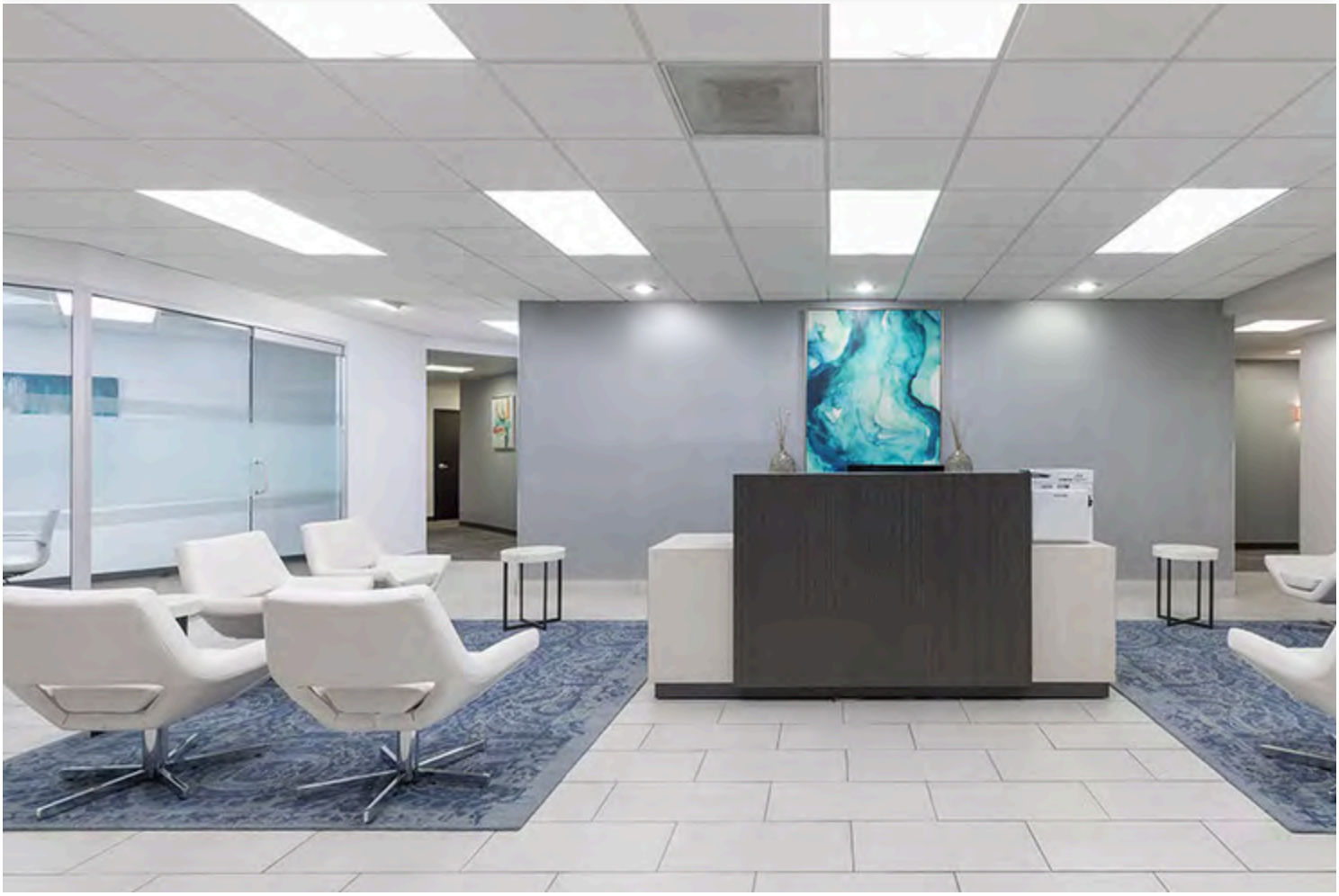
Coworking Space Available in Long Beach, CA 90804



LoopNet™ Advertise

# 5150 E Pacific Coast Hwy - Park Tower

Coworking Space Available in Long Beach, CA 90804



## ALL AVAILABLE SPACES (4)

### 2nd Floor

NO. OF PEOPLE
1 - 2

SIZE

### 2nd Floor

NO. OF PEOPLE
1 - 2

SIZE

# 5150 E Pacific Coast Hwy - Park Tower

Coworking Space Available in Long Beach, CA 90804

Office

AVAILABLE
TBD

Details

Office

AVAILABLE
TBD

Details

## 2nd Floor

NO. OF PEOPLE
1

SIZE
100 SF

TERM
-

RENTAL RATE
Upon Request

SPACE USE
Office

AVAILABLE
TBD

Details

## 2nd Floor

NO. OF PEOPLE
1 - 12

SIZE
100-1,500 SF

TERM
-

RENTAL RATE
Upon Request

SPACE USE
Office

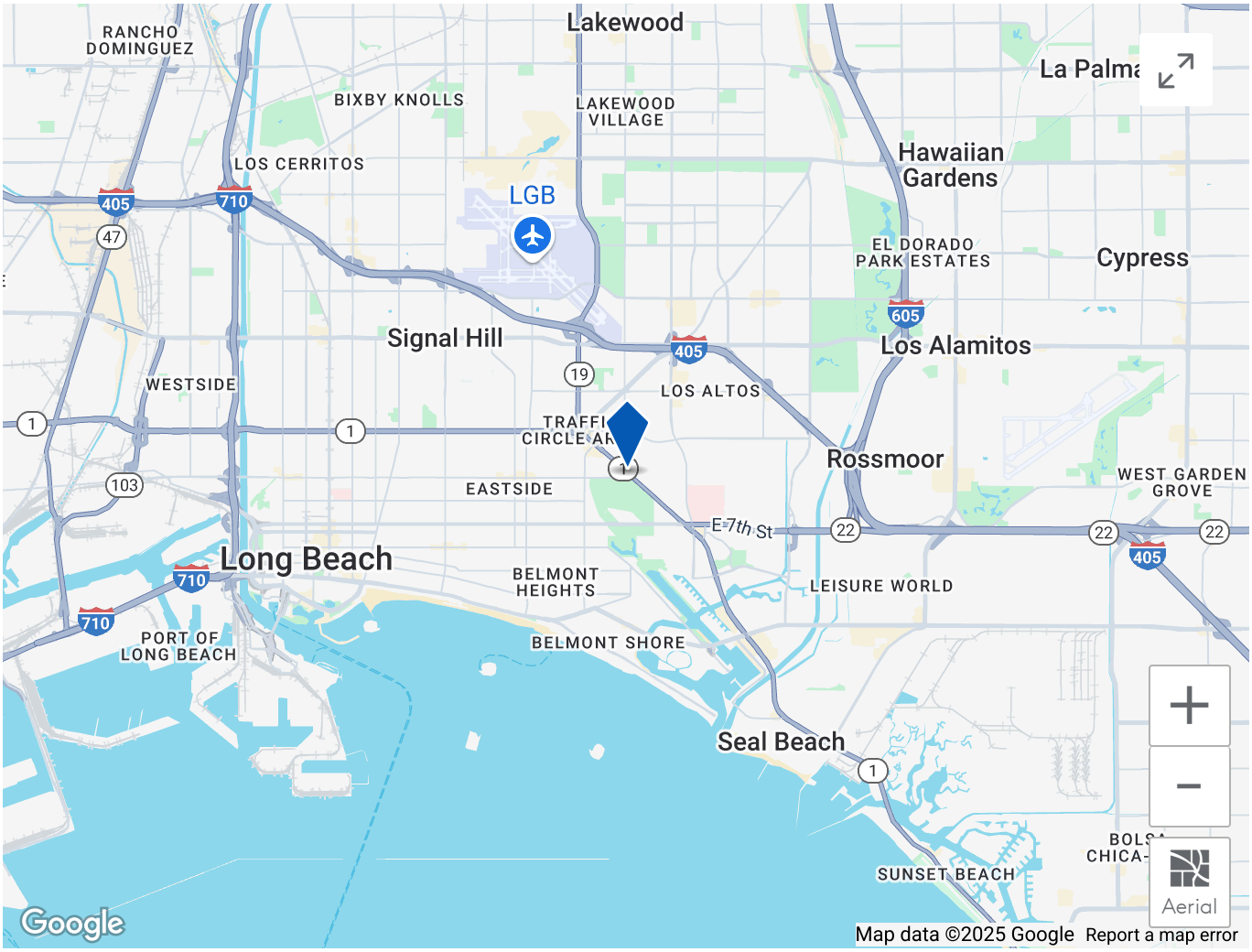
AVAILABLE
TBD

Details

# 5150 E Pacific Coast Hwy - Park Tower

Coworking Space Available in Long Beach, CA 90804

## MAP




Walk Score®
Very Walkable (84)

Bike Score®
Very Bikeable (74)

## TRANSPORTATION

# 5150 E Pacific Coast Hwy - Park Tower

Coworking Space Available in Long Beach, CA 90804

| | | |
|---|---|---|
| 51h Street Station | 9 min drive | 3.8 mi |
| 1St Street Station | 10 min drive | 4.1 mi |
| Pacific Station | 10 min drive | 4.2 mi |

## COMMUTER RAIL

| | | |
|---|---|---|
| Norwalk/Santa Fe Springs METROLINK. | 21 min drive | 15.5 mi |
| Buena Park METROLINK. | 24 min drive | 15.7 mi |
| Commerce METROLINK. | 26 min drive | 19.3 mi |
| Anaheim-Artic Metrolink Station | 24 min drive | 17.5 mi |
| Fullerton METROLINK. | 28 min drive | 19.1 mi |

## AIRPORT

| | | |
|---|---|---|
| Long Beach (Daugherty Field) | 8 min drive | 4.7 mi |
| John Wayne/Orange County | 23 min drive | 18.0 mi |

**Listing ID:** 31082473 **Date on Market:** 2/29/2024 **Last Updated:** 1/9/2025

**Address:** 5150 E Pacific Coast Hwy, Long Beach, CA 90804

More public record information on 5150 E Pacific Coast Hwy, Long Beach, CA 90804

# 5150 E Pacific Coast Hwy - Park Tower

Coworking Space Available in Long Beach, CA 90804

Central San Pedro Coworking Space

Westside Long Beach Coworking Space

Belmont Shore Coworking Space

Oak View Coworking Space

Northwest San Pedro Coworking Space

Eastside Long Beach Coworking Space

Lakewood Country Club Coworking Space

Los Altos Coworking Space

Downtown Compton Coworking Space

Marina Pacifica Coworking Space

Plaza Coworking Space

Wrigley Coworking Space

## NEARBY LISTINGS

249 E Ocean Blvd, Long Beach CA

330 Golden Shore, Long Beach CA

4281 Katella Ave, Los Alamitos CA

320 Pine Ave, Long Beach CA

200 Pine Ave, Long Beach CA

4332 Cerritos Ave, Los Alamitos CA

10532 Los Vaqueros Cir, Los Alamitos CA

3633 N Long Beach Blvd, Long Beach CA

3130 E Willow St, Long Beach CA

980 Atlantic Ave, Long Beach CA

2700 N Bellflower Blvd, Long Beach CA

408 E 1st St, Long Beach CA

# 5150 E Pacific Coast Hwy - Park Tower

Coworking Space Available in Long Beach, CA 90804



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LiquidSpace

Solutions

How it Works

Pricing

Get demo

Log in

Sign up

Become a Host

Help

# (PCH) Park Tower

5150 East Pacific Coast Highway, Suite 200, Long Beach, CA 90804 - Limited Access

Health & Safety

4.9 (26)

Welcome to our Premier Workspaces in the Park Tower at 5150 Pacific Coast Highway, 2nd Floor in Long Beach. Located at the corner of PCH and Anaheim, our 17,274 square foot executive suite has 58 window and interior offices and three conference rooms to accommodate all your business needs. This building is a 7-story Class A office tower with renovated lobby, common areas, elevator lobbies, parking garage and landscaping as well as a dramatic new ground floor main building lobby making this mirrored glass landmark building one of the region's most modern business environments.

LiquidSpace

**Lillian Villa-Quintero**
Host

CHOOSE SPACE

Interior Office

Inquire

Hourly (4) Monthly (4)

Health & Safety

**$39+/hour**

Private Meeting Room for 12

Health & Safety

**$45+/hour**

Private Meeting Room for 12

LiquidSpace

**$29+/hour**

Private Meeting Room for 6

Health & Safety

**$25+/hour**

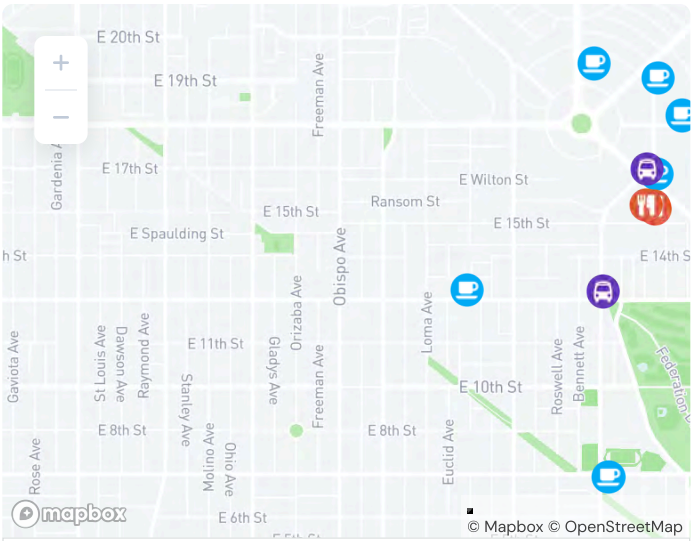
Private Office for 3

## Amenities & Services

- WiFi
- 24/7 Access
- Accessibility
- Coffee/Tea
- Door w/Lock
- Entry
- Filtered Water
- Furnished
- Health & Safety Policy
- Hosted Reception
- Kitchen
- Mailbox Services
- Meeting Rooms
- Phone
- Print/Scan/Copy
- PRO
- Storage
- TV/Monitor
- Whiteboard
- Window View

## Space Types

LiquidSpace




**(PCH) Park Tower**

5150 East Pacific Coast Highway, Suite 200, Long Beach, CA 90804

## Reviews

# EXHIBIT I

# About ProHealth Partners

***ProHealth Partners was formed in September of 1995. The original group consisted of 21 physicians in 14 office locations. Currently there are over 160 physicians in over 80 locations. Mostly Primary Care Physicians, Specialists and Ancillary Providers.***



## About Us

ProHealth Partners comprises the most comprehensive and well-established network of primary care physicians and specialists in the Greater Long Beach area with expansion into Los Angeles and Orange County areas. Our physicians are on
staff at most major hospitals in the region and many are fluent in several languages.

Convenient office locations spanning a wide geographic area means that you are never more than five minutes away from a ProHealth primary care office. ProHealth physicians provide flexible appointment hours and are providers for most major insurance plans, including HMOs, PPOs and Medicare.

While our physicians represent a diverse range of medical specialties, backgrounds, and geographic locations, they are unique in one way. All ProHealth physicians enjoy the professional independence to ensure that the health care needs of patients will always be our first priority.

### Contact Information

ProHealth Partners, A Medical Group
5150 E. Pacific Coast Highway, Suite 500
Long Beach, CA 90804
prohealth@prohealthpartners.com
(562) 299-5200

### Patient Services

Make a payment, account balance or ask a question about your bill or statement.
patients@argusmso.net
(800) 804 – 7996

**EXHIBIT J**

## Gina Casillas

**From:** Gina Casillas
**Sent:** Wednesday, March 27, 2024 5:06 PM
**To:** Derek Burnham
**Subject:** Draft VMT memo - 5150 E Pacific Coast Hwy
**Attachments:** 5150 PCH - Trip Gen Memo and VMT Screening.pdf; Long Beach Dorm- Trip Gen Memo and VMT Screening.docx

Hi Derek

The consultants have prepared the Draft VMT memo for our review. I am sharing it with you for your review. The City Traffic Engineer has provided comments on this memo which I am also sharing with you. If you have any concerns with the draft Memo or the comments below we can discuss them with the consultants. I am going to prepare a list of questions so that the meeting is productive for all of us.

Traffic Engineer Comments

He agrees with the general conclusions of the analysis and screening. He does not believe that the Project will generate enough net vehicle trips to warrant preparation of a full Traffic Impact Analysis, and the Project does screen out of further VMT analysis based on at least one screening criterion.

- The trip generation for the proposed uses are based on land use codes in the Institute of Transportation Engineers (ITE) Trip Generation Manual that have trip rates derived from limited datasets. Cautions due to small sample size are provided in the manual for both land use code 226 (Off-Campus Student Apartment [Mid-Rise]) and land use code 930 (Fast Casual Restaurant). I do not think we can do anything about this, though, like ask them to perform empirical studies of similar uses. That feels like going way overboard.
- Land use code 226 (Off-Campus Student Apartment [Mid-Rise]) provides trip rates for the “Adjacent to Campus” land use subcategory, which does not apply to the Project as it is over 0.5 miles from CSULB. However, rates are not provided for the “Over 1/2 Mile from Campus” land use subcategory for land use code 226. Therefore, I would suggest developing “Over 1/2 Mile from Campus”-to-“Adjacent to Campus” adjustment factors for the weekday daily, AM peak-hour, and PM peak-hour periods using the data in the manual for land use code 225 (Off-Campus Student Apartment [Low-Rise]). These factors can be used to account for the Project’s distance from the CSULB campus.
- If the proposed 5,959 square-foot kitchen and dining area is for the use of student residents of the Project only, then I would remove it as a proposed use trip generator. It would be an amenity. If the area’s use is restricted to student residents, the presence of the kitchen and dining area would be expected to reduce vehicle trips as residents would be more likely to dine “at home” than venture out for meals. If the kitchen and dining area is open for general public use, I would still recommend applying a steep internal trip discount as it will be frequented mostly by student residents.
- I am a little confused about the nature of the existing Park Tower building. It has been described as a medical office in the memorandum, but it appears to be a general office per other sources. This should be clarified and, if needed, the existing use trip generation estimates should be updated.

**Thank you,**

**Gina Casillas**
*Planner*

**Community Development | Planning Bureau**
411 W. Ocean Blvd., 3rd Fl. | Long Beach, CA 90802
Office: 562.570.6879 | Email: gina.casillas@longbeach.gov






# EXHIBIT K

## Gina Casillas

**From:** Gina Casillas
**Sent:** Tuesday, February 14, 2023 9:59 AM
**To:** Amy Harbin
**Subject:** RE: Questions RE: 5150 PCH
**Attachments:** PLANS- V1- 220819 5150 E PCH CSPR Package (1).pdf

Here you go

**Gina Casillas**
*Planner*

**Long Beach Development Services | Planning Bureau**
**T** 562.570.6879 **F** 562.570.6068
411 West Ocean Blvd., 3rd Floor | Long Beach, CA 90802
Gina.Casillas@longbeach.gov | www.longbeach.gov

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**From:** Derek Burnham <derek@burnhamdevelopment.com>
**Sent:** Tuesday, February 14, 2023 9:44 AM
**To:** Amy Harbin <Amy.Harbin@longbeach.gov>
**Cc:** Gina Casillas <Gina.Casillas@longbeach.gov>; Alexis Oropeza <Alexis.Oropeza@longbeach.gov>
**Subject:** Re: Questions RE: 5150 PCH

**-EXTERNAL-**

Amy,

See below for answers to your questions. Please let me know if you have any questions or need any additional information.

Thanks.

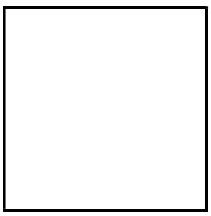
**Derek Burnham**

Principal, Burnham Planning & Development

**P** 562.354.1430 **M** 310.594.0718

**E** derek@burnhamdevelopment.com

**W** www.burnhamdevelopment.com



On Fri, Feb 3, 2023 at 1:18 PM Amy Harbin <Amy.Harbin@longbeach.gov> wrote:

Hi Derek,

Kimley-Horn has some questions that will help them prepare their proposal. Please see the questions below and respond. Please return responses to me and I'll ensure they get over to the consultant. Gina is also going to check on the items they've asked the City.

1. Do you know the current occupancy of the building? Empty, half full, full? This could play a substantial role in determining the CEQA baseline, and in turn, the feasibility of clearing CEQA for the project with an IS/MND or a focused EIR. Total building area is approximatley 120,000 sf., and 109,600 sf. is currently leased.
2. Because the building is approaching 45 years old, historic needs to be studied.
3. @Gina Casillas Does the City have a historic inventory of this area? We have not done a historic inventory.
4. Has the Applicant or the City studied the building's potential eligibility? @Gina Casillas can you verify or not if the City has studied the potential eligibility?
5. Would the project involve any ground disturbance? Or is it just tenant improvements internal to the building? Would the exterior be altered, glazing replaced, etc.? Minimal ground disturbance for installation of landscaping and shallow pool (18" depth). Please refer them to the elevation sheets and materials board in the plan set--this shows the extent of alterations and material changes. Generally, the exterior will remain the same--addition of decorative window film is proposed, as well as some changes to the entryways at the ground level. The majority of the work will be a TI.
6. Has the applicant initiated/completed any studies, such as No studies completed:
    a. Phase I
    b. Geo
    c. Hydro
    d. Cultural/Historic
    e. WSA
    f. Traffic studies, CEQA and non-CEQA (TIA)
    g. Utilities

Thank you,

Amy

**I will be out of the office February Monday February 6, 2023 through Tuesday February 14, 2023. I will have limited access to email during that time.**

**Amy L. Harbin, AICP**

*Planner*

**Long Beach Development Services | Planning**

411 W. Ocean Blvd., 3rd Fl. | Long Beach, CA 90802

Office: 562.570.6872






**EXHIBIT L**

| OBJECTID | APN | Acres | Site ID | Site Acres | VLI | MI | MR | Address | GlobalID |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.27E+09 | 0.88 | 418 | 0.88 | 132 | 0 | 0 | 1350 LON( | f02a4256- |
| 2 | 7.27E+09 | 0.06 | 411 | 0.51 | 6 | 0 | 0 | 201 W AN/ | 45bcb6e5- |
| 3 | 7.27E+09 | 0.17 | 196 | 0.34 | 0 | 2 | 6 | 1709 CEDA | ea34c8fa-( |
| 4 | 7.21E+09 | 0.29 | 184 | 0.29 | 0 | 5 | 21 | 245 W PA( | 67a2aac4- |
| 5 | 7.21E+09 | 0.14 | 14 | 0.28 | 0 | 1 | 3 | 226 E 31ST | 15533a0b- |
| 6 | 7.21E+09 | 0.14 | 17 | 0.42 | 0 | 1 | 3 | 112 E 31ST | 6fa7a4a8-a |
| 7 | 7.13E+09 | 0.82 | 665 | 0.82 | 31 | 0 | 0 | 201 E MAF | 90e5f895- |
| 8 | 7.13E+09 | 0.22 | 82 | 0.38 | 0 | 1 | 6 | 120 W MC | 25d6ecfb-( |
| 9 | 7.27E+09 | 0.18 | 339 | 0.79 | 1 | 0 | 6 | 937 ATLAN | 0893ee36- |
| 10 | 7.13E+09 | 0.65 | 96 | 0.65 | 28 | 0 | 0 | 5146 ATLA | 939afef5-4 |
| 11 | 7.24E+09 | 0.28 | 597 | 0.28 | 0 | 2 | 6 | 5700 E 2NI | 089c0e5c- |
| 12 | 7.26E+09 | 0.15 | 568 | 0.29 | 0 | 1 | 5 | 525 NEWP | 25975177- |
| 13 | 7.26E+09 | 0.14 | 373 | 0.67 | 10 | 0 | 0 | 1942 E AN | 67463520- |
| 14 | 7.21E+09 | 0.15 | 156 | 0.28 | 1 | 0 | 10 | 2485 LON( | c5cc6e1f-1 |
| 15 | 7.27E+09 | 0.17 | 445 | 0.34 | 3 | 0 | 26 | 1021 LOCU | 5d2f0755- |
| 16 | 7.26E+09 | 0.14 | 579 | 0.29 | 0 | 1 | 3 | 327 REDC | b0c1aef9-9 |
| 17 | 7.21E+09 | 0.09 | 120 | 0.33 | 0 | 2 | 8 | 566 E VERI | 2940ff4e-f |
| 18 | 7.12E+09 | 0.12 | 608 | 0.31 | 0 | 1 | 3 | 6532 N PA | 0b002eb5- |
| 19 | 7.21E+09 | 0.87 | 20 | 0.87 | 38 | 0 | 0 | | 6eff779c-e |
| 20 | 7.27E+09 | 0.19 | 404 | 0.43 | 0 | 3 | 11 | | 62084cbf-4 |
| 21 | 7.13E+09 | 0.23 | 80 | 0.69 | 10 | 0 | 0 | 51 W 52NI | d5671c03- |
| 22 | 7.26E+09 | 0.31 | 221 | 0.44 | 0 | 3 | 12 | 1701 CHEF | 43852cce- |
| 23 | 7.13E+09 | 0.62 | 667 | 0.62 | 23 | 0 | 0 | 31 W LOUI | b8aad6f2-( |
| 24 | 7.27E+09 | 0.16 | 189 | 0.84 | 24 | 0 | 0 | 318 E ESTH | f07ccc2f-f( |
| 25 | 7.21E+09 | 0.14 | 13 | 0.28 | 1 | 0 | 6 | 3150 LON( | b525388c- |
| 26 | 7.26E+09 | 0.34 | 379 | 0.49 | 0 | 3 | 14 | 2041 E AN | 34b4bc16- |
| 27 | 7.31E+09 | 0.27 | 3 | 0.27 | 0 | 2 | 6 | 3510 SANT | 9d4b7f32- |
| 28 | 7.21E+09 | 0.52 | 164 | 0.65 | 52 | 0 | 0 | 2301 LON( | a62befb5- |
| 29 | 7.15E+09 | 0.31 | 41 | 1.01 | 19 | 0 | 0 | | 395405bf- |
| 30 | 7.13E+09 | 0.5 | 70 | 0.5 | 35 | 0 | 0 | 4231 LON( | b375ee6c- |
| 31 | 7.13E+09 | 0.14 | 644 | 0.38 | 0 | 1 | 6 | 5449 CHEF | 558cfd3b-4 |
| 32 | 7.28E+09 | 0.34 | 504 | 0.34 | 6 | 0 | 52 | 345 ELM A | f8f556e5-a |
| 33 | 7.26E+09 | 0.12 | 577 | 0.27 | 0 | 1 | 3 | | 91d4568a- |
| 34 | 7.22E+09 | 0.13 | 238 | 0.26 | 0 | 1 | 5 | 1845 CHEF | 44b2a1f0-4 |
| 35 | 7.26E+09 | 0.15 | 296 | 0.3 | 0 | 1 | 4 | 1201 LOM | a1976e0c- |
| 36 | 7.27E+09 | 0.17 | 416 | 0.34 | 2 | 0 | 16 | 131 E ANA | 63d19eb5- |
| 37 | 7.4E+09 | 1.08 | 151 | 1.08 | 41 | 0 | 0 | 2520 SANT | a4ee05e6- |
| 38 | 7.15E+09 | 0.26 | 35 | 0.48 | 0 | 2 | 6 | 3400 ORAI | 420ec1b8- |
| 39 | 7.26E+09 | 0.27 | 535 | 0.27 | 0 | 3 | 10 | 2337 E 7TH | 63b88377- |
| 40 | 7.26E+09 | 0.14 | 260 | 0.28 | 0 | 1 | 6 | 3344 E PA( | ff4e9bed-( |
| 41 | 7.14E+09 | 0.37 | 68 | 0.37 | 0 | 2 | 9 | 4155 LON( | 837ab61f- |
| 42 | 7.13E+09 | 0.26 | 78 | 0.39 | 0 | 2 | 6 | 100 E MAF | 20d6dd87- |
| 43 | 7.12E+09 | 0.14 | 623 | 0.3 | 0 | 1 | 6 | 570 E 67TH | 2c32635e- |
| 44 | 7.27E+09 | 0.17 | 438 | 0.8 | 17 | 0 | 0 | 1063 ELM | a3f2c586-4 |
| 45 | 7.27E+09 | 0.12 | 329 | 0.36 | 2 | 0 | 15 | 1032 E CH/ | d1f564df-f |
| 46 | 7.13E+09 | 0.06 | 75 | 0.52 | 2 | 0 | 0 | 5336 LON( | 22f8efd1-( |
| 47 | 7.31E+09 | 0.38 | 145 | 0.51 | 14 | 0 | 0 | | c982cf12-( |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 48 | 7.21E+09 | 0.3 | 12 | 2.35 | 21 | 0 | 0 | | 261b3147- |
| 49 | 7.13E+09 | 0.45 | 93 | 1.48 | 17 | 0 | 0 | 5005 LON( | 8bfa2909- |
| 50 | 7.24E+09 | 0.3 | 571 | 0.3 | 0 | 2 | 7 | 4400 E 7TI | caaef943- |
| 51 | 7.27E+09 | 0.15 | 408 | 0.46 | 2 | 0 | 14 | 1425 ELM | 32992872- |
| 52 | 7.27E+09 | 0.17 | 439 | 1.19 | 29 | 0 | 0 | 1062 LON( | e2878ede- |
| 53 | 7.13E+09 | 0.16 | 79 | 0.33 | 0 | 1 | 4 | 330 E MAI | 3c13f753- |
| 54 | 7.27E+09 | 0.15 | 213 | 0.3 | 0 | 1 | 6 | 1773 LEM( | 64417038- |
| 55 | 7.13E+09 | 0.44 | 91 | 0.44 | 0 | 3 | 10 | 4991 LON( | cd167433- |
| 56 | 7.27E+09 | 0.33 | 217 | 0.33 | 0 | 3 | 13 | | 9ff2f47b-a |
| 57 | 7.25E+09 | 0.14 | 569 | 0.37 | 0 | 1 | 3 | 4017 E 7TI | 00d318df- |
| 58 | 7.27E+09 | 0.41 | 530 | 0.41 | 0 | 4 | 16 | 1500 E 7TI | f32270ed- |
| 59 | 7.26E+09 | 0.15 | 293 | 0.63 | 10 | 0 | 0 | 3522 E AN | 803d85a8- |
| 60 | 7.26E+09 | 0.18 | 565 | 0.67 | 8 | 0 | 0 | 720 CORO | 574c37f0- |
| 61 | 7.26E+09 | 0.3 | 552 | 0.3 | 0 | 2 | 7 | 3601 E 4TI | 754365be- |
| 62 | 7.27E+09 | 0.52 | 458 | 0.71 | 9 | 0 | 79 | 795 LONG | 4474ca0b- |
| 63 | 7.27E+09 | 0.19 | 457 | 0.36 | 3 | 0 | 29 | | 3f2d8fcc-2 |
| 64 | 7.26E+09 | 0.15 | 562 | 0.69 | 10 | 0 | 0 | 659 REDOI | db16ffe0- |
| 65 | 7.27E+09 | 0.17 | 433 | 0.34 | 3 | 0 | 26 | 1058 PACI | 4f2bf17f-e |
| 66 | 7.12E+09 | 0.23 | 611 | 0.27 | 0 | 1 | 6 | 2990 E AR | bca799ce- |
| 67 | 7.27E+09 | 0.17 | 453 | 0.51 | 3 | 0 | 26 | 912 PACIFI | 1228e312- |
| 68 | 7.26E+09 | 0.15 | 536 | 0.3 | 0 | 1 | 4 | 2429 E 4TI | d3879e08- |
| 69 | 7.26E+09 | 0.3 | 318 | 0.3 | 0 | 2 | 7 | 1010 OBIS | 47349968- |
| 70 | 7.12E+09 | 0.78 | 622 | 0.78 | 54 | 0 | 0 | 6685 ATLA | d31b7f0b- |
| 71 | 7.12E+09 | 0.71 | 607 | 0.83 | 27 | 0 | 0 | 6574 N PA | 39eff3bc-0 |
| 72 | 7.27E+09 | 0.18 | 443 | 0.36 | 3 | 0 | 28 | 233 E 10TI | 00b0b8bd- |
| 73 | 7.26E+09 | 0.15 | 536 | 0.3 | 0 | 1 | 4 | 2425 E 4TI | 0ce2c8fc-6 |
| 74 | 7.26E+09 | 0.15 | 586 | 0.27 | 0 | 1 | 4 | 226 OBISP | 593d1eb2- |
| 75 | 7.21E+09 | 0.24 | 129 | 0.39 | 0 | 1 | 6 | 455 W WII | d3779b63- |
| 76 | 7.21E+09 | 0.14 | 252 | 0.28 | 0 | 2 | 8 | 1922 PASA | 2a80e4c9- |
| 77 | 7.2E+09 | 0.39 | 136 | 0.39 | 0 | 2 | 10 | 855 W WII | 54128985- |
| 78 | 7.12E+09 | 0.6 | 630 | 0.6 | 41 | 0 | 0 | 6580 ATLA | a0b77989- |
| 79 | 7.27E+09 | 0.33 | 422 | 0.45 | 5 | 0 | 41 | 1219 PACI | af9e95cf-b |
| 80 | 7.26E+09 | 0.15 | 316 | 0.3 | 0 | 1 | 6 | 785 REDOI | 3e75f3de- |
| 81 | 7.14E+09 | 0.53 | 106 | 0.81 | 20 | 0 | 0 | 1155 E SAI | 3f02afdc-3 |
| 82 | 7.12E+09 | 0.28 | 612 | 0.28 | 0 | 2 | 7 | 3012 E AR | f72934aa- |
| 83 | 7.11E+09 | 0.14 | 634 | 0.4 | 0 | 1 | 3 | 6395 CHEI | 7b22a760- |
| 84 | 7.27E+09 | 0.34 | 231 | 0.34 | 0 | 3 | 14 | 1520 E PA( | 1aca167f-b |
| 85 | 7.25E+09 | 0.24 | 300 | 0.45 | 0 | 2 | 10 | 3909 E AN | 0be8def6- |
| 86 | 7.22E+09 | 0.31 | 270 | 0.31 | 0 | 2 | 7 | 5095 E PA( | a603f7e3- |
| 87 | 7.21E+09 | 0.39 | 240 | 0.39 | 0 | 4 | 15 | 1101 E PA( | f3febba9-f |
| 88 | 7.21E+09 | 0.15 | 118 | 0.73 | 23 | 0 | 0 | 2546 ATLA | a419bfd4- |
| 89 | 7.11E+09 | 0.48 | 619 | 0.48 | 0 | 3 | 11 | 1965 E AR | 1815399a- |
| 90 | 7.12E+09 | 2.25 | 657 | 2.25 | 155 | 0 | 0 | 2311 E SO | 77c68063- |
| 91 | 7.21E+09 | 0.53 | 163 | 0.53 | 20 | 0 | 0 | 2299 PACI | 2a778415- |
| 92 | 7.28E+09 | 0.12 | 476 | 0.35 | 2 | 0 | 18 | 302 MAGN | 0855afca- |
| 93 | 7.14E+09 | 3.94 | 105 | 4.46 | 271 | 0 | 0 | | 19145121- |
| 94 | 7.27E+09 | 0.15 | 356 | 0.48 | 0 | 1 | 6 | 1224 LIME | a17888aa- |
| 95 | 7.28E+09 | 0.17 | 515 | 0.34 | 2 | 0 | 22 | 437 E 5TH | 10fbc986- |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 96 | 7.21E+09 | 0.13 | 167 | 0.26 | 1 | 0 | 8 | 2234 | LOCU | 8b3a353f- |
| 97 | 7.14E+09 | 3.28 | 104 | 3.28 | 226 | 0 | 0 | 4570 | ATLA | 3c7c92fa- |
| 98 | 7.3E+09 | 0.06 | 675 | 0.59 | 2 | 0 | 0 | | | 77addba5- |
| 99 | 7.14E+09 | 0.15 | 58 | 0.36 | 0 | 1 | 4 | 3811 | LON( | c79575e5- |
| 100 | 7.21E+09 | 0.15 | 12 | 2.35 | 10 | 0 | 0 | 3248 | LON( | de1e4894- |
| 101 | 7.26E+09 | 0.15 | 326 | 0.3 | 0 | 1 | 6 | 754 | CHERI | 79974d03- |
| 102 | 7.26E+09 | 0.15 | 261 | 0.3 | 0 | 1 | 6 | | | a333062f- |
| 103 | 7.21E+09 | 0.31 | 130 | 0.46 | 0 | 2 | 7 | 329 | W WII | 29c5dc6b- |
| 104 | 7.27E+09 | 0.17 | 518 | 0.4 | 2 | 0 | 22 | 617 | E 7TH | e2187ca9- |
| 105 | 7.25E+09 | 0.4 | 303 | 0.4 | 0 | 4 | 16 | 4315 | E AN | 72993eb2- |
| 106 | 7.13E+09 | 0.34 | 71 | 0.34 | 0 | 3 | 14 | 4310 | LON( | 8b127b7a- |
| 107 | 7.26E+09 | 0.19 | 277 | 1.14 | 13 | 0 | 0 | 3401 | E AN | c0e735a7- |
| 108 | 7.27E+09 | 0.17 | 445 | 0.34 | 3 | 0 | 26 | 1025 | LOCU | 17f6c970- |
| 109 | 7.21E+09 | 0.11 | 121 | 0.54 | 17 | 0 | 0 | 2545 | ATLA | 3d77ce69- |
| 110 | 7.27E+09 | 0.45 | 200 | 1.42 | 48 | 0 | 0 | 1701 | LON( | 16fc2b43- |
| 111 | 7.27E+09 | 0.17 | 198 | 0.51 | 17 | 0 | 0 | 1608 | PACI | c0ca4dbc- |
| 112 | 7.27E+09 | 0.15 | 525 | 0.3 | 2 | 0 | 19 | 1028 | E 6TH | 77e7909f- |
| 113 | 7.27E+09 | 0.16 | 348 | 0.32 | 0 | 1 | 6 | 1027 | E 11 | b3cc5c69- |
| 114 | 7.21E+09 | 0.14 | 245 | 0.42 | 2 | 0 | 13 | 1816 | PASA | 84a33a9f- |
| 115 | 7.12E+09 | 0.12 | 610 | 0.48 | 0 | 1 | 5 | 6634 | ORIZ | 4ecab53a- |
| 116 | 7.26E+09 | 0.15 | 549 | 0.3 | 0 | 1 | 4 | 391 | CORO | c2fd48a3- |
| 117 | 7.12E+09 | 0.22 | 613 | 0.69 | 10 | 0 | 0 | 3490 | E AR | 41469a76- |
| 118 | 7.27E+09 | 0.18 | 192 | 0.92 | 11 | 0 | 0 | 1724 | CEDA | df5bcce1-f |
| 119 | 7.14E+09 | 0.44 | 107 | 0.44 | 0 | 4 | 18 | 4550 | ORAI | 80a90efd- |
| 120 | 7.28E+09 | 0.17 | 516 | 0.34 | 2 | 0 | 22 | 523 | E 5TH | 7988ba55- |
| 121 | 7.28E+09 | 0.19 | 514 | 0.36 | 3 | 0 | 24 | 425 | LINDE | 07486245- |
| 122 | 7.28E+09 | 0.23 | 513 | 0.52 | 3 | 0 | 29 | 401 | ATLAN | 3e790798- |
| 123 | 7.21E+09 | 0.2 | 12 | 2.35 | 14 | 0 | 0 | | | e3d406c2- |
| 124 | 7.26E+09 | 0.15 | 374 | 0.3 | 0 | 1 | 6 | 1132 | CHEF | fa09e098- |
| 125 | 7.24E+09 | 2.54 | 601 | 2.54 | 95 | 0 | 0 | 6700 | E PA( | ea113eea- |
| 126 | 7.12E+09 | 0.24 | 610 | 0.48 | 0 | 2 | 10 | 6629 | HAM | f072c423- |
| 127 | 7.31E+09 | 0.06 | 1 | 0.28 | 0 | 0 | 2 | | | a45c189b- |
| 128 | 7.27E+09 | 0.17 | 197 | 0.34 | 0 | 2 | 6 | 1607 | CHES | 50cf9a81- |
| 129 | 7.27E+09 | 0.17 | 203 | 0.34 | 1 | 0 | 12 | 1610 | LOCU | 820545b6- |
| 130 | 7.25E+09 | 0.32 | 302 | 0.64 | 22 | 0 | 0 | 4133 | E AN | 2a145916- |
| 131 | 7.27E+09 | 0.18 | 192 | 0.92 | 11 | 0 | 0 | | | 8f4943af- |
| 132 | 7.27E+09 | 0.32 | 424 | 0.32 | 5 | 0 | 49 | 110 | E ANA | c738053b- |
| 133 | 7.26E+09 | 0.15 | 315 | 0.3 | 0 | 1 | 4 | 776 | CORO | c8a1bfc9- |
| 134 | 7.26E+09 | 0.14 | 388 | 0.42 | 0 | 1 | 6 | 1437 | CHEF | 8b738bea- |
| 135 | 7.26E+09 | 0.29 | 547 | 0.43 | 0 | 2 | 10 | 374 | REDOI | b5c99013- |
| 136 | 7.21E+09 | 0.14 | 18 | 0.42 | 0 | 1 | 3 | 240 | E ELDI | af8bee7b- |
| 137 | 7.31E+09 | 0.16 | 144 | 0.43 | 0 | 1 | 4 | 2629 | BALT | e96afc18- |
| 138 | 7.24E+09 | 0.9 | 592 | 0.9 | 79 | 0 | 0 | 5155 | E PA( | cb808383- |
| 139 | 7.31E+09 | 0.2 | 2 | 0.36 | 0 | 1 | 5 | 3195 | SANT | 8c4271e2- |
| 140 | 7.27E+09 | 0.14 | 328 | 0.3 | 1 | 0 | 5 | 853 | ALAM | 8c442a36- |
| 141 | 7.27E+09 | 0.17 | 432 | 0.34 | 2 | 0 | 22 | 1063 | PACI | 0e166385- |
| 142 | 7.26E+09 | 0.14 | 314 | 0.14 | 0 | 1 | 3 | 723 | LOMA | d2238197- |
| 143 | 7.28E+09 | 0.83 | 483 | 0.83 | | 0 | | 235 | THE I | 4b0943ac- |

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|---|---|---|---|---|---|---|---|---|---|
| 144 | 7.31E+09 | 0.21 | 63 | 0.35 | 0 | 1 | 5 | 1600 W W | 38488e2a- |
| 145 | 7.27E+09 | 0.44 | 428 | 0.44 | 0 | 4 | 18 | 500 W AN/ | 346e796f- |
| 146 | 7.15E+09 | 0.44 | 37 | 1.53 | 28 | 0 | 0 | 3426 LIN( | 1ca73fdc-f |
| 147 | 7.26E+09 | 0.29 | 575 | 0.29 | 0 | 2 | 7 | 4337 E 4TH | 4cf18c30-b |
| 148 | 7.14E+09 | 0.26 | 57 | 0.26 | 0 | 2 | 6 | 3818 LON( | ee61fe8d- |
| 149 | 7.26E+09 | 0.12 | 558 | 0.32 | 0 | 1 | 5 | 670 OHIO . | 9944ff32-b |
| 150 | 7.27E+09 | 0.14 | 431 | 0.28 | 0 | 1 | 5 | 1335 CEDA | 83abbf24- |
| 151 | 7.21E+09 | 0.32 | 175 | 0.5 | 22 | 0 | 0 | 311 W PA( | e9970b34- |
| 152 | 7.13E+09 | 0.17 | 85 | 0.57 | 7 | 0 | 0 | 5234 PACI | 221ea702- |
| 153 | 7.27E+09 | 0.17 | 459 | 0.34 | 3 | 0 | 26 | 325 E 7TH | 8e645e93- |
| 154 | 7.27E+09 | 0.29 | 347 | 0.42 | 0 | 3 | 10 | 1100 MYR | b5edddf1- |
| 155 | 7.21E+09 | 0.46 | 127 | 0.63 | 46 | 0 | 0 | 190 W WII | f6fd4494- |
| 156 | 7.14E+09 | 0.16 | 59 | 0.32 | 0 | 1 | 4 | 323 E BIXB | a1c38904- |
| 157 | 7.13E+09 | 0.23 | 80 | 0.69 | 10 | 0 | 0 | 42 W MOL | 85dbf767- |
| 158 | 7.26E+09 | 0.12 | 578 | 0.36 | 0 | 1 | 3 | 3800 E 4TH | 634aab5a- |
| 159 | 7.26E+09 | 0.14 | 563 | 1.02 | 10 | 0 | 0 | 3222 E 7TH | cac96710- |
| 160 | 7.15E+09 | 0.26 | 44 | 0.26 | 0 | 2 | 6 | | adb15b45- |
| 161 | 7.11E+09 | 0.15 | 634 | 0.4 | 0 | 1 | 4 | 6377 CHEF | bbf86421- |
| 162 | 7.26E+09 | 0.14 | 310 | 0.28 | 0 | 1 | 6 | 915 NEWP | 6b3116e9- |
| 163 | 7.28E+09 | 0.12 | 513 | 0.52 | 2 | 0 | 15 | | c603fe96- |
| 164 | 7.27E+09 | 0.16 | 361 | 0.44 | 0 | 2 | 10 | 1420 LIND | f848b619- |
| 165 | 7.26E+09 | 0.95 | 277 | 1.14 | 65 | 0 | 0 | 3411 E AN | 33fdbb0e- |
| 166 | 7.14E+09 | 0.42 | 109 | 7.1 | 0 | 4 | 17 | | db10e899- |
| 167 | 7.27E+09 | 0.14 | 365 | 0.3 | 0 | 1 | 6 | 1329 ORA | 089292d6- |
| 168 | 7.28E+09 | 2.26 | 468 | 2.57 | 38 | 0 | 346 | | bad7843c- |
| 169 | 7.27E+09 | 0.14 | 426 | 0.4 | 0 | 1 | 6 | 456 W AN/ | f657be98- |
| 170 | 7.25E+09 | 0.17 | 294 | 0.61 | 12 | 0 | 0 | 3800 E AN | 3838239a- |
| 171 | 7.27E+09 | 0.42 | 508 | 0.54 | 6 | 0 | 53 | 901 E 4TH | bfb9d2fd- |
| 172 | 7.21E+09 | 0.41 | 21 | 0.6 | 44 | 0 | 0 | 2995 LON( | 9ee5046a- |
| 173 | 7.27E+09 | 0.17 | 198 | 0.51 | 17 | 0 | 0 | 1602 PACI | d32fdfcd-8 |
| 174 | 7.13E+09 | 0.23 | 100 | 0.95 | 10 | 0 | 0 | 5390 LIND | 0d3d796f- |
| 175 | 7.21E+09 | 0.72 | 170 | 1.29 | 72 | 0 | 0 | 2145 LON( | 75277420- |
| 176 | 7.14E+09 | 0.39 | 49 | 0.39 | 0 | 2 | 10 | 4056 ORAI | 96528e70- |
| 177 | 7.13E+09 | 0.14 | 666 | 0.28 | 0 | 1 | 3 | 135 E MAF | 8cba8cc7- |
| 178 | 7.13E+09 | 0.19 | 642 | 0.45 | 0 | 1 | 5 | 1510 E SO | 38bfc303-a |
| 179 | 7.14E+09 | 0.31 | 48 | 0.88 | 12 | 0 | 0 | 3900 ATLA | 9ce68bde- |
| 180 | 7.2E+09 | 0.35 | 134 | 0.35 | 0 | 2 | 9 | 601 W WII | 8cb06dc8- |
| 181 | 7.21E+09 | 0.15 | 126 | 0.45 | 1 | 0 | 10 | 2632 PACI | d287ef93- |
| 182 | 7.27E+09 | 0.28 | 352 | 0.75 | 28 | 0 | 0 | 1066 ATLA | 9342fa94- |
| 183 | 7.26E+09 | 0.15 | 222 | 0.43 | 0 | 1 | 6 | 1530 GARI | bb84cbbf- |
| 184 | 7.27E+09 | 0.17 | 397 | 0.39 | 0 | 3 | 10 | 1478 ELM | c1c08bdc- |
| 185 | 7.27E+09 | 0.04 | 342 | 0.58 | 0 | 0 | 2 | | 2e17d49a- |
| 186 | 7.27E+09 | 0.17 | 334 | 0.51 | 1 | 0 | 6 | 847 ATLAN | 01c1fe5c- |
| 187 | 7.27E+09 | 0.27 | 195 | 0.44 | 0 | 3 | 10 | 300 W PA( | f1b31b0d- |
| 188 | 7.13E+09 | 0.07 | 72 | 0.4 | 0 | 0 | 2 | 5277 LON( | c5116bf6- |
| 189 | 7.32E+09 | 0.2 | 64 | 0.33 | 0 | 1 | 5 | 2400 W W | 8808feee- |
| 190 | 7.14E+09 | 0.18 | 61 | 0.55 | 7 | 0 | 0 | | 66d56168- |
| 191 | 7.27E+09 | 0.17 | 441 | 0.34 | 3 | 0 | 26 | 1119 LOCI | 0063a50b- |

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|---|---|---|---|---|---|---|---|---|---|
| 192 | 7.27E+09 | 0.14 | 336 | 0.28 | 1 | 0 | 5 | 835 N WA | 48eddca8- |
| 193 | 7.21E+09 | 0.12 | 119 | 0.36 | 0 | 2 | 7 | 544 E 25T | e3f95edd- |
| 194 | 7.11E+09 | 0.52 | 632 | 0.52 | 20 | 0 | 0 | 6465 CHE | 69b93d07- |
| 195 | 7.21E+09 | 0.34 | 241 | 0.57 | 34 | 0 | 0 | 1858 ATLA | a38f6329- |
| 196 | 7.31E+09 | 0.27 | 144 | 0.43 | 0 | 2 | 6 | 1553 W W | e33890b5- |
| 197 | 7.4E+09 | 0.27 | 148 | 0.27 | 0 | 2 | 6 | 1700 W W | dd119ed3- |
| 198 | 7.13E+09 | 0.26 | 663 | 0.26 | 0 | 2 | 6 | 302 E SOU | 86838579- |
| 199 | 7.14E+09 | 2.56 | 109 | 7.1 | 0 | 26 | 102 | | 75f11414- |
| 200 | 7.27E+09 | 0.17 | 420 | 0.34 | 0 | 3 | 10 | 1200 LON | 21109f87- |
| 201 | 7.21E+09 | 0.25 | 131 | 0.54 | 9 | 0 | 0 | 300 W WI | 3987d143- |
| 202 | 7.27E+09 | 0.14 | 206 | 0.28 | 1 | 0 | 10 | 1723 LIND | e5171ce8- |
| 203 | 7.27E+09 | 0.16 | 395 | 0.3 | 0 | 2 | 10 | 1473 ATLA | d0a1a421- |
| 204 | 7.26E+09 | 0.13 | 373 | 0.67 | 9 | 0 | 0 | 1908 E AN | da343f9d- |
| 205 | 7.26E+09 | 0.4 | 262 | 0.4 | 0 | 4 | 16 | 3100 E PA | 31df9ee0- |
| 206 | 7.26E+09 | 0.15 | 553 | 0.29 | 0 | 1 | 5 | 441 NEWP | 2f85d6b5- |
| 207 | 7.31E+09 | 0.15 | 1 | 0.28 | 0 | 1 | 4 | 1718 W SP | 89932762- |
| 208 | 7.24E+09 | 0.39 | 589 | 0.39 | 0 | 2 | 10 | | 5fc79be1- |
| 209 | 7.26E+09 | 0.14 | 583 | 0.29 | 0 | 1 | 3 | 3425 E VIS | 2ba49fcb- |
| 210 | 7.13E+09 | 0.2 | 72 | 0.4 | 0 | 1 | 5 | 5281 LON | 1a1fc77d- |
| 211 | 7.21E+09 | 0.24 | 171 | 3.22 | 24 | 0 | 0 | 2070 LON | 5c62e7b3- |
| 212 | 7.12E+09 | 0.14 | 627 | 0.41 | 0 | 1 | 3 | 1115 E AR | af063838- |
| 213 | 7.14E+09 | 0.26 | 56 | 0.52 | 10 | 0 | 0 | 3832 LON | 92356c48- |
| 214 | 7.27E+09 | 0.16 | 328 | 0.3 | 1 | 0 | 5 | 861 ALAM | 71b661b9- |
| 215 | 7.26E+09 | 0.16 | 561 | 0.32 | 0 | 2 | 6 | 2926 E 7T | e5d78aa0- |
| 216 | 7.13E+09 | 0.13 | 73 | 0.41 | 0 | 1 | 3 | 5278 LON | ae079065- |
| 217 | 7.27E+09 | 0.15 | 350 | 0.3 | 0 | 1 | 6 | 1130 LIME | 2e67b0f6- |
| 218 | 7.12E+09 | 0.33 | 659 | 0.33 | 0 | 2 | 8 | 5925 CHE | 8dda5814- |
| 219 | 7.26E+09 | 0.13 | 285 | 0.53 | 9 | 0 | 0 | 2923 E AN | 518f8645- |
| 220 | 7.26E+09 | 0.33 | 603 | 0.33 | 0 | 2 | 8 | 76 S TERM | 1d87ab7f- |
| 221 | 7.26E+09 | 0.18 | 273 | 0.3 | 0 | 2 | 7 | 3222 E RA | e756e030- |
| 222 | 7.26E+09 | 0.3 | 317 | 0.3 | 0 | 2 | 7 | 2841 E 10 | 6c042519- |
| 223 | 7.26E+09 | 0.15 | 374 | 0.3 | 0 | 1 | 6 | 1134 CHE | c46337d5- |
| 224 | 7.12E+09 | 0.23 | 677 | 0.59 | 16 | 0 | 0 | | b2a5d41e- |
| 225 | 7.24E+09 | 3.84 | 595 | 28.38 | 0 | 38 | 154 | | 8fbf6fb2-c |
| 226 | 7.26E+09 | 0.15 | 272 | 0.31 | 0 | 1 | 6 | 3515 E 15 | ff87fbab-9 |
| 227 | 7.26E+09 | 0.29 | 280 | 0.58 | 20 | 0 | 0 | 1355 RED | 4d69d3f6- |
| 228 | 7.25E+09 | 0.16 | 301 | 0.79 | 11 | 0 | 0 | 4023 E AN | f03b6ace- |
| 229 | 7.26E+09 | 0.14 | 384 | 0.52 | 10 | 0 | 0 | 1731 E AN | 4c41fd3f-e |
| 230 | 7.26E+09 | 0.4 | 373 | 0.67 | 28 | 0 | 0 | 1934 E AN | 409a7ffd-c |
| 231 | 7.15E+09 | 0.39 | 32 | 0.39 | 0 | 4 | 16 | 550 E WA | d9e8b823- |
| 232 | 7.27E+09 | 0.17 | 400 | 0.34 | 1 | 0 | 12 | 1561 ELM | 65b0e720- |
| 233 | 7.26E+09 | 0.14 | 546 | 0.44 | 0 | 1 | 3 | 387 REDO | d93058e1- |
| 234 | 7.21E+09 | 0.14 | 131 | 0.54 | 5 | 0 | 0 | 320 W WI | 7b910ac7- |
| 235 | 7.14E+09 | 0.18 | 61 | 0.55 | 7 | 0 | 0 | | 75d6126b- |
| 236 | 7.27E+09 | 0.29 | 429 | 0.29 | 0 | 3 | 11 | 1300 MAG | a1df7a11- |
| 237 | 7.21E+09 | 0.14 | 246 | 0.28 | 2 | 0 | 13 | 1825 PASA | fbc78028- |
| 238 | 7.21E+09 | 2.65 | 171 | 3.22 | 265 | 0 | 0 | 2000 LON | e8ad7d4a- |
| 239 | 7.21E+09 | 0.33 | 152 | 0.97 | 12 | 0 | 0 | 200 W WI | 13b50699- |

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|---|---|---|---|---|---|---|---|---|---|
| 240 | 7.27E+09 | 0.31 | 406 | 0.61 | 47 | 0 | 0 | 1498 LON( | 1f882ae8- |
| 241 | 7.21E+09 | 0.23 | 117 | 0.58 | 14 | 0 | 0 | 2485 ATLA | 9b2f2d73- |
| 242 | 7.27E+09 | 0.56 | 463 | 1.25 | 95 | 0 | 0 | 621 LOCU | 4d5df14f- |
| 243 | 7.26E+09 | 0.14 | 548 | 0.29 | 0 | 1 | 3 | 375 REDOI | c345b993- |
| 244 | 7.4E+09 | 0.15 | 140 | 0.27 | 0 | 1 | 4 | | dc227a37- |
| 245 | 7.27E+09 | 0.37 | 207 | 1.1 | 43 | 0 | 0 | | bf657e29- |
| 246 | 7.27E+09 | 0.3 | 194 | 0.3 | 3 | 0 | 29 | 110 E PACI | 6d2cd1fa- |
| 247 | 7.27E+09 | 0.51 | 439 | 1.19 | 87 | 0 | 0 | 1090 LON( | 199d328d- |
| 248 | 7.27E+09 | 0.26 | 344 | 0.26 | 1 | 0 | 9 | 900 E 10TI | 13165359- |
| 249 | 7.27E+09 | 0.16 | 527 | 0.31 | 0 | 1 | 4 | 468 ALMO | 7502b3ae- |
| 250 | 7.25E+09 | 1.77 | 308 | 1.77 | 66 | 0 | 0 | 3842 E 10 | 96785eea- |
| 251 | 7.26E+09 | 7.17 | 290 | 7.17 | 0 | 72 | 287 | 3204 E AN | ea1ebdba- |
| 252 | 7.21E+09 | 0.33 | 171 | 3.22 | 33 | 0 | 0 | 2090 LON( | 3969b3a2- |
| 253 | 7.12E+09 | 0.52 | 658 | 0.93 | 36 | 0 | 0 | | ef444560- |
| 254 | 7.13E+09 | 0.72 | 99 | 0.95 | 32 | 0 | 0 | 5361 ATLA | 03f6c071- |
| 255 | 7.27E+09 | 0.18 | 356 | 0.48 | 0 | 2 | 7 | 700 E ANA | a8b08307- |
| 256 | 7.27E+09 | 0.13 | 390 | 0.26 | 0 | 1 | 5 | 1504 ORAI | e8e0175f- |
| 257 | 7.28E+09 | 0.17 | 513 | 0.52 | 2 | 0 | 22 | 417 ATLAI | 526d9936- |
| 258 | 7.27E+09 | 0.26 | 426 | 0.4 | 0 | 3 | 10 | 440 W AN | 9dffba71- |
| 259 | 7.26E+09 | 0.11 | 588 | 0.61 | 4 | 0 | 0 | 238 REDOI | 2e11389f- |
| 260 | 7.13E+09 | 0.31 | 88 | 0.31 | 0 | 2 | 7 | 5140 LON( | fcea94cc- |
| 261 | 7.26E+09 | 0.14 | 389 | 0.28 | 0 | 1 | 6 | 1505 CHEI | 2312e518- |
| 262 | 7.26E+09 | 0.29 | 321 | 0.58 | 20 | 0 | 0 | 1100 FREE | 4040b795- |
| 263 | 7.26E+09 | 0.15 | 261 | 0.3 | 0 | 1 | 6 | | c802e1f6- |
| 264 | 7.27E+09 | 0.17 | 332 | 0.34 | 3 | 0 | 26 | 745 ELM A | 5a4296c5- |
| 265 | 7.27E+09 | 0.17 | 332 | 0.34 | 3 | 0 | 26 | 735 ELM A | b1d2cf00- |
| 266 | 7.26E+09 | 0.15 | 379 | 0.49 | 0 | 1 | 6 | 2021 E AN | 50c0285a- |
| 267 | 7.21E+09 | 0.15 | 247 | 0.3 | 0 | 2 | 9 | 534 E DAY | 81d9089c- |
| 268 | 7.26E+09 | 0.15 | 325 | 0.45 | 0 | 1 | 4 | 1028 JUNI | 4a5a9fd3- |
| 269 | 7.27E+09 | 0.12 | 218 | 0.27 | 0 | 1 | 5 | 1736 CERI | b96f3c7f- |
| 270 | 7.27E+09 | 0.17 | 415 | 0.51 | 26 | 0 | 0 | NO SITUS ( | e5b2e49a- |
| 271 | 7.14E+09 | 0.44 | 47 | 0.44 | 0 | 3 | 10 | 3850 ATLA | b568e832- |
| 272 | 7.13E+09 | 0.26 | 74 | 0.26 | 0 | 2 | 6 | 5301 LON( | 208a5318- |
| 273 | 7.28E+09 | 1.75 | 473 | 1.92 | 298 | 0 | 0 | | 833b94b6- |
| 274 | 7.27E+09 | 0.17 | 342 | 0.58 | 1 | 0 | 6 | | e82154b6- |
| 275 | 7.26E+09 | 0.17 | 384 | 0.52 | 12 | 0 | 0 | 1733 E AN | 4835ca9d- |
| 276 | 7.31E+09 | 0.12 | 142 | 0.27 | 0 | 1 | 3 | 1521 W W | a0f22658- |
| 277 | 7.26E+09 | 0.27 | 289 | 0.27 | 0 | 3 | 10 | 2888 E AN | 9882585a- |
| 278 | 7.21E+09 | 0.12 | 119 | 0.36 | 0 | 2 | 7 | 550 E 25TI | 8e883bc3- |
| 279 | 7.21E+09 | 0.13 | 249 | 0.26 | 1 | 0 | 9 | 340 E 19TI | 1513cb6e- |
| 280 | 7.26E+09 | 0.15 | 557 | 0.3 | 0 | 1 | 4 | 2805 E 4TI | 0815f925- |
| 281 | 7.21E+09 | 0.13 | 251 | 0.26 | 0 | 2 | 7 | 1909 ATLA | 629ed553- |
| 282 | 7.14E+09 | 0.52 | 105 | 4.46 | 36 | 0 | 0 | | 57459fb3- |
| 283 | 7.26E+09 | 0.4 | 281 | 0.4 | 0 | 4 | 14 | 1375 GLAI | b578bccb- |
| 284 | 7.14E+09 | 0.29 | 48 | 0.88 | 11 | 0 | 0 | 3908 ATLA | d94dd839- |
| 285 | 7.21E+09 | 0.14 | 13 | 0.28 | 1 | 0 | 6 | 3144 LON( | 6ead4337- |
| 286 | 7.21E+09 | 0.13 | 251 | 0.26 | 0 | 2 | 7 | 1901 ATLA | a11ed2c9- |
| 287 | 7.15E+09 | 0.14 | 28 | 1.61 | 10 | 0 | 0 | 3385 ATL | 69c2d89c- |

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|---|---|---|---|---|---|---|---|---|---|
| 288 | 7.21E+09 | 0.43 | 170 | 1.29 | 43 | 0 | 0 | 2185 LON( | 6e85f20d- |
| 289 | 7.25E+09 | 0.14 | 312 | 0.28 | 0 | 1 | 3 | 831 EUCLI | 7a351f9b- |
| 290 | 7.21E+09 | 0.18 | 177 | 0.36 | 0 | 3 | 13 | 1875 PACI | dcdd9b39- |
| 291 | 7.12E+09 | 0.35 | 613 | 0.69 | 15 | 0 | 0 | 3430 E AR | 669ad1ae- |
| 292 | 7.27E+09 | 0.15 | 354 | 0.3 | 0 | 1 | 6 | 1220 OLIV | 6bd2d12f- |
| 293 | 7.27E+09 | 0.16 | 348 | 0.32 | 0 | 1 | 6 | 1019 E 11 | 5c7315bc- |
| 294 | 7.26E+09 | 0.14 | 222 | 0.43 | 0 | 1 | 6 | 1536 GARI | 18ad5171- |
| 295 | 7.13E+09 | 0.23 | 83 | 0.23 | 0 | 1 | 6 | 128 W MC | 7dda35ff-f |
| 296 | 7.28E+09 | 0.31 | 500 | 0.31 | 4 | 0 | 39 | 210 ALAM | e172384a- |
| 297 | 7.27E+09 | 0.15 | 394 | 0.3 | 0 | 2 | 9 | 1471 LIND | 5c333e7b- |
| 298 | 7.25E+09 | 0.2 | 275 | 0.87 | 14 | 0 | 0 | 3701 E AN | 2f4456d5- |
| 299 | 7.14E+09 | 0.54 | 111 | 0.54 | 20 | 0 | 0 | 4385 ATLA | 8db51a53- |
| 300 | 7.14E+09 | 0.35 | 108 | 0.35 | 0 | 2 | 9 | 1140 E SA | eb945b57- |
| 301 | 7.27E+09 | 0.17 | 335 | 0.69 | 1 | 0 | 6 | 830 LIME A | c454723e- |
| 302 | 7.27E+09 | 0.34 | 413 | 1.05 | 34 | 0 | 0 | | 2394e646- |
| 303 | 7.27E+09 | 0.17 | 402 | 0.34 | 0 | 2 | 10 | 1550 PACI | 178bdfc7- |
| 304 | 7.28E+09 | 0.26 | 484 | 0.26 | 4 | 0 | 40 | 133 LONG | 65e12574- |
| 305 | 7.28E+09 | 2.9 | 467 | 2.9 | 49 | 0 | 444 | | ce8dad3c- |
| 306 | 7.27E+09 | 0.14 | 206 | 0.28 | 1 | 0 | 10 | 1733 LIND | 829b5ec6- |
| 307 | 7.12E+09 | 5.34 | 615 | 5.34 | 0 | 53 | 214 | 3303 E AR | 7e386c30- |
| 308 | 7.27E+09 | 0.17 | 464 | 0.34 | 3 | 0 | 26 | 701 PINE A | e1eea7af- |
| 309 | 7.27E+09 | 0.07 | 333 | 0.47 | 1 | 0 | 11 | 345 E 8TH | 311ffc11-8 |
| 310 | 7.27E+09 | 0.14 | 435 | 0.31 | 2 | 0 | 18 | 1131 PACI | c72bde62- |
| 311 | 7.21E+09 | 0.17 | 127 | 0.63 | 17 | 0 | 0 | 2572 PACI | 9ee1ceef-b |
| 312 | 7.12E+09 | 0.12 | 613 | 0.69 | 5 | 0 | 0 | | 5b6aebde- |
| 313 | 7.13E+09 | 0.17 | 85 | 0.57 | 7 | 0 | 0 | 5230 PACI | e9d7029f- |
| 314 | 7.21E+09 | 0.26 | 116 | 0.26 | 0 | 2 | 10 | 2403 ATLA | 57f6bea1- |
| 315 | 7.27E+09 | 0.17 | 464 | 0.34 | 3 | 0 | 26 | 711 PINE A | d1bedba5- |
| 316 | 7.14E+09 | 0.15 | 60 | 0.46 | 0 | 1 | 4 | 3642 LOCI | 9a8e6b71- |
| 317 | 7.12E+09 | 0.25 | 678 | 1.19 | 17 | 0 | 0 | 6821 CHEI | 5c56a354- |
| 318 | 7.21E+09 | 0.44 | 179 | 0.44 | 5 | 0 | 43 | 1840 LON( | 210d1b8d- |
| 319 | 7.27E+09 | 0.17 | 402 | 0.34 | 0 | 2 | 10 | 1548 PACI | 99635c9f- |
| 320 | 7.27E+09 | 0.15 | 213 | 0.3 | 0 | 1 | 6 | 1783 LEM( | 2ef45f23-1 |
| 321 | 7.31E+09 | 0.31 | 670 | 0.31 | 0 | 2 | 7 | 6172 LON( | f02c4d55- |
| 322 | 7.24E+09 | 6.17 | 600 | 6.17 | 0 | 37 | 148 | 6500 E PA( | 315e8937- |
| 323 | 7.26E+09 | 0.27 | 556 | 0.4 | 0 | 2 | 6 | 2741 E 4TI | f5a16921- |
| 324 | 7.15E+09 | 0.62 | 40 | 0.62 | 39 | 0 | 0 | 3515 LIND | e849e2c8- |
| 325 | 7.27E+09 | 0.15 | 526 | 0.28 | 2 | 0 | 19 | 1001 E 5TI | b8bc468b- |
| 326 | 7.26E+09 | 0.14 | 584 | 0.28 | 0 | 1 | 3 | 269 REDOI | 305428fb- |
| 327 | 7.27E+09 | 0.15 | 205 | 0.3 | 1 | 0 | 10 | 345 E 17TI | bfbb9126- |
| 328 | 7.26E+09 | 0.3 | 286 | 0.58 | 21 | 0 | 0 | 3102 E AN | 38948e61- |
| 329 | 7.14E+09 | 0.28 | 114 | 0.28 | 0 | 2 | 6 | 4101 ATLA | 93fff6e0-d |
| 330 | 7.21E+09 | 0.14 | 18 | 0.42 | 0 | 1 | 3 | 220 E ELDI | 2f666405- |
| 331 | 7.15E+09 | 0.3 | 31 | 0.68 | 21 | 0 | 0 | 3429 ELM | 1269d887- |
| 332 | 7.21E+09 | 0.14 | 125 | 0.29 | 1 | 0 | 4 | 2830 PACI | a5c72ef1- |
| 333 | 7.15E+09 | 3.7 | 94 | 4.2 | 254 | 0 | 0 | 4700 CHEI | d5d8bf1d- |
| 334 | 7.27E+09 | 0.17 | 519 | 0.34 | 2 | 0 | 22 | 623 E 7TH | 90a7e222- |
| 335 | 7.26E+09 | 0.35 | 376 | 0.35 | 0 | 3 | 14 | 2436 E AN | 4b8d444a- |

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|---|---|---|---|---|---|---|---|---|---|
| 336 | 7.26E+09 | 0.17 | 585 | 0.28 | 0 | 1 | 4 | 3131 E CO | dbb804b4- |
| 337 | 7.27E+09 | 0.29 | 451 | 0.59 | 5 | 0 | 44 | 918 LONG | 57befb40- |
| 338 | 7.3E+09 | 0.06 | 675 | 0.59 | 2 | 0 | 0 | 6880 LON( | 5281c61e- |
| 339 | 7.26E+09 | 0.16 | 561 | 0.32 | 0 | 2 | 6 | 2918 E 7TH | fc3930cd-4 |
| 340 | 7.31E+09 | 0.27 | 138 | 0.27 | 0 | 2 | 6 | 1395 W W | 812919c6- |
| 341 | 7.27E+09 | 0.13 | 358 | 0.42 | 0 | 2 | 7 | 556 E ANA | 75709e05- |
| 342 | 7.25E+09 | 0.13 | 307 | 0.26 | 0 | 1 | 3 | 825 MIRA | 12508720- |
| 343 | 7.27E+09 | 0.31 | 414 | 0.31 | 3 | 0 | 30 | 1310 PINE | a237afd7-7 |
| 344 | 7.13E+09 | 0.32 | 669 | 0.32 | 0 | 2 | 8 | 5425 LON( | a28072c0- |
| 345 | 7.13E+09 | 0.23 | 80 | 0.69 | 10 | 0 | 0 | 47 W 52NI | 473f7cfb-7 |
| 346 | 7.26E+09 | 0.14 | 222 | 0.43 | 0 | 1 | 6 | 1535 CHEF | 99f470d8- |
| 347 | 7.25E+09 | 0.21 | 300 | 0.45 | 0 | 2 | 8 | 3925 E AN | e5ff372b-4 |
| 348 | 7.15E+09 | 0.19 | 27 | 0.38 | 0 | 2 | 8 | | 2a6ffcee-0 |
| 349 | 7.28E+09 | 0.34 | 472 | 0.51 | 3 | 0 | 26 | | 514e281f- |
| 350 | 7.26E+09 | 0.95 | 282 | 0.95 | 59 | 0 | 0 | 2701 E AN | 6a9cc309-7 |
| 351 | 7.27E+09 | 0.14 | 406 | 0.61 | 21 | 0 | 0 | 1476 LON( | 99c3ba44- |
| 352 | 7.27E+09 | 0.17 | 529 | 0.34 | 0 | 1 | 4 | 572 NEBR/ | 099e8928- |
| 353 | 7.27E+09 | 0.17 | 419 | 0.34 | 0 | 3 | 10 | 1226 LON( | 016f13ae- |
| 354 | 7.26E+09 | 0.15 | 542 | 0.3 | 0 | 1 | 4 | 392 ORIZA | 3ef63707- |
| 355 | 7.27E+09 | 0.17 | 434 | 0.34 | 3 | 0 | 26 | 1101 PINE | 0f00605e- |
| 356 | 7.21E+09 | 0.18 | 177 | 0.36 | 0 | 3 | 13 | 1887 PACI | ee1f3369- |
| 357 | 7.27E+09 | 0.13 | 526 | 0.28 | 2 | 0 | 16 | 1011 E 5TH | c3d5cbdc- |
| 358 | 7.21E+09 | 0.51 | 128 | 0.51 | 19 | 0 | 0 | 2627 PACI | 6dd44193- |
| 359 | 7.27E+09 | 0.17 | 521 | 0.34 | 2 | 0 | 22 | 625 E 6TH | 9f01d589- |
| 360 | 7.27E+09 | 0.17 | 434 | 0.34 | 3 | 0 | 26 | 1057 PINE | 440393fe- |
| 361 | 7.27E+09 | 0.17 | 413 | 1.05 | 26 | 0 | 0 | 133 W AN/ | b955d27d- |
| 362 | 7.26E+09 | 0.12 | 586 | 0.27 | 0 | 1 | 3 | 3215 E BR( | ad8253e7- |
| 363 | 7.21E+09 | 0.24 | 165 | 0.73 | 24 | 0 | 0 | 2330 LON( | afaef8d0-a |
| 364 | 7.27E+09 | 0.51 | 446 | 0.68 | 9 | 0 | 78 | 1034 LOCI | 5a45437d- |
| 365 | 7.14E+09 | 0.19 | 51 | 0.93 | 7 | 0 | 0 | 4019 ATLA | ecc9975b- |
| 366 | 7.13E+09 | 0.28 | 73 | 0.41 | 0 | 2 | 6 | 5284 LON( | 9999ccfd-e |
| 367 | 7.27E+09 | 0.29 | 449 | 0.46 | 5 | 0 | 44 | 928 LONG | fc8691cd-1 |
| 368 | 7.28E+09 | 0.23 | 490 | 0.35 | 0 | 2 | 8 | 245 CHERF | a6f1dfd6-7 |
| 369 | 7.27E+09 | 0.15 | 527 | 0.31 | 0 | 1 | 4 | 515 NEBR/ | 6c42eefd- |
| 370 | 7.14E+09 | 0.15 | 53 | 0.29 | 0 | 1 | 4 | 4017 LON( | 6d4fd821- |
| 371 | 7.16E+09 | 0.96 | 643 | 20.77 | 0 | 10 | 38 | 5540 CHEF | 02b9d8c0- |
| 372 | 7.2E+09 | 0.42 | 174 | 0.42 | 0 | 3 | 10 | 623 W PA( | e57d7cdb- |
| 373 | 7.27E+09 | 0.3 | 371 | 0.3 | 0 | 3 | 11 | 1217 ALAI | f9ddbd0c- |
| 374 | 7.21E+09 | 0.35 | 244 | 0.48 | 4 | 0 | 34 | 595 E PACI | 6b4069d2- |
| 375 | 7.3E+09 | 0.23 | 675 | 0.59 | 9 | 0 | 0 | 6850 LON( | 5ef900eb- |
| 376 | 7.27E+09 | 0.34 | 450 | 0.91 | 6 | 0 | 52 | 915 LONG | 84dd14c7- |
| 377 | 7.25E+09 | 0.67 | 275 | 0.87 | 29 | 0 | 0 | 3655 E AN | 27ca31cd- |
| 378 | 7.12E+09 | 0.46 | 639 | 0.46 | 0 | 3 | 11 | 6242 CHEF | 00124c17- |
| 379 | 7.26E+09 | 0.15 | 555 | 0.3 | 0 | 1 | 4 | 2919 E 4TH | ee2c8b60- |
| 380 | 7.14E+09 | 0.28 | 106 | 0.81 | 11 | 0 | 0 | 1145 E SAI | c721e30a- |
| 381 | 7.28E+09 | 0.13 | 505 | 0.27 | 0 | 1 | 5 | 332 CERRI | 8eff2781-7 |
| 382 | 7.27E+09 | 0.22 | 397 | 0.39 | 0 | 3 | 14 | 1484 ELM | 1d2fccec-2 |
| 383 | 7.27E+09 | 0.12 | 488 | 0.31 | 0 | 1 | 4 | 27 CERRIT( | 19b7e6df- |

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|---|---|---|---|---|---|---|---|---|---|---|
| 384 | 7.21E+09 | 0.16 | 182 | 0.89 | 20 | 0 | 0 | 1832 | PACI | 70661f28- |
| 385 | 7.15E+09 | 0.38 | 31 | 0.68 | 26 | 0 | 0 | 433 | E WAI | 830a0428- |
| 386 | 7.27E+09 | 0.14 | 436 | 0.31 | 2 | 0 | 22 | 1145 | LOCI | 30e5287b- |
| 387 | 7.21E+09 | 1.06 | 12 | 2.35 | 73 | 0 | 0 | 3200 | LON( | 01939cdf-1 |
| 388 | 7.26E+09 | 0.19 | 257 | 0.38 | 0 | 2 | 7 | 1771 | LOM | 17b095aa- |
| 389 | 7.13E+09 | 0.28 | 89 | 0.54 | 11 | 0 | 0 | 5170 | LON( | abe701ac- |
| 390 | 7.27E+09 | 0.16 | 396 | 0.29 | 0 | 2 | 10 | 1491 | ATLA | 3e347348- |
| 391 | 7.27E+09 | 0.18 | 463 | 1.25 | 31 | 0 | 0 | 635 | LOCU | 982e3087- |
| 392 | 7.2E+09 | 0.31 | 5 | 0.31 | 0 | 4 | 18 | 3401 | PACI | b9629f32- |
| 393 | 7.15E+09 | 0.5 | 34 | 1.16 | 34 | 0 | 0 | 3402 | ATLA | 1ed7e057- |
| 394 | 7.28E+09 | 0.17 | 516 | 0.34 | 2 | 0 | 22 | 509 | E 5TH | 1f0f0000-( |
| 395 | 7.32E+09 | 0.27 | 66 | 0.27 | 0 | 2 | 6 | 3631 | SANT | 5e6c1745- |
| 396 | 7.28E+09 | 0.17 | 515 | 0.34 | 2 | 0 | 22 | 425 | E 5TH | f797c74c-7 |
| 397 | 7.27E+09 | 0.17 | 435 | 0.31 | 2 | 0 | 22 | 1121 | PACI | 4fec930d-( |
| 398 | 7.27E+09 | 0.14 | 431 | 0.28 | 0 | 1 | 5 | 1339 | CEDA | 526601c0- |
| 399 | 7.24E+09 | 0.74 | 590 | 0.74 | 28 | 0 | 0 | 5201 | E PA( | 8492e117- |
| 400 | 7.27E+09 | 0.13 | 188 | 0.41 | 1 | 0 | 13 | 1750 | LON( | ebccbebc-( |
| 401 | 7.27E+09 | 0.16 | 528 | 0.48 | 0 | 1 | 4 | 525 | NEBR/ | 301e87bf-( |
| 402 | 7.27E+09 | 0.15 | 353 | 0.3 | 0 | 1 | 6 | 1125 | MYR | b98e5548- |
| 403 | 7.15E+09 | 0.48 | 34 | 1.16 | 18 | 0 | 0 | 675 | E WAI | 47e5355f-( |
| 404 | 7.27E+09 | 0.17 | 453 | 0.51 | 3 | 0 | 26 | 920 | PACIFI | 06256853- |
| 405 | 7.25E+09 | 0.25 | 298 | 0.25 | 0 | 2 | 10 | 3942 | E AN | a25b7f66-( |
| 406 | 7.27E+09 | 0.32 | 386 | 0.46 | 0 | 3 | 13 | 1569 | E AN | 653e5a2c- |
| 407 | 7.21E+09 | 0.15 | 16 | 0.81 | 10 | 0 | 0 | 3061 | LON( | 6eb453be- |
| 408 | 7.27E+09 | 0.17 | 360 | 1.01 | 26 | 0 | 0 | 541 | E ANA | 0a5b8edc- |
| 409 | 7.26E+09 | 0.12 | 273 | 0.3 | 0 | 1 | 5 | 1520 | OBIS | 588806f6-1 |
| 410 | 7.14E+09 | 0.26 | 56 | 0.52 | 10 | 0 | 0 | 3834 | LON( | 8e0c06bc- |
| 411 | 7.21E+09 | 0.2 | 178 | 0.3 | 2 | 0 | 20 | | | 6faf280e-8 |
| 412 | 7.26E+09 | 0.15 | 283 | 0.87 | 9 | 0 | 0 | 1336 | MOL | 5b2c509f-3 |
| 413 | 7.28E+09 | 0.15 | 496 | 0.41 | 2 | 0 | 19 | 125 | LINDE | f1a80bda-l |
| 414 | 7.21E+09 | 0.14 | 253 | 0.28 | 1 | 0 | 9 | 344 | E 20TH | aa824980- |
| 415 | 7.14E+09 | 0.19 | 8 | 0.56 | 7 | 0 | 0 | | | 77a07d81- |
| 416 | 7.15E+09 | 0.22 | 35 | 0.48 | 0 | 1 | 6 | 3416 | ORAI | 56c0b1ab- |
| 417 | 7.16E+09 | 0.9 | 641 | 0.9 | 62 | 0 | 0 | 2440 | E SO | 17fe7b89-( |
| 418 | 7.14E+09 | 1.82 | 109 | 7.1 | 0 | 18 | 73 | | | 29b35e4b- |
| 419 | 7.26E+09 | 0.14 | 606 | 0.46 | 0 | 1 | 3 | 212 | LOMA | cc73cd0d-9 |
| 420 | 7.21E+09 | 0.14 | 17 | 0.42 | 0 | 1 | 3 | 114 | E 31ST | e3dafc14-( |
| 421 | 7.15E+09 | 0.3 | 39 | 0.59 | 19 | 0 | 0 | 3516 | LIND | 832c1f8c-9 |
| 422 | 7.24E+09 | 18.18 | 595 | 28.38 | 0 | 182 | 727 | 6411 | E PA( | 38e2b510- |
| 423 | 7.26E+09 | 0.14 | 580 | 0.28 | 0 | 1 | 3 | 317 | REDOI | 1fea8eae-8 |
| 424 | 7.26E+09 | 0.17 | 563 | 1.02 | 7 | 0 | 0 | 675 | CORO | 8c60298d- |
| 425 | 7.21E+09 | 0.12 | 152 | 0.97 | 5 | 0 | 0 | 2545 | PACI | f8721d88- |
| 426 | 7.27E+09 | 0.34 | 340 | 0.34 | 1 | 0 | 13 | 999 | ATLAI | e90db3db- |
| 427 | 7.15E+09 | 0.59 | 30 | 0.78 | 39 | 0 | 0 | 500 | E WAI | 6e60e4b5- |
| 428 | 7.21E+09 | 0.13 | 156 | 0.28 | 1 | 0 | 8 | 2491 | LON( | 0ff1ca28-c |
| 429 | 7.27E+09 | 0.15 | 356 | 0.48 | 0 | 1 | 6 | 1218 | LIME | b231dbb8- |
| 430 | 7.21E+09 | 0.14 | 253 | 0.28 | 1 | 0 | 9 | 408 | E 20TH | 756ef13b-( |
| 431 | 7.31E+09 | 0.36 | 62 | 0.38 | 0 | 2 | 9 | 3640 | SANT | e7b63cb1- |

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|---|---|---|---|---|---|---|---|---|---|---|
| 432 | 7.27E+09 | 0.19 | 458 | 0.71 | 3 | 0 | 29 | 729 | LONG | c138b196- |
| 433 | 7.28E+09 | 0.2 | 494 | 0.32 | 3 | 0 | 25 | 401 | E 1ST | dd6e7777- |
| 434 | 7.27E+09 | 0.15 | 322 | 0.3 | 0 | 1 | 6 | 935 | CHERI | d51542e9- |
| 435 | 7.24E+09 | 0.16 | 297 | 0.42 | 0 | 1 | 4 | 1201 | PAR | c3915d90- |
| 436 | 7.27E+09 | 0.15 | 323 | 0.3 | 0 | 1 | 6 | 1035 | CHEI | 3d6e7ca7- |
| 437 | 7.27E+09 | 0.14 | 204 | 0.28 | 1 | 0 | 10 | 415 | E 16TI | 426a2586- |
| 438 | 7.27E+09 | 0.17 | 198 | 0.51 | 17 | 0 | 0 | 1618 | PACI | 00214ffc-1 |
| 439 | 7.26E+09 | 0.28 | 288 | 0.28 | 0 | 3 | 11 | 2700 | E AN | d545ce43- |
| 440 | 7.13E+09 | 0.07 | 75 | 0.52 | 3 | 0 | 0 | 5340 | LON | accd1d5d- |
| 441 | 7.27E+09 | 0.15 | 219 | 0.3 | 0 | 1 | 6 | 1234 | E EST | 61f03a03- |
| 442 | 7.27E+09 | 0.12 | 392 | 0.38 | 0 | 1 | 4 | 1403 | ORAI | 07c1bb23- |
| 443 | 7.21E+09 | 0.18 | 175 | 0.5 | 12 | 0 | 0 | 321 | W PA | 21da347e- |
| 444 | 7.27E+09 | 0.16 | 369 | 0.64 | 11 | 0 | 0 | 1006 | E AN | 6fc1c056- |
| 445 | 0 | 0.17 | 474 | 0.48 | 3 | 0 | 26 | 125 | W 3RI | c0544c17- |
| 446 | 7.27E+09 | 0.19 | 488 | 0.31 | 0 | 2 | 7 | 1054 | E 1ST | 4e719a5b- |
| 447 | 7.21E+09 | 0.14 | 246 | 0.28 | 2 | 0 | 13 | 1819 | PASA | 1ae110de- |
| 448 | 7.28E+09 | 0.4 | 539 | 0.4 | 0 | 2 | 10 | 1800 | E 4TI | 8bb076a9- |
| 449 | 7.25E+09 | 0.52 | 267 | 0.52 | 52 | 0 | 0 | | | 4f358c6b- |
| 450 | 7.14E+09 | 0.73 | 45 | 0.73 | 27 | 0 | 0 | 3804 | ATLA | e063d6eb- |
| 451 | 7.26E+09 | 0.29 | 321 | 0.58 | 20 | 0 | 0 | 1116 | FREE | e15596b1- |
| 452 | 7.27E+09 | 0.18 | 339 | 0.79 | 1 | 0 | 6 | 920 | LINDE | 1842c841- |
| 453 | 7.27E+09 | 0.13 | 209 | 0.26 | 1 | 0 | 13 | 530 | E PACI | 2ae7e8b6- |
| 454 | 7.27E+09 | 0.13 | 451 | 0.59 | 2 | 0 | 20 | 327 | E 9TH | 7f4d23c3- |
| 455 | 7.26E+09 | 0.15 | 293 | 0.63 | 10 | 0 | 0 | 3512 | E AN | d7359b53- |
| 456 | 7.27E+09 | 0.17 | 438 | 0.8 | 17 | 0 | 0 | 1053 | ELM | c4bab712- |
| 457 | 7.26E+09 | 0.16 | 606 | 0.46 | 0 | 1 | 4 | 214 | LOMA | 74d3d3e7- |
| 458 | 7.24E+09 | 0.14 | 297 | 0.42 | 0 | 1 | 3 | 1215 | PAR | d5061c28- |
| 459 | 7.21E+09 | 0.19 | 21 | 0.6 | 20 | 0 | 0 | | | 0866afb5- |
| 460 | 7.27E+09 | 0.13 | 396 | 0.29 | 0 | 2 | 7 | 1487 | ATLA | 025c3d1c- |
| 461 | 7.26E+09 | 0.14 | 584 | 0.28 | 0 | 1 | 3 | 271 | REDOI | 44694fd3- |
| 462 | 7.15E+09 | 0.54 | 28 | 1.61 | 37 | 0 | 0 | 3301 | ATLA | 2a316983- |
| 463 | 7.21E+09 | 0.06 | 120 | 0.33 | 0 | 1 | 5 | 560 | E VERI | a58907d2- |
| 464 | 7.4E+09 | 0.37 | 141 | 0.37 | 0 | 2 | 9 | 2594 | SANT | e397c35d- |
| 465 | 7.27E+09 | 0.17 | 529 | 0.34 | 0 | 1 | 4 | 564 | NEBR/ | 911064cc- |
| 466 | 7.27E+09 | 0.17 | 450 | 0.91 | 3 | 0 | 26 | 927 | LONG | d67dcfc2- |
| 467 | 7.27E+09 | 0.15 | 407 | 0.32 | 2 | 0 | 14 | 1487 | ELM | f90ed9a7- |
| 468 | 7.26E+09 | 0.13 | 284 | 0.66 | 9 | 0 | 0 | 2809 | E AN | 2448b22d- |
| 469 | 7.27E+09 | 0.15 | 207 | 1.1 | 23 | 0 | 0 | 343 | E ESTI | c9490172- |
| 470 | 7.28E+09 | 0.06 | 476 | 0.35 | 1 | 0 | 9 | 324 | MAGN | 1008177c- |
| 471 | 7.27E+09 | 0.19 | 346 | 0.37 | 0 | 2 | 7 | 1054 | ALAN | 8da35b9e- |
| 472 | 7.27E+09 | 0.12 | 210 | 0.36 | 0 | 2 | 7 | | | 359b5d7c- |
| 473 | 7.21E+09 | 0.15 | 155 | 0.3 | 0 | 2 | 9 | 233 | E 25TI | c2bf1b6b- |
| 474 | 7.27E+09 | 0.15 | 357 | 0.3 | 0 | 1 | 6 | | | 2dc0378a- |
| 475 | 7.11E+09 | 0.11 | 628 | 2.44 | 4 | 0 | 0 | 1221 | E AR | a84e14b5- |
| 476 | 7.13E+09 | 0.26 | 89 | 0.54 | 10 | 0 | 0 | 5190 | LON | b3af0dc7- |
| 477 | 7.27E+09 | 0.32 | 200 | 1.42 | 34 | 0 | 0 | 1647 | LON | 4ddf3ede- |
| 478 | 7.21E+09 | 0.11 | 121 | 0.54 | 17 | 0 | 0 | | | 5f67e7d4- |
| 479 | 7.21E+09 | 0.14 | 245 | 0.42 | 0 | 2 | 8 | 1824 | PASA | 44a5edbc- |

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|---|---|---|---|---|---|---|---|---|---|
| 480 | 7.27E+09 | 0.14 | 349 | 0.29 | 0 | 1 | 5 | | b5e5cb89- |
| 481 | 7.21E+09 | 0.26 | 161 | 0.43 | 0 | 2 | 6 | 2400 PACI | 2baf28e9- |
| 482 | 7.27E+09 | 0.28 | 190 | 0.28 | 2 | 0 | 19 | 1722 LOCU | f61592bf- |
| 483 | 7.26E+09 | 0.13 | 602 | 0.39 | 0 | 1 | 3 | 65 GRAND | c6c3250c- |
| 484 | 7.27E+09 | 0.26 | 493 | 0.26 | 0 | 3 | 10 | 1100 E BR | 27f29128- |
| 485 | 7.14E+09 | 0.19 | 8 | 0.56 | 7 | 0 | 0 | 3500 LOCU | a481f6a0- |
| 486 | 7.27E+09 | 0.21 | 363 | 0.33 | 0 | 2 | 8 | 1111 E AN | d91bef8e- |
| 487 | 7.27E+09 | 0.12 | 405 | 0.42 | 0 | 2 | 7 | 1470 PINE | 14ffd4f4-b |
| 488 | 7.21E+09 | 0.79 | 162 | 0.79 | 83 | 0 | 0 | 2400 LON | 46dfc3d8- |
| 489 | 7.26E+09 | 0.12 | 578 | 0.36 | 0 | 1 | 3 | 386 GRAN | 0ec3fa14- |
| 490 | 7.12E+09 | 0.12 | 607 | 0.83 | 5 | 0 | 0 | 6542 N PA | 8817a486- |
| 491 | 7.3E+09 | 0.06 | 675 | 0.59 | 2 | 0 | 0 | | 741d0c11- |
| 492 | 7.26E+09 | 0.15 | 287 | 0.63 | 10 | 0 | 0 | 2916 E AN | bed14764- |
| 493 | 7.26E+09 | 0.16 | 605 | 0.47 | 0 | 1 | 5 | 221 EUCLI | 2bb25a09- |
| 494 | 7.22E+09 | 0.41 | 235 | 0.41 | 0 | 4 | 16 | 1843 E PA | e78ea881- |
| 495 | 7.12E+09 | 0.6 | 676 | 0.6 | 41 | 0 | 0 | 6935 ATLA | 9f83b077- |
| 496 | 7.27E+09 | 0.16 | 369 | 0.64 | 11 | 0 | 0 | 1020 E AN | d1f6b84d- |
| 497 | 7.13E+09 | 0.38 | 69 | 0.38 | 0 | 4 | 15 | 4200 LON | 78906a52- |
| 498 | 7.26E+09 | 0.16 | 278 | 0.91 | 11 | 0 | 0 | 1325 REDC | dcfebd74- |
| 499 | 7.12E+09 | 0.15 | 617 | 0.44 | 0 | 1 | 6 | 6681 COR | d4d176c2- |
| 500 | 7.26E+09 | 0.12 | 563 | 1.02 | 8 | 0 | 0 | 3250 E 7TH | c8b0787a- |
| 501 | 7.21E+09 | 0.7 | 22 | 0.85 | 74 | 0 | 0 | 2901 LON | 169e009d- |
| 502 | 7.27E+09 | 0.15 | 349 | 0.29 | 0 | 1 | 6 | 1127 OLIV | 4235ff13- |
| 503 | 7.28E+09 | 0.52 | 495 | 0.52 | 9 | 0 | 79 | | d2bddaa1- |
| 504 | 7.28E+09 | 0.26 | 496 | 0.41 | 4 | 0 | 32 | 135 LINDE | efd87afc-2 |
| 505 | 7.27E+09 | 0.14 | 207 | 1.1 | 21 | 0 | 0 | 402 E PACI | c184858c- |
| 506 | 7.13E+09 | 0.29 | 652 | 0.29 | 0 | 2 | 7 | 5738 ATLA | 7026986d- |
| 507 | 7.26E+09 | 0.29 | 258 | 0.29 | 0 | 3 | 11 | 1719 REDC | 44cda116- |
| 508 | 7.14E+09 | 0.3 | 109 | 7.1 | 0 | 3 | 12 | | b28bc321- |
| 509 | 7.13E+09 | 0.33 | 98 | 0.33 | 0 | 2 | 8 | 5205 ATLA | eeb0f167- |
| 510 | 7.27E+09 | 0.15 | 214 | 0.3 | 0 | 1 | 6 | 1776 CERR | 0d2d2c0d- |
| 511 | 7.27E+09 | 0.17 | 337 | 0.34 | 1 | 0 | 6 | 851 OLIVE | 00843d8c- |
| 512 | 7.27E+09 | 0.74 | 211 | 0.74 | 74 | 0 | 0 | | a7cceb33- |
| 513 | 7.21E+09 | 0.23 | 241 | 0.57 | 23 | 0 | 0 | 1870 ATLA | 7586b8aa- |
| 514 | 7.27E+09 | 0.17 | 417 | 1.13 | 26 | 0 | 0 | 1335 LON | be215e95- |
| 515 | 7.21E+09 | 0.13 | 124 | 0.25 | 1 | 0 | 13 | 2666 ELM | 4d96a860- |
| 516 | 7.31E+09 | 0.33 | 143 | 0.33 | 0 | 2 | 8 | 1517 W W | 5dfec1cd- |
| 517 | 7.15E+09 | 0.9 | 25 | 0.9 | 34 | 0 | 0 | 3431 CHE | f369ce51- |
| 518 | 7.21E+09 | 0.15 | 155 | 0.3 | 0 | 2 | 9 | 227 E 25TH | bfb83272- |
| 519 | 7.14E+09 | 0.38 | 46 | 0.38 | 0 | 2 | 9 | 3839 ATLA | c0d46929- |
| 520 | 7.26E+09 | 0.74 | 534 | 0.74 | 55 | 0 | 0 | 600 DAWS | 4c5d417b- |
| 521 | 7.4E+09 | 0.34 | 150 | 0.34 | 0 | 2 | 8 | 2380 SANT | 6bbeb037- |
| 522 | 7.21E+09 | 0.14 | 243 | 0.83 | 21 | 0 | 0 | 533 E PACI | ebad8d3e- |
| 523 | 7.21E+09 | 0.14 | 118 | 0.73 | 21 | 0 | 0 | 2556 ATLA | 867cb7a3- |
| 524 | 7.13E+09 | 0.33 | 76 | 0.33 | 0 | 2 | 8 | 12 W PLYM | 6b3029f2- |
| 525 | 7.27E+09 | 0.15 | 351 | 0.3 | 0 | 1 | 6 | 1069 MYR | 9c618197- |
| 526 | 7.27E+09 | 0.14 | 204 | 0.28 | 1 | 0 | 10 | 419 E 16TH | b281e3f2- |
| 527 | 7.27E+09 | 0.36 | 454 | 0.36 | 6 | 0 | 55 | 714 PINE A | b2f8f23e- |

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|---|---|---|---|---|---|---|---|---|---|
| 528 | 7.12E+09 | 0.02 | 611 | 0.27 | 0 | 0 | 1 | | 63a21e26- |
| 529 | 7.27E+09 | 0.15 | 438 | 0.8 | 15 | 0 | 0 | 1077 ELM | e0a49d7d- |
| 530 | 7.27E+09 | 0.33 | 413 | 1.05 | 33 | 0 | 0 | | 29b06559- |
| 531 | 7.21E+09 | 0.47 | 183 | 1.02 | 59 | 0 | 0 | 201 W PA( | 0416a2da- |
| 532 | 7.14E+09 | 0.28 | 48 | 0.88 | 11 | 0 | 0 | 3918 ATLA | 925b9cad- |
| 533 | 7.11E+09 | 0.35 | 620 | 0.35 | 0 | 2 | 9 | 1600 E AR | e4ff67da-f |
| 534 | 7.21E+09 | 0.23 | 12 | 2.35 | 16 | 0 | 0 | 3250 LON( | 90d81de7- |
| 535 | 7.26E+09 | 0.13 | 274 | 0.39 | 0 | 1 | 5 | 1466 REDC | bb321c0b- |
| 536 | 7.28E+09 | 0.26 | 506 | 0.26 | 4 | 0 | 32 | 1030 E 4TH | 9317496e- |
| 537 | 7.27E+09 | 0.17 | 453 | 0.51 | 3 | 0 | 26 | 906 PACIFI | 99105926- |
| 538 | 7.26E+09 | 0.15 | 555 | 0.3 | 0 | 1 | 4 | 2909 E 4TH | b9d2a728- |
| 539 | 7.27E+09 | 0.17 | 334 | 0.51 | 1 | 0 | 6 | 835 ATLAN | 69ac865a- |
| 540 | 7.21E+09 | 0.15 | 19 | 0.45 | 1 | 0 | 6 | 3039 LON( | c38b9074- |
| 541 | 7.27E+09 | 0.15 | 393 | 0.3 | 0 | 2 | 9 | 1415 LIND | f2778eee-( |
| 542 | 7.21E+09 | 0.34 | 169 | 0.85 | 34 | 0 | 0 | 2160 LON( | 7b30081e- |
| 543 | 7.27E+09 | 0.17 | 447 | 0.53 | 3 | 0 | 26 | 930 PACIFI | bdda6560- |
| 544 | 7.24E+09 | 0.87 | 595 | 28.38 | 0 | 5 | 21 | 6695 E PA( | ad894061- |
| 545 | 7.26E+09 | 0.32 | 560 | 0.32 | 0 | 3 | 13 | 2801 E 7TH | 8356f7d8-( |
| 546 | 7.32E+09 | 0.29 | 65 | 0.82 | 11 | 0 | 0 | 3665 SANT | 9e8b6c35- |
| 547 | 7.21E+09 | 0.14 | 166 | 0.43 | 1 | 0 | 9 | 2250 LON( | abf625b5-( |
| 548 | 7.15E+09 | 0.22 | 36 | 0.44 | 0 | 1 | 6 | 1069 E WA | 01e88a33- |
| 549 | 7.15E+09 | 0.18 | 34 | 1.16 | 7 | 0 | 0 | | a6a27b99- |
| 550 | 7.27E+09 | 0.17 | 457 | 0.36 | 3 | 0 | 26 | 810 PINE A | d71710b0- |
| 551 | 7.26E+09 | 0.14 | 286 | 0.58 | 10 | 0 | 0 | 1220 FREE | b8f44576- |
| 552 | 7.27E+09 | 0.05 | 342 | 0.58 | 0 | 0 | 2 | | d945d069- |
| 553 | 7.27E+09 | 0.48 | 193 | 0.65 | 72 | 0 | 0 | 124 W PA( | 545d6101- |
| 554 | 7.13E+09 | 0.1 | 648 | 0.4 | 0 | 1 | 2 | | 51526bd2- |
| 555 | 7.12E+09 | 0.52 | 655 | 0.52 | 36 | 0 | 0 | 1201 E SO | 9af8ec0f-2 |
| 556 | 7.26E+09 | 0.15 | 309 | 0.3 | 0 | 1 | 4 | 909 LOMA | c7e8dee2- |
| 557 | 7.26E+09 | 0.19 | 587 | 0.39 | 0 | 1 | 5 | 230 REDO | 7b4042c9- |
| 558 | 7.26E+09 | 0.12 | 225 | 0.38 | 0 | 1 | 5 | 1770 STAN | 29141fa5-( |
| 559 | 7.21E+09 | 0.13 | 167 | 0.26 | 1 | 0 | 8 | 2246 LOCU | 196e9123- |
| 560 | 7.28E+09 | 0.35 | 497 | 0.35 | 6 | 0 | 54 | | a5ec3b78- |
| 561 | 7.26E+09 | 0.59 | 563 | 1.02 | 41 | 0 | 0 | 3200 E 7TH | 184d0987- |
| 562 | 7.24E+09 | 3.06 | 594 | 3.06 | 115 | 0 | 0 | 1000 N ST | 9d15af5a-f |
| 563 | 7.13E+09 | 0.12 | 645 | 0.43 | 0 | 1 | 5 | 5519 CHEF | ef4e35d2-7 |
| 564 | 7.4E+09 | 0.12 | 140 | 0.27 | 0 | 1 | 3 | 1292 W W | 747d0ff2-e |
| 565 | 7.21E+09 | 0.13 | 244 | 0.48 | 0 | 2 | 7 | 1825 ATLA | 2897d330- |
| 566 | 7.13E+09 | 0.26 | 86 | 0.26 | 0 | 2 | 6 | 5151 LON( | efd95885-7 |
| 567 | 7.21E+09 | 0.28 | 123 | 0.49 | 3 | 0 | 27 | 540 E WILL | 3c242626- |
| 568 | 7.27E+09 | 0.1 | 427 | 0.3 | 0 | 1 | 4 | 1244 MAG | ade4c86d- |
| 569 | 7.26E+09 | 0.48 | 545 | 0.63 | 18 | 0 | 0 | 3540 E 4TH | 348e6ada- |
| 570 | 7.26E+09 | 0.34 | 255 | 0.72 | 23 | 0 | 0 | 3500 E PA( | 6cbc030e- |
| 571 | 7.26E+09 | 0.51 | 226 | 0.51 | 35 | 0 | 0 | 2340 E PA( | fed718fe-6 |
| 572 | 7.26E+09 | 0.14 | 567 | 0.29 | 0 | 1 | 5 | 512 REDO | fea66ff7-e |
| 573 | 7.26E+09 | 0.3 | 325 | 0.45 | 0 | 2 | 7 | 1006 JUNI | e53ed78b- |
| 574 | 7.2E+09 | 0.26 | 135 | 0.26 | 0 | 2 | 6 | 641 W WI | c34386e8- |
| 575 | 7.27E+09 | 0.17 | 195 | 0.44 | 0 | 2 | 6 | 1777 CEDA | a9b4bc78- |

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|---|---|---|---|---|---|---|---|---|---|
| 576 | 7.25E+09 | 0.13 | 304 | 0.41 | 0 | 1 | 3 | 1062 TERN | d83a5440- |
| 577 | 7.28E+09 | 0.8 | 481 | 0.8 | 14 | 0 | 122 | | 6d843865- |
| 578 | 7.15E+09 | 0.16 | 28 | 1.61 | 11 | 0 | 0 | 3355 ATLA | 9275e707- |
| 579 | 7.26E+09 | 0.11 | 585 | 0.28 | 0 | 1 | 2 | 231 OBISP | b9fac995-l |
| 580 | 7.13E+09 | 0.91 | 97 | 0.91 | 34 | 0 | 0 | 5204 ORAI | eb540ea7- |
| 581 | 7.26E+09 | 0.32 | 565 | 0.67 | 22 | 0 | 0 | 701 REDOI | dd46aa58- |
| 582 | 7.27E+09 | 0.17 | 405 | 0.42 | 0 | 2 | 10 | 1452 PINE | 91aa6139- |
| 583 | 7.26E+09 | 0.14 | 492 | 0.33 | 0 | 1 | 5 | 294 CHERI | 541b2cc6- |
| 584 | 7.15E+09 | 0.19 | 26 | 1.18 | 13 | 0 | 0 | | 0e263996- |
| 585 | 7.21E+09 | 0.17 | 16 | 0.81 | 12 | 0 | 0 | 3075 LONG | d97dc0bc- |
| 586 | 7.26E+09 | 0.15 | 264 | 0.82 | 10 | 0 | 0 | | bccc5a5d-3 |
| 587 | 7.21E+09 | 0.16 | 182 | 0.89 | 20 | 0 | 0 | 1820 PACI | c7a6427a- |
| 588 | 7.2E+09 | 1.04 | 4 | 1.91 | 104 | 0 | 0 | 3355 PACI | 0939efca-e |
| 589 | 7.27E+09 | 0.37 | 524 | 0.37 | 0 | 4 | 14 | 1155 E 7TH | de20f440- |
| 590 | 7.27E+09 | 0.17 | 200 | 1.42 | 18 | 0 | 0 | 1621 LONG | 5e4b187a- |
| 591 | 7.16E+09 | 10.21 | 643 | 20.77 | 0 | 103 | 408 | 5450 CHEF | 2ea5ddf1-e |
| 592 | 7.28E+09 | 0.34 | 482 | 0.34 | 6 | 0 | 52 | 305 W BR( | 202abaed- |
| 593 | 7.27E+09 | 0.28 | 188 | 0.41 | 3 | 0 | 27 | 1760 LONG | 5a04dac2- |
| 594 | 7.27E+09 | 0.14 | 533 | 0.31 | 0 | 1 | 6 | 1829 E 7TH | 9ff4bf1a-2 |
| 595 | 7.21E+09 | 0.15 | 130 | 0.46 | 0 | 1 | 4 | 2620 CHES | b83589c3- |
| 596 | 7.32E+09 | 0.13 | 64 | 0.33 | 0 | 1 | 3 | 2410 W W | c55217f9-3 |
| 597 | 7.27E+09 | 0.86 | 403 | 0.86 | 54 | 0 | 0 | 1548 CHES | 59a584fe-3 |
| 598 | 7.13E+09 | 0.24 | 644 | 0.38 | 0 | 2 | 10 | 5465 CHEF | c18336e5- |
| 599 | 7.27E+09 | 0.17 | 191 | 0.86 | 17 | 0 | 0 | 1724 PACI | 82a4eba9- |
| 600 | 7.28E+09 | 0.4 | 499 | 0.8 | 7 | 0 | 61 | 740 E BRO | 0b4a8f4b-3 |
| 601 | 7.21E+09 | 0.14 | 250 | 0.42 | 0 | 2 | 8 | 1934 ATLA | d5ecc786- |
| 602 | 7.21E+09 | 0.15 | 131 | 0.54 | 6 | 0 | 0 | 2575 CEDA | 4b381db1- |
| 603 | 7.14E+09 | 0.37 | 51 | 0.93 | 14 | 0 | 0 | 4001 ATLA | 8687ec21- |
| 604 | 7.27E+09 | 0.15 | 220 | 0.3 | 0 | 1 | 6 | 1708 ALAN | 238ea317- |
| 605 | 7.21E+09 | 0.37 | 183 | 1.02 | 46 | 0 | 0 | 1827 PACI | b9993c5a- |
| 606 | 7.14E+09 | 0.37 | 51 | 0.93 | 14 | 0 | 0 | 3981 ATLA | cb989699- |
| 607 | 7.27E+09 | 0.35 | 452 | 0.35 | 5 | 0 | 44 | 845 PACIFI | 97ab75ae- |
| 608 | 7.13E+09 | 1.07 | 95 | 1.63 | 47 | 0 | 0 | 5117 ATLA | 3aa9c249- |
| 609 | 7.26E+09 | 0.15 | 581 | 0.29 | 0 | 1 | 4 | 324 CORO | bf5e0e55-f |
| 610 | 7.21E+09 | 0.11 | 121 | 0.54 | 17 | 0 | 0 | 2525 ATLA | a194257d- |
| 611 | 7.21E+09 | 0.14 | 170 | 1.29 | 14 | 0 | 0 | 2129 LONG | a14127d1- |
| 612 | 7.21E+09 | 0.15 | 126 | 0.45 | 1 | 0 | 10 | 2650 PACI | 6723b573- |
| 613 | 7.14E+09 | 0.71 | 9 | 0.71 | 49 | 0 | 0 | | a2462502- |
| 614 | 7.27E+09 | 0.16 | 408 | 0.46 | 2 | 0 | 15 | 1429 ELM | e36eb481- |
| 615 | 7.26E+09 | 0.2 | 223 | 0.4 | 0 | 2 | 8 | 1600 CHEF | ee5aca31- |
| 616 | 7.13E+09 | 0.9 | 87 | 0.9 | 34 | 0 | 0 | 5115 LONG | 29deae1c- |
| 617 | 7.21E+09 | 0.17 | 176 | 0.62 | 12 | 0 | 0 | 1826 HENI | 9954501e- |
| 618 | 7.27E+09 | 0.23 | 367 | 0.29 | 0 | 2 | 9 | 1340 E AN | 83f8b67a-e |
| 619 | 7.25E+09 | 0.23 | 569 | 0.37 | 0 | 1 | 6 | 4001 E 7TH | fe47e81a-e |
| 620 | 7.21E+09 | 0.13 | 249 | 0.26 | 1 | 0 | 9 | 342 1/2 E | 83faac1e-e |
| 621 | 7.21E+09 | 0.34 | 172 | 0.34 | 2 | 0 | 22 | 1990 LONG | 05d2d295- |
| 622 | 7.27E+09 | 0.41 | 215 | 0.56 | 28 | 0 | 0 | 1190 E PA( | a7d916d0- |
| 623 | 7.27E+09 | 0.17 | 343 | 0.34 | 1 | 0 | 6 | 1020 E 10T | 4f08af3a-e |

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|---|---|---|---|---|---|---|---|---|---|
| 624 | 7.15E+09 | 0.19 | 30 | 0.78 | 13 | 0 | 0 | | a6527d5a- |
| 625 | 7.24E+09 | 0.13 | 305 | 0.82 | 5 | 0 | 0 | 1025 XIME | 90d21907- |
| 626 | 7.27E+09 | 0.11 | 208 | 0.38 | 1 | 0 | 11 | 500 E PACI | cba8df3b-5 |
| 627 | 7.14E+09 | 0.78 | 11 | 0.78 | 54 | 0 | 0 | 3377 LONG | ef5116f0-1 |
| 628 | 7.21E+09 | 0.14 | 245 | 0.42 | 2 | 0 | 13 | 1812 PASA | 668d250e- |
| 629 | 7.21E+09 | 0.39 | 181 | 0.39 | 4 | 0 | 38 | 101 W PAC | fd038b86- |
| 630 | 7.27E+09 | 0.46 | 391 | 0.46 | 0 | 4 | 17 | 1480 ALAM | fd0ff60e-f9 |
| 631 | 7.27E+09 | 0.48 | 460 | 0.48 | 8 | 0 | 74 | 700 LONG | 8e57f431- |
| 632 | 7.21E+09 | 0.14 | 23 | 0.42 | 1 | 0 | 10 | 162 E CAN | 18254333- |
| 633 | 7.21E+09 | 0.49 | 165 | 0.73 | 49 | 0 | 0 | 2310 LONG | ebe3193b- |
| 634 | 7.26E+09 | 0.16 | 272 | 0.31 | 0 | 2 | 6 | 3507 E 15T | 7c4b18d3- |
| 635 | 7.27E+09 | 0.15 | 215 | 0.56 | 10 | 0 | 0 | 1771 ORAI | 385401a8- |
| 636 | 7.11E+09 | 0.48 | 629 | 0.48 | 0 | 3 | 11 | 1200 E AR | b2bc7939- |
| 637 | 7.27E+09 | 0.12 | 329 | 0.36 | 2 | 0 | 15 | 744 ALAM | 3db229ad- |
| 638 | 7.28E+09 | 0.34 | 469 | 0.34 | 6 | 0 | 52 | 453 PACIFI | ad94ec93- |
| 639 | 7.28E+09 | 0.24 | 479 | 0.48 | 1 | 0 | 9 | 445 CHEST | 1f090506- |
| 640 | 7.12E+09 | 0.32 | 660 | 0.64 | 12 | 0 | 0 | 5990 ATLA | b94521d7- |
| 641 | 7.24E+09 | 0.92 | 591 | 0.92 | 35 | 0 | 0 | 5251 E LAS | f9744c3d- |
| 642 | 7.27E+09 | 0.17 | 197 | 0.34 | 0 | 2 | 6 | 1615 CHES | c3c8fb07-b |
| 643 | 7.15E+09 | 0.29 | 38 | 0.29 | 0 | 3 | 10 | 3491 ELM | 04c2096b- |
| 644 | 7.27E+09 | 0.17 | 400 | 0.34 | 1 | 0 | 12 | 1567 ELM | fec53705-7 |
| 645 | 7.21E+09 | 0.41 | 243 | 0.83 | 62 | 0 | 0 | 555 E PACI | 58982571- |
| 646 | 7.27E+09 | 0.35 | 191 | 0.86 | 35 | 0 | 0 | 1740 PACI | f9aa18f5-c |
| 647 | 7.26E+09 | 0.27 | 491 | 0.27 | 0 | 2 | 10 | 275 JUNIPI | 79041fce- |
| 648 | 7.27E+09 | 0.14 | 386 | 0.46 | 0 | 1 | 6 | 1525 E AN | f897ae1e- |
| 649 | 7.27E+09 | 0.17 | 191 | 0.86 | 17 | 0 | 0 | 1750 PACI | 350e5281- |
| 650 | 7.27E+09 | 0.07 | 489 | 0.31 | 0 | 1 | 2 | | 71ebfbd9- |
| 651 | 7.27E+09 | 0.14 | 395 | 0.3 | 0 | 2 | 8 | 1475 ATLA | 09620384- |
| 652 | 7.31E+09 | 0.07 | 1 | 0.28 | 0 | 0 | 2 | | 4cdbe134- |
| 653 | 7.13E+09 | 0.21 | 654 | 0.32 | 0 | 1 | 5 | 5927 ATLA | 1ef48efa-1 |
| 654 | 7.27E+09 | 0.14 | 438 | 0.8 | 14 | 0 | 0 | 1051 ELM | b6565c29- |
| 655 | 7.28E+09 | 0.26 | 478 | 0.26 | 1 | 0 | 9 | 613 W 4TH | 208a599e- |
| 656 | 7.24E+09 | 0.32 | 115 | 0.32 | 0 | 2 | 8 | 5270 E ATI | ded326c2- |
| 657 | 7.13E+09 | 0.13 | 78 | 0.39 | 0 | 1 | 3 | 114 E MAR | 875ca23c- |
| 658 | 7.27E+09 | 0.15 | 399 | 0.3 | 0 | 2 | 9 | 1559 LIND | 2088f485- |
| 659 | 7.21E+09 | 0.14 | 18 | 0.42 | 0 | 1 | 3 | 236 E ELDI | ca51a86c-5 |
| 660 | 7.27E+09 | 0.31 | 200 | 1.42 | 33 | 0 | 0 | 1637 LONG | 40993344- |
| 661 | 7.27E+09 | 0.13 | 405 | 0.42 | 0 | 2 | 7 | 1460 PINE | f6e2c1f8-6 |
| 662 | 7.25E+09 | 0.59 | 295 | 0.59 | 41 | 0 | 0 | 3636 E AN | 14667662- |
| 663 | 7.27E+09 | 0.34 | 498 | 0.34 | 5 | 0 | 43 | 200 ALAM | a15d11a7- |
| 664 | 7.27E+09 | 0.15 | 219 | 0.3 | 0 | 1 | 6 | 1226 E EST | 3b45bcc7- |
| 665 | 7.27E+09 | 0.17 | 441 | 0.34 | 3 | 0 | 26 | 1105 LOCU | 741ea77c- |
| 666 | 7.27E+09 | 0.15 | 342 | 0.58 | 1 | 0 | 5 | | 3ea890b2- |
| 667 | 7.14E+09 | 0.18 | 8 | 0.56 | 7 | 0 | 0 | 3500 LOCU | 1afbd3eb- |
| 668 | 7.21E+09 | 0.13 | 157 | 0.79 | 14 | 0 | 0 | 2490 LONG | c7d5d016- |
| 669 | 7.27E+09 | 0.53 | 461 | 0.53 | 9 | 0 | 81 | | 932aea5a- |
| 670 | 7.21E+09 | 0.27 | 160 | 0.27 | 0 | 2 | 6 | 2429 PACI | 3a902289- |
| 671 | 7.28E+09 | 0.46 | 512 | 0.46 | 6 | 0 | 58 | 402 ATLAN | 3643bde2- |

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|---|---|---|---|---|---|---|---|---|---|
| 672 | 7.27E+09 | 0.21 | 413 | 1.05 | 32 | 0 | 0 | | 852cbce0- |
| 673 | 7.21E+09 | 0.13 | 158 | 0.28 | 1 | 0 | 8 | 2453 LON( | c6f363c8-( |
| 674 | 7.27E+09 | 0.31 | 425 | 0.31 | 5 | 0 | 48 | 130 W AN/ | d577b785- |
| 675 | 7.26E+09 | 0.5 | 588 | 0.61 | 19 | 0 | 0 | 244 REDOI | 8393961f- |
| 676 | 7.27E+09 | 0.15 | 208 | 0.38 | 0 | 2 | 9 | 1770 LIND | 8a1d047e- |
| 677 | 7.24E+09 | 0.69 | 593 | 0.69 | 26 | 0 | 0 | 5124 E AN. | 484faed9-8 |
| 678 | 7.14E+09 | 1.68 | 113 | 1.68 | 63 | 0 | 0 | 4215 ATLA | 251e1a0f-( |
| 679 | 7.27E+09 | 0.21 | 455 | 0.54 | 4 | 0 | 32 | 730 PACIFI | 76fd8aa9-8 |
| 680 | 7.27E+09 | 0.15 | 351 | 0.3 | 0 | 1 | 6 | 1067 MYR | 2ee575da- |
| 681 | 7.27E+09 | 0.13 | 347 | 0.42 | 0 | 1 | 5 | 1116 MYR | 24e0afd8-( |
| 682 | 7.26E+09 | 0.27 | 284 | 0.66 | 19 | 0 | 0 | 2829 E AN. | 6286f574- |
| 683 | 7.27E+09 | 0.5 | 360 | 1.01 | 75 | 0 | 0 | 501 E ANA | f8e00180-( |
| 684 | 7.12E+09 | 2.54 | 631 | 2.54 | 175 | 0 | 0 | 6597 ATLA | 388723e7- |
| 685 | 7.27E+09 | 0.17 | 343 | 0.34 | 1 | 0 | 6 | 1028 E 10T | 38c2b86f-7 |
| 686 | 7.27E+09 | 0.18 | 339 | 0.79 | 1 | 0 | 6 | 919 ATLAN | 721e6f1c-b |
| 687 | 7.3E+09 | 0.06 | 673 | 0.3 | 0 | 0 | 2 | 6916 LON( | edd58abb- |
| 688 | 7.31E+09 | 0.35 | 137 | 0.35 | 0 | 2 | 9 | 1355 W W | 22a0dcfe-7 |
| 689 | 7.21E+09 | 0.16 | 182 | 0.89 | 20 | 0 | 0 | 1826 PACI | d742aef4-2 |
| 690 | 7.26E+09 | 0.34 | 229 | 0.34 | 0 | 3 | 14 | 2054 E PA( | cac92202-7 |
| 691 | 7.27E+09 | 0.15 | 357 | 0.3 | 0 | 1 | 6 | 1227 OLIV | c577a80c-7 |
| 692 | 7.24E+09 | 0.26 | 599 | 0.26 | 0 | 2 | 6 | 5865 E NA | b858fa8e-4 |
| 693 | 7.28E+09 | 0.34 | 517 | 0.34 | 5 | 0 | 43 | 555 ATLAN | 29e1ad7d- |
| 694 | 7.25E+09 | 0.14 | 312 | 0.28 | 0 | 1 | 3 | 830 LOMA | 59a14f31-2 |
| 695 | 7.13E+09 | 0.17 | 93 | 1.48 | 6 | 0 | 0 | | f524fd9f-7 |
| 696 | 7.15E+09 | 0.2 | 26 | 1.18 | 14 | 0 | 0 | | 5b190d7f- |
| 697 | 7.28E+09 | 0.42 | 487 | 0.42 | 7 | 0 | 64 | 615 E OCE | 5a18873b- |
| 698 | 7.21E+09 | 0.21 | 123 | 0.49 | 2 | 0 | 21 | 558 E WILI | dbd8f7bb- |
| 699 | 7.27E+09 | 0.12 | 489 | 0.31 | 0 | 1 | 4 | 1821 E 2N | ddfb98f6-b |
| 700 | 7.27E+09 | 0.12 | 444 | 0.27 | 2 | 0 | 18 | 201 E 10TH | 6f6cec6b-7 |
| 701 | 7.26E+09 | 0.28 | 319 | 0.28 | 0 | 3 | 11 | 929 REDOI | db552b74- |
| 702 | 7.28E+09 | 0.17 | 503 | 0.34 | 2 | 0 | 22 | 240 LINDE | 849b139b- |
| 703 | 7.25E+09 | 0.14 | 304 | 0.41 | 0 | 1 | 3 | 1067 BELM | da371d85- |
| 704 | 7.21E+09 | 0.14 | 23 | 0.42 | 1 | 0 | 10 | 170 E CAN | abaf9556-4 |
| 705 | 7.21E+09 | 0.16 | 16 | 0.81 | 11 | 0 | 0 | 3063 LON( | 7cbcda76- |
| 706 | 7.21E+09 | 0.15 | 247 | 0.3 | 0 | 2 | 9 | 540 E DAY | 789d1cd3- |
| 707 | 7.27E+09 | 0.15 | 393 | 0.3 | 0 | 2 | 9 | 1423 LIND | a18911db- |
| 708 | 7.22E+09 | 0.13 | 238 | 0.26 | 0 | 1 | 5 | 1835 CHEF | 797ea517- |
| 709 | 7.27E+09 | 0.16 | 187 | 0.63 | 24 | 0 | 0 | 228 E PACI | 08a507ce- |
| 710 | 7.26E+09 | 0.43 | 320 | 0.43 | 0 | 4 | 17 | 1001 REDC | 8b0f93d6- |
| 711 | 7.28E+09 | 0.26 | 471 | 0.26 | 4 | 0 | 32 | 239 W 4TH | 97d4ae49- |
| 712 | 7.27E+09 | 0.17 | 433 | 0.34 | 3 | 0 | 26 | 1052 PACI | 7656e595- |
| 713 | 7.26E+09 | 0.5 | 291 | 0.5 | 0 | 1 | 16 | 3416 E AN. | 1a3e4f05-7 |
| 714 | 7.26E+09 | 0.13 | 274 | 0.39 | 0 | 1 | 5 | 1456 REDC | 80f73e6e-( |
| 715 | 7.12E+09 | 0.18 | 656 | 0.33 | 0 | 1 | 5 | 1535 E SOI | e3503174- |
| 716 | 7.15E+09 | 0.55 | 42 | 0.55 | 21 | 0 | 0 | | 56641e1c- |
| 717 | 7.27E+09 | 0.44 | 537 | 0.44 | 0 | 3 | 10 | 1949 E 4TH | 03db5e27- |
| 718 | 7.12E+09 | 0.4 | 637 | 0.75 | 15 | 0 | 0 | 6108 ATLA | 2384fced-5 |
| 719 | 7.27E+09 | 0.17 | 449 | 0.46 | 3 | 0 | 26 | 322 E 10TH | 3fc0eed7-7 |

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|---|---|---|---|---|---|---|---|---|---|
| 720 | 7.28E+09 | 0.53 | 470 | 0.53 | 9 | 0 | 81 | 127 W 4TH | 76219206- |
| 721 | 7.26E+09 | 0.13 | 602 | 0.39 | 0 | 1 | 3 | 3712 E 1ST | 895b2e8d- |
| 722 | 7.26E+09 | 0.19 | 279 | 0.63 | 13 | 0 | 0 | 3201 E AN | d515480f- |
| 723 | 7.15E+09 | 0.19 | 27 | 0.38 | 0 | 2 | 7 | 3325 LIND | bc7705aa- |
| 724 | 0 | 0.17 | 475 | 0.34 | 3 | 0 | 26 | 328 PACIFI | 5b04998d- |
| 725 | 7.12E+09 | 0.41 | 658 | 0.93 | 28 | 0 | 0 | 5898 CHEF | 7da31ea4- |
| 726 | 7.27E+09 | 0.12 | 329 | 0.36 | 2 | 0 | 15 | 1036 E CH | b88faa5c-5 |
| 727 | 7.26E+09 | 0.19 | 265 | 0.38 | 0 | 2 | 7 | 1776 OHIC | b0296f8a- |
| 728 | 7.14E+09 | 0.56 | 112 | 0.75 | 21 | 0 | 0 | 4335 ATLA | 1711dc1e- |
| 729 | 7.21E+09 | 0.64 | 186 | 0.64 | 96 | 0 | 0 | 1801 LONG | 31f44117- |
| 730 | 7.13E+09 | 0.56 | 95 | 1.63 | 25 | 0 | 0 | 5115 ATLA | 60d161ba- |
| 731 | 7.27E+09 | 0.71 | 412 | 0.71 | 49 | 0 | 0 | 225 W AN | 478c5ad7- |
| 732 | 7.21E+09 | 0.15 | 22 | 0.85 | 16 | 0 | 0 | 220 E CAN | 4fb76181- |
| 733 | 7.25E+09 | 0.14 | 306 | 0.27 | 0 | 1 | 3 | 1043 ROSV | 33bdbefa- |
| 734 | 7.21E+09 | 0.34 | 169 | 0.85 | 34 | 0 | 0 | 2196 LON | 7d6680c1- |
| 735 | 7.26E+09 | 0.14 | 381 | 0.42 | 0 | 1 | 6 | 2215 E AN | 535b7e83- |
| 736 | 7.26E+09 | 0.15 | 259 | 0.45 | 0 | 1 | 6 | 1760 OBIS | b0294501- |
| 737 | 7.21E+09 | 0.1 | 178 | 0.3 | 1 | 0 | 10 | | 5b6e1ab9- |
| 738 | 7.28E+09 | 0.24 | 507 | 0.83 | 3 | 0 | 31 | 912 E 4TH | b9a4040d- |
| 739 | 7.28E+09 | 0.4 | 499 | 0.8 | 7 | 0 | 61 | 730 E BRO | 6708149a- |
| 740 | 7.26E+09 | 0.19 | 255 | 0.72 | 13 | 0 | 0 | | db440728- |
| 741 | 7.12E+09 | 0.14 | 627 | 0.41 | 0 | 1 | 3 | 1117 E AR | 4e6a7a73- |
| 742 | 7.31E+09 | 0.14 | 63 | 0.35 | 0 | 1 | 3 | 1608 W W | 225371b3- |
| 743 | 7.31E+09 | 0.5 | 146 | 0.5 | 19 | 0 | 0 | 2601 SANT | 0c8b03c7- |
| 744 | 7.15E+09 | 0.27 | 10 | 0.58 | 19 | 0 | 0 | 3414 LONG | a68e4885- |
| 745 | 7.26E+09 | 0.14 | 544 | 0.28 | 0 | 1 | 3 | 3646 E 4TH | 253dc23a- |
| 746 | 7.26E+09 | 0.3 | 546 | 0.44 | 0 | 2 | 7 | 389 REDOI | d49c2f01-5 |
| 747 | 7.27E+09 | 0.17 | 439 | 1.19 | 29 | 0 | 0 | 1050 LONG | e461d69e- |
| 748 | 7.2E+09 | 0.42 | 7 | 0.42 | 0 | 6 | 24 | 3431 PACI | fc2fd7c0-3 |
| 749 | 7.27E+09 | 0.21 | 368 | 0.49 | 0 | 2 | 8 | 1200 E AN | 9d4af6b6- |
| 750 | 7.22E+09 | 0.57 | 239 | 0.57 | 39 | 0 | 0 | 1851 E 19T | 31ca7f64- |
| 751 | 7.12E+09 | 0.21 | 660 | 0.64 | 8 | 0 | 0 | 5966 ATLA | 1e6076e4- |
| 752 | 7.27E+09 | 0.15 | 444 | 0.27 | 3 | 0 | 23 | 1012 LOCU | 82afa665-5 |
| 753 | 7.28E+09 | 0.14 | 505 | 0.27 | 0 | 1 | 5 | 326 CERRI | 34391856- |
| 754 | 7.3E+09 | 0.12 | 675 | 0.59 | 5 | 0 | 0 | 6890 LONG | d37843d3- |
| 755 | 7.21E+09 | 0.28 | 122 | 0.28 | 3 | 0 | 27 | 590 E WILL | 28b0acd3- |
| 756 | 7.27E+09 | 0.13 | 392 | 0.38 | 0 | 1 | 5 | 1401 ORAI | 4fbc83f0-b |
| 757 | 7.27E+09 | 0.13 | 209 | 0.26 | 1 | 0 | 13 | 538 E PACI | a357e536- |
| 758 | 7.26E+09 | 0.14 | 387 | 0.28 | 0 | 1 | 6 | 1403 CHEF | 0d60b410- |
| 759 | 7.26E+09 | 0.14 | 387 | 0.28 | 0 | 1 | 6 | 1409 CHEF | 5cd3f886- |
| 760 | 7.27E+09 | 0.17 | 419 | 0.34 | 0 | 3 | 10 | 1234 LONG | 2a6c7902- |
| 761 | 7.21E+09 | 0.14 | 23 | 0.42 | 1 | 0 | 10 | 212 E CAN | f0020d8d- |
| 762 | 7.28E+09 | 1.07 | 466 | 1.07 | 150 | 0 | 0 | 507 PACIFI | f06117bd- |
| 763 | 7.24E+09 | 0.27 | 572 | 0.27 | 0 | 2 | 6 | 4350 E 7TH | e21e5744- |
| 764 | 7.24E+09 | 0.63 | 598 | 0.63 | 24 | 0 | 0 | 5871 E NA | 973d6b04- |
| 765 | 7.27E+09 | 0.16 | 509 | 0.33 | 2 | 0 | 20 | 965 E 4TH | 9c5192bc- |
| 766 | 7.25E+09 | 0.44 | 294 | 0.61 | 30 | 0 | 0 | 3720 E AN | 61a2b9a7- |
| 767 | 7.27E+09 | 0.15 | 214 | 0.3 | 0 | 1 | 6 | 1782 CERR | 40f25359- |

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|---|---|---|---|---|---|---|---|---|---|
| 768 | 7.22E+09 | 0.25 | 237 | 0.25 | 0 | 2 | 10 | 1801 E PA( | 873ad0c2- |
| 769 | 7.4E+09 | 0.76 | 149 | 0.76 | 29 | 0 | 0 | 2290 SANT | 6b62d616· |
| 770 | 7.12E+09 | 0.4 | 621 | 0.4 | 0 | 4 | 16 | 6701 CHEF | e3a7de2a- |
| 771 | 7.21E+09 | 0.14 | 248 | 0.28 | 0 | 2 | 8 | 1870 PASA | 6cfbd904-8 |
| 772 | 7.21E+09 | 0.55 | 168 | 0.55 | 21 | 0 | 0 | 2200 PACI | f3f87761-5 |
| 773 | 7.26E+09 | 0.15 | 264 | 0.82 | 10 | 0 | 0 | 1767 GLAI | 95afc50f-5 |
| 774 | 7.2E+09 | 0.39 | 133 | 0.39 | 0 | 2 | 10 | 701 W WI | 43d0e5b1· |
| 775 | 7.14E+09 | 0.48 | 54 | 0.48 | 0 | 3 | 11 | 3932 LON( | dc137264- |
| 776 | 7.27E+09 | 0.17 | 436 | 0.31 | 3 | 0 | 26 | 1155 LOCI | 25fae215-3 |
| 777 | 7.26E+09 | 0.13 | 602 | 0.39 | 0 | 1 | 5 | 3702 E 1ST | fe2a6c3a-( |
| 778 | 7.12E+09 | 0.12 | 635 | 0.37 | 0 | 1 | 3 | 6176 ATLA | 5235ab1c- |
| 779 | 7.26E+09 | 0.14 | 388 | 0.42 | 0 | 1 | 6 | 1441 CHEF | 34772901· |
| 780 | 7.26E+09 | 0.21 | 384 | 0.52 | 14 | 0 | 0 | 1735 E AN | fd5ea26b-( |
| 781 | 7.26E+09 | 0.14 | 547 | 0.43 | 0 | 1 | 5 | 372 REDOI | 90d2970b· |
| 782 | 7.26E+09 | 0.4 | 285 | 0.53 | 28 | 0 | 0 | 2901 E AN | 05c8b417- |
| 783 | 7.27E+09 | 0.13 | 463 | 1.25 | 22 | 0 | 0 | 695 LOCUS | 9dbbe368· |
| 784 | 7.26E+09 | 0.29 | 375 | 0.29 | 0 | 3 | 11 | | ba6e62fe-7 |
| 785 | 7.26E+09 | 0.14 | 313 | 0.28 | 0 | 1 | 3 | 780 NEWP | 0c26ee64- |
| 786 | 7.26E+09 | 0.15 | 557 | 0.3 | 0 | 1 | 4 | 2811 E 4TH | c2048d59- |
| 787 | 7.26E+09 | 0.14 | 260 | 0.28 | 0 | 1 | 6 | | 4782a4b8· |
| 788 | 7.26E+09 | 0.2 | 587 | 0.39 | 0 | 1 | 5 | 231 NEWP | 73e71be2· |
| 789 | 7.27E+09 | 0.17 | 191 | 0.86 | 17 | 0 | 0 | 1720 PACI | 8eb4dd24· |
| 790 | 7.14E+09 | 0.74 | 50 | 0.74 | 28 | 0 | 0 | 4040 ATLA | 5bc4f802-( |
| 791 | 7.26E+09 | 0.13 | 324 | 0.26 | 0 | 1 | 5 | 1040 CHEF | 101a4a93- |
| 792 | 7.27E+09 | 0.17 | 446 | 0.68 | 3 | 0 | 26 | 1044 LOCI | 57a679c9- |
| 793 | 7.26E+09 | 0.15 | 583 | 0.29 | 0 | 1 | 4 | 250 REDOI | a29b4b7f-( |
| 794 | 7.26E+09 | 0.15 | 551 | 0.45 | 0 | 1 | 5 | 419 NEWP | 6091b7f8- |
| 795 | 7.27E+09 | 0.18 | 192 | 0.92 | 11 | 0 | 0 | 1720 CEDA | 17fad172-( |
| 796 | 7.26E+09 | 0.14 | 544 | 0.28 | 0 | 1 | 3 | 3640 E 4TH | 67fffdcd-3 |
| 797 | 7.27E+09 | 0.15 | 354 | 0.3 | 0 | 1 | 6 | 1208 OLIV | 5a1273e9- |
| 798 | 7.13E+09 | 0.14 | 651 | 0.39 | 0 | 1 | 3 | 800 E SOU | d9f9282e-( |
| 799 | 7.27E+09 | 0.3 | 523 | 0.3 | 4 | 0 | 38 | 700 MART | 45231cba- |
| 800 | 7.21E+09 | 0.12 | 119 | 0.36 | 0 | 2 | 7 | 540 E 25TH | 27ba6a12- |
| 801 | 7.26E+09 | 0.15 | 296 | 0.3 | 0 | 1 | 4 | 1205 LOM | 3906173d· |
| 802 | 7.26E+09 | 0.19 | 228 | 0.33 | 0 | 2 | 7 | 1786 SHER | 645b972a- |
| 803 | 7.26E+09 | 0.4 | 385 | 0.4 | 0 | 4 | 16 | 1601 E AN | 62867c60- |
| 804 | 7.1E+09 | 0.36 | 677 | 0.59 | 25 | 0 | 0 | | 8be6188b· |
| 805 | 7.27E+09 | 0.14 | 421 | 0.3 | 2 | 0 | 22 | 1218 PACI | beb08930· |
| 806 | 7.21E+09 | 0.14 | 14 | 0.28 | 0 | 1 | 3 | 222 E 31ST | 6addf928-9 |
| 807 | 7.22E+09 | 0.31 | 269 | 0.31 | 0 | 3 | 12 | 4500 E PA( | 67debf0f-6 |
| 808 | 7.27E+09 | 0.12 | 422 | 0.45 | 2 | 0 | 15 | 1203 PACI | 41a9a0d8- |
| 809 | 7.27E+09 | 0.26 | 338 | 0.43 | 1 | 0 | 9 | 901 OLIVE | 4faf7d2c-e |
| 810 | 7.26E+09 | 0.15 | 559 | 0.3 | 0 | 1 | 6 | 2717 E 7TH | f13b53fe-b |
| 811 | 7.27E+09 | 0.45 | 532 | 0.45 | 0 | 3 | 11 | 1577 E 7TH | be3783f5-7 |
| 812 | 7.27E+09 | 0.19 | 327 | 0.35 | 1 | 0 | 7 | 905 ALAM | 4fd7b6b4- |
| 813 | 7.21E+09 | 0.17 | 169 | 0.85 | 17 | 0 | 0 | 2148 LON( | a949fdaf-8 |
| 814 | 7.27E+09 | 0.11 | 331 | 0.28 | 0 | 0 | 4 | 753 ATLAN | d5d6286f- |
| 815 | 7.15E+09 | 0.41 | 28 | 1.61 | 28 | 0 | 0 | 3395 ATLA | 9a45f74d-9 |

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|---|---|---|---|---|---|---|---|---|---|
| 816 | 7.2E+09 | 0.87 | 4 | 1.91 | 87 | 0 | 0 | 350 W WA | f1dc5c49-c |
| 817 | 7.26E+09 | 0.25 | 264 | 0.82 | 17 | 0 | 0 | 2838 E PA( | d03c5dcb- |
| 818 | 7.26E+09 | 0.75 | 278 | 0.91 | 52 | 0 | 0 | 3339 E AN | 0385652c- |
| 819 | 7.26E+09 | 0.28 | 382 | 0.42 | 0 | 3 | 11 | 2325 E AN | 7bd35561· |
| 820 | 7.25E+09 | 0.13 | 307 | 0.26 | 0 | 1 | 3 | 817 MIRA | 9ed9a353- |
| 821 | 7.27E+09 | 0.16 | 447 | 0.53 | 3 | 0 | 24 | 944 PACIFI | 67d08ca9- |
| 822 | 7.27E+09 | 0.16 | 327 | 0.35 | 1 | 0 | 5 | 919 ALAM | db276ebe· |
| 823 | 7.27E+09 | 0.18 | 192 | 0.92 | 11 | 0 | 0 | 1726 CEDA | 3a07745d- |
| 824 | 7.13E+09 | 0.17 | 77 | 0.33 | 0 | 1 | 4 | 58 E MARK | 1ef26303- |
| 825 | 7.12E+09 | 0.36 | 614 | 0.36 | 0 | 2 | 9 | 3350 E AR | 2e7d8acd- |
| 826 | 7.27E+09 | 0.16 | 345 | 0.32 | 0 | 1 | 6 | 1044 MAR | 57d34204· |
| 827 | 7.21E+09 | 0.29 | 166 | 0.43 | 2 | 0 | 19 | 2238 LON( | d99fd443- |
| 828 | 7.27E+09 | 0.17 | 521 | 0.34 | 2 | 0 | 22 | 633 E 6TH | 9752a159- |
| 829 | 7.26E+09 | 0.33 | 293 | 0.63 | 23 | 0 | 0 | 3530 E AN | cfac5156-7 |
| 830 | 7.26E+09 | 0.14 | 543 | 0.28 | 0 | 1 | 3 | 3708 E 4TH | 92f118a2- |
| 831 | 7.21E+09 | 0.28 | 159 | 0.28 | 0 | 2 | 6 | | 05eef090- |
| 832 | 7.12E+09 | 0.59 | 678 | 1.19 | 41 | 0 | 0 | 6825 CHEF | a1ba7477- |
| 833 | 7.26E+09 | 0.15 | 309 | 0.3 | 0 | 1 | 4 | 901 LOMA | f22c9185-l |
| 834 | 7.27E+09 | 0.2 | 427 | 0.3 | 0 | 2 | 8 | 490 W AN/ | 0634ce49- |
| 835 | 7.13E+09 | 0.16 | 77 | 0.33 | 0 | 1 | 4 | 54 E MARK | eca2c8fd-6 |
| 836 | 7.21E+09 | 0.17 | 161 | 0.43 | 0 | 1 | 4 | 2418 PACI | cde81e6a- |
| 837 | 7.27E+09 | 0.14 | 522 | 0.53 | 2 | 0 | 18 | 638 ALAM | 404566a5- |
| 838 | 7.12E+09 | 0.35 | 678 | 1.19 | 24 | 0 | 0 | 6819 CHEF | 450f807b- |
| 839 | 7.21E+09 | 0.14 | 243 | 0.83 | 21 | 0 | 0 | 525 E PACI | b761abcb- |
| 840 | 7.24E+09 | 0.38 | 574 | 0.38 | 0 | 2 | 9 | 4740 E 7TH | e6f592db- |
| 841 | 7.32E+09 | 0.85 | 67 | 0.85 | 32 | 0 | 0 | 3621 SANT | 615fcbfe-e |
| 842 | 7.21E+09 | 0.11 | 121 | 0.54 | 17 | 0 | 0 | 2535 ATLA | cbbf4e60-a |
| 843 | 7.26E+09 | 0.13 | 221 | 0.44 | 0 | 1 | 5 | 1640 GARI | d17a7cc8- |
| 844 | 7.14E+09 | 0.19 | 112 | 0.75 | 7 | 0 | 0 | 4325 ATLA | 6d87e60b· |
| 845 | 7.27E+09 | 0.12 | 363 | 0.33 | 0 | 1 | 5 | 1101 E AN | 5f43ec30-a |
| 846 | 7.26E+09 | 0.28 | 564 | 0.28 | 0 | 3 | 11 | 3201 E 7TH | 3b61838b· |
| 847 | 7.26E+09 | 0.31 | 605 | 0.47 | 0 | 2 | 7 | 220 LOMA | 88f01b19- |
| 848 | 7.27E+09 | 0.18 | 443 | 0.36 | 3 | 0 | 28 | 223 E 10TH | 25c6cb26- |
| 849 | 7.28E+09 | 0.09 | 494 | 0.32 | 1 | 0 | 12 | 417 E 1ST | 81777d26· |
| 850 | 7.27E+09 | 0.16 | 528 | 0.48 | 0 | 1 | 4 | 535 NEBR/ | 7db20be9· |
| 851 | 7.22E+09 | 0.26 | 236 | 0.26 | 0 | 3 | 10 | 1629 E PA( | 6e352ff9-5 |
| 852 | 7.24E+09 | 0.42 | 573 | 0.42 | 0 | 3 | 10 | 4540 E 7TH | 6e38cd4d- |
| 853 | 7.27E+09 | 0.55 | 398 | 0.55 | 55 | 0 | 0 | 1535 ATLA | e8690df2- |
| 854 | 7.27E+09 | 0.17 | 334 | 0.51 | 1 | 0 | 6 | 853 ATLAN | 4268e3d9· |
| 855 | 7.27E+09 | 0.55 | 189 | 0.84 | 83 | 0 | 0 | 1700 LON( | 7d48d428· |
| 856 | 7.27E+09 | 0.15 | 207 | 1.1 | 23 | 0 | 0 | 333 E ESTH | 0dbf39fb-5 |
| 857 | 7.12E+09 | 0.15 | 625 | 0.29 | 0 | 1 | 4 | 801 E ARTI | b475ac62- |
| 858 | 7.27E+09 | 0.17 | 519 | 0.34 | 2 | 0 | 22 | 633 E 7TH | ee5bb596· |
| 859 | 7.27E+09 | 0.15 | 220 | 0.3 | 0 | 1 | 6 | 1225 E 17 | 34238484· |
| 860 | 7.26E+09 | 0.14 | 313 | 0.28 | 0 | 1 | 3 | 776 NEWP | b30c642c- |
| 861 | 7.27E+09 | 0.12 | 208 | 0.38 | 0 | 2 | 7 | 1774 LIND | 8c17bb0d- |
| 862 | 7.12E+09 | 0.26 | 638 | 0.26 | 0 | 2 | 6 | 6193 CHEF | 4918f975- |
| 863 | 7.13E+09 | 0.17 | 79 | 0.33 | 0 | 1 | 4 | 336 E MAR | 0ac45eb1- |

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|---|---|---|---|---|---|---|---|---|---|
| 864 | 7.27E+09 | 0.17 | 533 | 0.31 | 0 | 2 | 6 | 1837 E 7TH | 2b009043- |
| 865 | 7.13E+09 | 0.11 | 654 | 0.32 | 0 | 1 | 2 | 5941 ATLA | 6abd7c36- |
| 866 | 7.27E+09 | 0.34 | 415 | 0.51 | 51 | 0 | 0 | 233 E ANA | c248b79b- |
| 867 | 7.15E+09 | 0.7 | 41 | 1.01 | 44 | 0 | 0 | 3590 ELM | 1a00fc51-f |
| 868 | 7.28E+09 | 0.31 | 468 | 2.57 | 5 | 0 | 48 | | ff866618-8 |
| 869 | 7.27E+09 | 0.15 | 218 | 0.27 | 0 | 1 | 6 | 1742 CERR | 03153ca0- |
| 870 | 7.12E+09 | 0.14 | 625 | 0.29 | 0 | 1 | 3 | 6616 OLIV | d298416f- |
| 871 | 7.26E+09 | 0.15 | 271 | 0.3 | 0 | 1 | 6 | 3517 E RAI | a50e7b1a- |
| 872 | 7.27E+09 | 0.14 | 341 | 0.28 | 0 | 2 | 8 | 1036 ATLA | 2a1c436b- |
| 873 | 7.27E+09 | 0.3 | 417 | 1.13 | 45 | 0 | 0 | 1343 LON | 1787d673- |
| 874 | 7.13E+09 | 0.13 | 651 | 0.39 | 0 | 1 | 3 | 5694 OLIV | 54e41375- |
| 875 | 7.28E+09 | 0.03 | 494 | 0.32 | 0 | 0 | 4 | 417 1/4 E | 9a544c83- |
| 876 | 7.31E+09 | 0.13 | 139 | 0.27 | 0 | 1 | 3 | 1339 W W | 9ff32eca-d |
| 877 | 7.27E+09 | 0.14 | 341 | 0.28 | 0 | 2 | 8 | | b2873d4d- |
| 878 | 7.26E+09 | 0.27 | 264 | 0.82 | 19 | 0 | 0 | 2800 E PA | 6b121115- |
| 879 | 7.12E+09 | 0.11 | 660 | 0.64 | 4 | 0 | 0 | 5960 ATLA | 97010b9c- |
| 880 | 7.26E+09 | 0.14 | 286 | 0.58 | 10 | 0 | 0 | 1208 FREE | bcaef25b-( |
| 881 | 7.14E+09 | 0.16 | 59 | 0.32 | 0 | 1 | 4 | 301 E BIXB | a5aeb584- |
| 882 | 7.25E+09 | 0.16 | 301 | 0.79 | 11 | 0 | 0 | 4021 E AN | 9d9300d4- |
| 883 | 7.26E+09 | 0.15 | 542 | 0.3 | 0 | 1 | 4 | 396 ORIZA | b6f49ed0- |
| 884 | 7.27E+09 | 0.15 | 323 | 0.3 | 0 | 1 | 6 | 1043 CHEF | e2c154b1- |
| 885 | 7.26E+09 | 0.14 | 580 | 0.28 | 0 | 1 | 3 | 315 REDOI | e686788a- |
| 886 | 7.27E+09 | 0.16 | 406 | 0.61 | 24 | 0 | 0 | 1480 LON( | ceb44bee- |
| 887 | 7.21E+09 | 0.15 | 158 | 0.28 | 1 | 0 | 10 | 2461 LON( | 85d4b87d- |
| 888 | 7.13E+09 | 0.13 | 647 | 0.26 | 0 | 1 | 3 | 5518 LIND | d0adbbe8- |
| 889 | 7.13E+09 | 0.8 | 92 | 1.24 | 30 | 0 | 0 | 5020 LON( | 1c0c5a4c-( |
| 890 | 7.26E+09 | 0.15 | 554 | 0.3 | 0 | 1 | 4 | 3027 E 4TH | 6f2744cb-( |
| 891 | 7.27E+09 | 0.34 | 520 | 0.34 | 5 | 0 | 43 | 638 ATLAN | faf00016-5 |
| 892 | 7.26E+09 | 0.15 | 326 | 0.3 | 0 | 1 | 6 | 760 CHERF | cdbb7b01- |
| 893 | 7.26E+09 | 0.15 | 549 | 0.3 | 0 | 1 | 4 | 387 CORO | a61359d6- |
| 894 | 7.21E+09 | 0.39 | 180 | 0.39 | 5 | 0 | 37 | 1814 PINE | cb8403a9- |
| 895 | 7.25E+09 | 0.29 | 292 | 0.29 | 0 | 3 | 11 | 1228 LOM | 66cfc116-e |
| 896 | 7.27E+09 | 0.16 | 365 | 0.3 | 0 | 2 | 6 | 1333 ORA | 3fa7a9ac-8 |
| 897 | 7.21E+09 | 0.29 | 15 | 0.29 | 1 | 0 | 13 | 3060 LON | 7fd44cf9-9 |
| 898 | 7.21E+09 | 0.15 | 24 | 0.31 | 1 | 0 | 10 | 204 E 29TH | d22de548- |
| 899 | 7.24E+09 | 0.12 | 297 | 0.42 | 0 | 1 | 3 | | 2166134d- |
| 900 | 7.27E+09 | 0.43 | 362 | 0.43 | 0 | 4 | 17 | 1155 E AN | c27a8328- |
| 901 | 7.21E+09 | 0.14 | 248 | 0.28 | 0 | 2 | 8 | 1876 PASA | 7796fb99- |
| 902 | 7.15E+09 | 0.2 | 26 | 1.18 | 14 | 0 | 0 | | ac6f9d6d-3 |
| 903 | 7.27E+09 | 0.15 | 399 | 0.3 | 0 | 2 | 9 | 1565 LIND | 4ba85059- |
| 904 | 7.27E+09 | 0.17 | 360 | 1.01 | 26 | 0 | 0 | 543 E ANA | 57b501cd- |
| 905 | 7.12E+09 | 0.4 | 609 | 0.4 | 0 | 4 | 16 | 6650 N PA | e2c1390c- |
| 906 | 7.25E+09 | 0.26 | 299 | 0.26 | 0 | 3 | 10 | 3922 E AN | 94e4eaeb- |
| 907 | 7.25E+09 | 0.47 | 301 | 0.79 | 32 | 0 | 0 | 4001 E AN | 3f25eee7-( |
| 908 | 7.12E+09 | 0.16 | 623 | 0.3 | 0 | 2 | 6 | 590 E 67TH | 30828df0- |
| 909 | 7.27E+09 | 0.27 | 409 | 0.27 | 3 | 0 | 26 | 1351 LOCU | 3cad425c-( |
| 910 | 7.12E+09 | 0.12 | 610 | 0.48 | 0 | 1 | 5 | 6621 HAM | 00a1fa70-3 |
| 911 | 7.26E+09 | 0.3 | 582 | 0.45 | 0 | 2 | 7 | 300 REDOI | 871e7a2d- |

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|---|---|---|---|---|---|---|---|---|---|---|
| 912 | 7.21E+09 | 0.15 | 129 | 0.39 | 0 | 1 | 4 | 2621 | EUC/ | 47034899- |
| 913 | 7.13E+09 | 0.44 | 92 | 1.24 | 17 | 0 | 0 | 5000 | LON( | 9c64c805- |
| 914 | 7.26E+09 | 0.12 | 578 | 0.36 | 0 | 1 | 3 | | | fe624363- |
| 915 | 7.27E+09 | 0.3 | 370 | 0.3 | 0 | 3 | 12 | 900 | E ANA | 2ba616b3- |
| 916 | 7.27E+09 | 0.12 | 489 | 0.31 | 0 | 1 | 4 | 1831 | E 2N | 6c341c9a- |
| 917 | 7.27E+09 | 1.51 | 462 | 1.51 | 257 | 0 | 0 | 600 | LONG | ca1faafc-6 |
| 918 | 7.27E+09 | 0.16 | 345 | 0.32 | 0 | 1 | 6 | 1052 | MAR | d5cb704b- |
| 919 | 7.15E+09 | 0.31 | 10 | 0.58 | 21 | 0 | 0 | 3400 | LON( | c2b8f116- |
| 920 | 7.15E+09 | 0.57 | 37 | 1.53 | 39 | 0 | 0 | 577 | E WAI | 63303316- |
| 921 | 7.27E+09 | 0.17 | 203 | 0.34 | 1 | 0 | 12 | 1604 | LOCI | 4a01c333- |
| 922 | 7.13E+09 | 0.3 | 668 | 0.3 | 0 | 2 | 7 | 13 | E MARI | 44533260- |
| 923 | 7.27E+09 | 0.17 | 338 | 0.43 | 1 | 0 | 6 | 921 | OLIVE | 12741119- |
| 924 | 7.15E+09 | 0.34 | 43 | 0.34 | 0 | 2 | 8 | 3650 | ELM | df862735- |
| 925 | 7.13E+09 | 0.47 | 649 | 0.7 | 18 | 0 | 0 | 5601 | ORAI | c88e379c- |
| 926 | 7.27E+09 | 0.34 | 456 | 0.34 | 5 | 0 | 43 | 757 | PACIFI | aa13da29- |
| 927 | 7.27E+09 | 0.2 | 447 | 0.53 | 3 | 0 | 31 | 934 | PACIFI | d19162f8- |
| 928 | 7.27E+09 | 0.12 | 508 | 0.54 | 2 | 0 | 15 | 431 | N ZON | 72826821- |
| 929 | 7.26E+09 | 0.26 | 224 | 0.26 | 0 | 3 | 10 | 2434 | E PA( | 04f4e411- |
| 930 | 7.27E+09 | 0.11 | 358 | 0.42 | 0 | 2 | 6 | 550 | E ANA | 4f35f0da-b |
| 931 | 7.13E+09 | 0.12 | 651 | 0.39 | 0 | 1 | 3 | 5690 | OLIV | a99b8f06- |
| 932 | 7.21E+09 | 0.17 | 176 | 0.62 | 12 | 0 | 0 | 1816 | HENI | af2f3cbf-9 |
| 933 | 7.32E+09 | 0.4 | 65 | 0.82 | 15 | 0 | 0 | 1700 | W W | 2d92a446- |
| 934 | 0 | 0.31 | 474 | 0.48 | 5 | 0 | 48 | 131 | W 3RI | 0298d851- |
| 935 | 7.25E+09 | 0.23 | 256 | 0.23 | 0 | 2 | 9 | 3600 | E PA | ceaad791- |
| 936 | 7.28E+09 | 0.17 | 476 | 0.35 | 3 | 0 | 26 | 449 | W 3RI | f3c25eda- |
| 937 | 7.26E+09 | 0.3 | 372 | 0.3 | 0 | 3 | 12 | 1600 | E AN | e0e479c9- |
| 938 | 7.12E+09 | 0.12 | 640 | 0.37 | 0 | 1 | 3 | | | 93401a72- |
| 939 | 7.26E+09 | 0.16 | 576 | 0.32 | 0 | 1 | 4 | 4240 | E 4TI | 83cdb910- |
| 940 | 7.21E+09 | 0.41 | 12 | 2.35 | 28 | 0 | 0 | 3247 | ELM | 9e08e7c9- |
| 941 | 7.28E+09 | 0.24 | 479 | 0.48 | 1 | 0 | 9 | 437 | CHEST | 408e5544- |
| 942 | 7.26E+09 | 0.13 | 284 | 0.66 | 9 | 0 | 0 | 2821 | E AN | 67dcc606- |
| 943 | 7.13E+09 | 0.31 | 645 | 0.43 | 0 | 3 | 12 | 5531 | CHEI | 3d549142- |
| 944 | 7.13E+09 | 0.29 | 664 | 0.29 | 0 | 2 | 7 | 5588 | LON( | 8a27feb1- |
| 945 | 7.26E+09 | 0.17 | 565 | 0.67 | 12 | 0 | 0 | 3303 | E 7TI | 840a08ad- |
| 946 | 7.28E+09 | 0.23 | 511 | 0.36 | 3 | 0 | 29 | 600 | E 4TH | 7d09c006- |
| 947 | 7.21E+09 | 0.16 | 24 | 0.31 | 1 | 0 | 11 | 162 | E 29TI | 7ce330ce- |
| 948 | 7.27E+09 | 0.17 | 407 | 0.32 | 2 | 0 | 16 | 1483 | ELM | 10b56334- |
| 949 | 7.12E+09 | 0.15 | 617 | 0.44 | 0 | 1 | 6 | 3240 | E 67 | 4bf4d46e- |
| 950 | 7.21E+09 | 0.12 | 124 | 0.25 | 1 | 0 | 12 | 2690 | ELM | 240360d0- |
| 951 | 7.26E+09 | 0.19 | 492 | 0.33 | 0 | 2 | 7 | 2016 | E 3RI | bc29c734- |
| 952 | 7.27E+09 | 0.67 | 364 | 0.67 | 46 | 0 | 0 | 1332 | ORAI | a80d94f3- |
| 953 | 7.27E+09 | 0.15 | 205 | 0.3 | 1 | 0 | 10 | 351 | E 17TI | dca1f579- |
| 954 | 7.12E+09 | 0.15 | 656 | 0.33 | 0 | 1 | 4 | 1517 | E SOI | dc8522b1- |
| 955 | 7.27E+09 | 0.25 | 359 | 0.25 | 3 | 0 | 24 | 437 | E ANA | 220a4293- |
| 956 | 7.21E+09 | 0.13 | 152 | 0.97 | 5 | 0 | 0 | 2535 | PACI | f9992205- |
| 957 | 7.31E+09 | 0.24 | 147 | 0.41 | 0 | 1 | 6 | 2056 | W W | cf250816- |
| 958 | 7.27E+09 | 0.5 | 440 | 0.5 | 9 | 0 | 78 | 1130 | LOCI | 5638e82f- |
| 959 | 7.26E+09 | 0.2 | 558 | 0.32 | 0 | 2 | 8 | 2700 | E 7TI | 4acd08a6- |

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|---|---|---|---|---|---|---|---|---|---|
| 960 | 7.27E+09 | 0.17 | 438 | 0.8 | 17 | 0 | 0 | 1069 ELM | c0bb822d- |
| 961 | 7.13E+09 | 0.4 | 101 | 0.4 | 0 | 3 | 10 | 5350 ATLA | b11433cc- |
| 962 | 7.21E+09 | 0.13 | 120 | 0.33 | 0 | 3 | 11 | 572 E VERI | 64e786a7- |
| 963 | 7.28E+09 | 0.28 | 510 | 0.28 | 4 | 0 | 35 | 832 E 5TH | e9182241- |
| 964 | 7.13E+09 | 0.13 | 72 | 0.4 | 0 | 1 | 3 | | f402f36a-b |
| 965 | 7.13E+09 | 0.39 | 75 | 0.52 | 15 | 0 | 0 | 5324 LON( | 88ae33aa- |
| 966 | 7.13E+09 | 0.16 | 84 | 0.38 | 0 | 1 | 4 | 125 W 52N | fa4ea18e-5 |
| 967 | 7.21E+09 | 0.26 | 152 | 0.97 | 10 | 0 | 0 | 2565 PACI | 05355cff-5 |
| 968 | 7.15E+09 | 0.29 | 39 | 0.59 | 18 | 0 | 0 | 3510 LIND | 0dabedd9- |
| 969 | 7.25E+09 | 0.13 | 306 | 0.27 | 0 | 1 | 3 | 1055 ROSV | 6d3fd2c1-b |
| 970 | 7.27E+09 | 0.17 | 193 | 0.65 | 17 | 0 | 0 | 1770 PACI | d1d81267- |
| 971 | 7.21E+09 | 0.13 | 164 | 0.65 | 13 | 0 | 0 | 2335 LON( | 035136bd- |
| 972 | 7.3E+09 | 0.06 | 673 | 0.3 | 0 | 0 | 2 | | 8cf9fdc8-6 |
| 973 | 7.27E+09 | 0.15 | 322 | 0.3 | 0 | 1 | 6 | 1942 E 107 | 8824b467- |
| 974 | 7.27E+09 | 0.34 | 199 | 0.34 | 0 | 5 | 19 | 1629 PINE | d1bbb2ea- |
| 975 | 7.26E+09 | 0.15 | 545 | 0.63 | 6 | 0 | 0 | 388 NEWP | 47a3c2d6- |
| 976 | 7.13E+09 | 0.12 | 642 | 0.45 | 0 | 1 | 3 | 1516 E SOI | b2757c6e- |
| 977 | 7.11E+09 | 0.38 | 618 | 0.38 | 0 | 2 | 9 | 1833 E AR | 8985f951- |
| 978 | 7.27E+09 | 0.17 | 330 | 0.34 | 1 | 0 | 6 | 728 ATLAN | 65a221fa-b |
| 979 | 7.27E+09 | 0.17 | 411 | 0.51 | 17 | 0 | 0 | 213 W AN/ | 90534b0b- |
| 980 | 7.13E+09 | 0.52 | 102 | 0.52 | 36 | 0 | 0 | 5365 CHEF | 3997c442- |
| 981 | 7.27E+09 | 0.16 | 369 | 0.64 | 11 | 0 | 0 | 1024 E AN | a9a38ed9- |
| 982 | 7.13E+09 | 0.14 | 666 | 0.28 | 0 | 1 | 3 | 127 E MAF | 6d662e03- |
| 983 | 7.27E+09 | 0.66 | 417 | 1.13 | 99 | 0 | 0 | 1333 LON( | a080bea2- |
| 984 | 7.31E+09 | 0.15 | 142 | 0.27 | 0 | 1 | 4 | 1545 W W | a770e2bb- |
| 985 | 7.27E+09 | 0.23 | 518 | 0.4 | 3 | 0 | 29 | 601 E 7TH | 2aafc0a6-b |
| 986 | 7.27E+09 | 0.12 | 210 | 0.36 | 0 | 2 | 7 | | b74c7619- |
| 987 | 7.28E+09 | 0.17 | 514 | 0.36 | 2 | 0 | 22 | 433 LINDE | 0be4491c- |
| 988 | 7.27E+09 | 0.17 | 337 | 0.34 | 1 | 0 | 6 | 841 OLIVE | f4a243d5-3 |
| 989 | 7.26E+09 | 0.13 | 324 | 0.26 | 0 | 1 | 5 | 1048 CHEF | 14db1e48- |
| 990 | 7.27E+09 | 0.17 | 342 | 0.58 | 1 | 0 | 6 | | f2c8e7c8-0 |
| 991 | 7.26E+09 | 0.32 | 541 | 0.32 | 0 | 2 | 8 | 392 JUNIPI | f478bef5-f |
| 992 | 7.21E+09 | 0.61 | 173 | 0.61 | 65 | 0 | 0 | 1965 LON( | 0e756b90- |
| 993 | 7.27E+09 | 0.15 | 394 | 0.3 | 0 | 2 | 9 | 1465 LIND | 54e0d00a- |
| 994 | 7.21E+09 | 0.15 | 118 | 0.73 | 23 | 0 | 0 | 2560 ATLA | 6f7be60e-3 |
| 995 | 7.12E+09 | 0.02 | 611 | 0.27 | 0 | 0 | 1 | | 9bc25766- |
| 996 | 7.26E+09 | 0.15 | 582 | 0.45 | 0 | 1 | 4 | 305 NEWP | b0ac95d5- |
| 997 | 7.21E+09 | 0.17 | 16 | 0.81 | 12 | 0 | 0 | | 98a77575- |
| 998 | 7.27E+09 | 0.12 | 404 | 0.43 | 0 | 2 | 7 | 1410 PINE | 833312fe-3 |
| 999 | 7.12E+09 | 0.14 | 617 | 0.44 | 0 | 1 | 6 | 3230 E 67 | 301f5438-3 |
| 1000 | 7.21E+09 | 0.41 | 182 | 0.89 | 62 | 0 | 0 | 127 W PA( | d33eeb62- |
| 1001 | 7.21E+09 | 0.34 | 153 | 0.34 | 4 | 0 | 33 | 2525 LON( | 5ed402b4- |
| 1002 | 7.27E+09 | 0.18 | 463 | 1.25 | 31 | 0 | 0 | 643 LOCUS | bd7ef776- |
| 1003 | 7.18E+09 | 0.34 | 103 | 0.34 | 0 | 2 | 8 | 4750 N LA | 845d1159- |
| 1004 | 7.26E+09 | 0.15 | 259 | 0.45 | 0 | 1 | 6 | 1750 OBIS | c6279b4a- |
| 1005 | 7.27E+09 | 0.65 | 437 | 0.65 | 7 | 0 | 62 | 1157 LON( | 57662597- |
| 1006 | 7.27E+09 | 0.52 | 335 | 0.69 | 2 | 0 | 19 | 850 LIME A | 34003c74- |
| 1007 | 7.26E+09 | 0.15 | 259 | 0.45 | 0 | 1 | 6 | 1768 OBIS | 3e0af2df-9 |

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|---|---|---|---|---|---|---|---|---|---|
| 1008 | 7.21E+09 | 0.14 | 243 | 0.83 | 21 | 0 | 0 | 567 E PACI | 4958d882- |
| 1009 | 7.3E+09 | 0.06 | 675 | 0.59 | 2 | 0 | 0 | | 32bcf577- |
| 1010 | 7.26E+09 | 0.15 | 604 | 0.3 | 0 | 1 | 4 | 217 LOMA | 8fbd4c95- |
| 1011 | 7.11E+09 | 2.33 | 628 | 2.44 | 87 | 0 | 0 | 1313 E AR | a75ab044- |
| 1012 | 7.28E+09 | 0.52 | 507 | 0.83 | 7 | 0 | 66 | 300 ALAN | aa921ba0- |
| 1013 | 7.31E+09 | 0.02 | 62 | 0.38 | 0 | 0 | 1 | 3646 SANT | 97dced65- |
| 1014 | 7.27E+09 | 0.47 | 352 | 0.75 | 47 | 0 | 0 | 1078 ATL | 08520406- |
| 1015 | 7.27E+09 | 0.17 | 331 | 0.28 | 1 | 0 | 6 | 741 ATLAN | 3ef90b93- |
| 1016 | 7.12E+09 | 0.15 | 616 | 0.15 | 0 | 1 | 6 | 6661 INDI/ | 25fdf494- |
| 1017 | 7.26E+09 | 0.13 | 556 | 0.4 | 0 | 1 | 3 | 419 TEMPI | c9985991- |
| 1018 | 7.27E+09 | 0.18 | 358 | 0.42 | 0 | 3 | 10 | 1225 ATL | b5a7004f- |
| 1019 | 7.26E+09 | 0.37 | 540 | 0.37 | 0 | 2 | 9 | 2000 E 4TH | c050e314- |
| 1020 | 7.27E+09 | 0.13 | 390 | 0.26 | 0 | 1 | 5 | 1508 ORAI | d201e2c6- |
| 1021 | 7.27E+09 | 0.15 | 353 | 0.3 | 0 | 1 | 6 | 1133 MYR | 9b40add1- |
| 1022 | 7.27E+09 | 0.2 | 463 | 1.25 | 34 | 0 | 0 | | 41192561- |
| 1023 | 7.27E+09 | 0.19 | 538 | 0.31 | 0 | 1 | 5 | 1327 E 4TH | 6c056512- |
| 1024 | 7.26E+09 | 0.14 | 543 | 0.28 | 0 | 1 | 3 | 3714 E 4TH | 8cb93703- |
| 1025 | 7.21E+09 | 0.28 | 250 | 0.42 | 0 | 4 | 16 | 1954 ATLA | 07d9c303- |
| 1026 | 7.27E+09 | 0.13 | 189 | 0.84 | 20 | 0 | 0 | 1730 LONG | d9eaa3bc- |
| 1027 | 7.31E+09 | 0.16 | 2 | 0.36 | 0 | 1 | 4 | 3191 SANT | 8b8dab48- |
| 1028 | 7.26E+09 | 0.12 | 225 | 0.38 | 0 | 1 | 5 | 1774 STAN | 97927eef- |
| 1029 | 7.28E+09 | 5.61 | 480 | 5.61 | 95 | 0 | 859 | | bfaf9bfa-b |
| 1030 | 7.27E+09 | 0.28 | 448 | 0.28 | 5 | 0 | 43 | 947 PINE | c015de67- |
| 1031 | 7.21E+09 | 0.14 | 17 | 0.42 | 0 | 1 | 3 | 116 E 31ST | 62eee47f- |
| 1032 | 7.21E+09 | 0.14 | 252 | 0.28 | 0 | 2 | 8 | 1928 PASA | 36ac4d65- |
| 1033 | 7.27E+09 | 0.15 | 408 | 0.46 | 2 | 0 | 14 | 1411 ELM | 34b5eab1- |
| 1034 | 7.27E+09 | 0.12 | 210 | 0.36 | 0 | 2 | 7 | | b5f4a1dd- |
| 1035 | 7.27E+09 | 0.47 | 187 | 0.63 | 71 | 0 | 0 | 220 E PAC | 0d5b1826- |
| 1036 | 7.26E+09 | 0.16 | 576 | 0.32 | 0 | 1 | 4 | 4300 E 4TH | d7fda265- |
| 1037 | 7.27E+09 | 0.19 | 450 | 0.91 | 3 | 0 | 29 | 931 LONG | 395bff9c-f |
| 1038 | 7.21E+09 | 0.15 | 19 | 0.45 | 1 | 0 | 6 | 3031 LONG | d5054ca2- |
| 1039 | 7.27E+09 | 0.52 | 212 | 0.52 | 36 | 0 | 0 | 904 E PACI | 9409d4a8- |
| 1040 | 7.28E+09 | 0.17 | 503 | 0.34 | 2 | 0 | 22 | 246 LINDE | 02015104- |
| 1041 | 7.14E+09 | 0.15 | 60 | 0.46 | 0 | 1 | 4 | | be2e997b- |
| 1042 | 7.21E+09 | 0.42 | 154 | 0.42 | 5 | 0 | 40 | 2500 LONG | 71648f58- |
| 1043 | 7.27E+09 | 0.14 | 336 | 0.28 | 1 | 0 | 5 | 829 N WAS | 474d37a1- |
| 1044 | 7.12E+09 | 0.38 | 626 | 0.8 | 14 | 0 | 0 | 901 E ARTI | c0e0aa30- |
| 1045 | 7.11E+09 | 0.11 | 634 | 0.4 | 0 | 1 | 2 | | 0a918619- |
| 1046 | 7.14E+09 | 0.21 | 58 | 0.36 | 0 | 1 | 5 | 3801 LONG | 6345f877- |
| 1047 | 7.26E+09 | 0.15 | 604 | 0.3 | 0 | 1 | 4 | 215 LOMA | c348efe1- |
| 1048 | 7.27E+09 | 0.17 | 420 | 0.34 | 0 | 3 | 10 | 1118 LONG | 41749344- |
| 1049 | 7.2E+09 | 0.41 | 132 | 0.41 | 0 | 2 | 10 | 600 W WII | 8b2fb60d- |
| 1050 | 7.21E+09 | 0.15 | 19 | 0.45 | 1 | 0 | 6 | 3015 LONG | c66db49e- |
| 1051 | 7.27E+09 | 0.25 | 339 | 0.79 | 1 | 0 | 9 | 912 LINDE | d2818e6b- |
| 1052 | 7.13E+09 | 0.46 | 646 | 0.72 | 20 | 0 | 0 | 5400 ATLA | 41ab51c5- |
| 1053 | 7.32E+09 | 0.13 | 65 | 0.82 | 5 | 0 | 0 | 1730 W W | 4f848a65- |
| 1054 | 7.26E+09 | 0.14 | 225 | 0.38 | 0 | 1 | 6 | 2500 E PA | 4fb72c43- |
| 1055 | 7.12E+09 | 0.34 | 633 | 0.34 | 0 | 2 | 8 | 6510 CHEF | 30369447- |

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|---|---|---|---|---|---|---|---|---|---|
| 1056 | 7.27E+09 | 0.17 | 439 | 1.19 | 29 | 0 | 0 | 1060 LON( | 71a519a8- |
| 1057 | 7.27E+09 | 0.17 | 439 | 1.19 | 29 | 0 | 0 | 1098 LON( | 5a946203- |
| 1058 | 7.27E+09 | 0.16 | 421 | 0.3 | 3 | 0 | 24 | | 03bfdced- |
| 1059 | 7.21E+09 | 0.1 | 121 | 0.54 | 15 | 0 | 0 | 2515 ATLA | 0762008a- |
| 1060 | 7.28E+09 | 0.12 | 490 | 0.35 | 0 | 1 | 5 | 1923 E BR( | 2aa7c45a- |
| 1061 | 7.28E+09 | 0.13 | 511 | 0.36 | 2 | 0 | 16 | | 24bfe7f0-5 |
| 1062 | 7.21E+09 | 0.66 | 157 | 0.79 | 68 | 0 | 0 | 2450 LON( | 83faa049- |
| 1063 | 7.15E+09 | 0.26 | 33 | 0.26 | 0 | 3 | 10 | 3390 ATLA | cb17fa28- |
| 1064 | 7.28E+09 | 0.17 | 472 | 0.51 | 3 | 0 | 26 | 351 PACIFI | e9805ca0- |
| 1065 | 7.13E+09 | 0.32 | 93 | 1.48 | 12 | 0 | 0 | | aed3e5f7- |
| 1066 | 7.13E+09 | 0.44 | 90 | 0.44 | 0 | 3 | 10 | 4990 LON( | 0e748acf-l |
| 1067 | 7.13E+09 | 0.23 | 649 | 0.7 | 9 | 0 | 0 | 5689 ORAI | 65bf53ea- |
| 1068 | 7.27E+09 | 0.13 | 392 | 0.38 | 0 | 1 | 5 | 1404 ALAI | 7216b002- |
| 1069 | 7.26E+09 | 0.14 | 382 | 0.42 | 0 | 1 | 6 | | c320c1f1-6 |
| 1070 | 7.27E+09 | 0.2 | 192 | 0.92 | 13 | 0 | 0 | | b5f6ce8a-6 |
| 1071 | 7.13E+09 | 0.13 | 647 | 0.26 | 0 | 1 | 3 | 5510 LIND | fee92a51-9 |
| 1072 | 7.26E+09 | 0.26 | 383 | 0.26 | 0 | 3 | 10 | 2501 E AN | 3102e414- |
| 1073 | 7.15E+09 | 0.36 | 28 | 1.61 | 25 | 0 | 0 | 3333 ATLA | 6cd7b5b7- |
| 1074 | 7.14E+09 | 0.27 | 55 | 0.27 | 0 | 2 | 6 | 3860 LON( | 36f0e8c1- |
| 1075 | 7.3E+09 | 0.18 | 673 | 0.3 | 0 | 1 | 4 | 6900 LON( | cbbea2d3- |
| 1076 | 7.13E+09 | 0.35 | 661 | 0.35 | 0 | 2 | 9 | 6001 ATLA | bb483ccc- |
| 1077 | 7.13E+09 | 0.2 | 648 | 0.4 | 0 | 1 | 5 | 5574 ATLA | b6da3b8f- |
| 1078 | 7.28E+09 | 0.26 | 501 | 0.26 | 4 | 0 | 40 | 733 E BRO | b4fcefb5-e |
| 1079 | 7.21E+09 | 0.8 | 254 | 0.8 | 30 | 0 | 0 | 2150 ORAI | a27a68e6- |
| 1080 | 7.27E+09 | 0.12 | 538 | 0.31 | 0 | 1 | 3 | 1337 E 4TH | c3f18e8f-1 |
| 1081 | 7.27E+09 | 0.21 | 450 | 0.91 | 4 | 0 | 32 | 923 LON( | 17340159- |
| 1082 | 7.26E+09 | 0.19 | 265 | 0.38 | 0 | 2 | 7 | 1743 TEMI | a696c06d- |
| 1083 | 7.27E+09 | 0.17 | 360 | 1.01 | 26 | 0 | 0 | 535 E ANA | c9b7cfd7-e |
| 1084 | 7.28E+09 | 0.99 | 486 | 0.99 | 17 | 0 | 151 | 211 E OCE | a4b3d536- |
| 1085 | 7.24E+09 | 0.69 | 305 | 0.82 | 26 | 0 | 0 | 4313 E 10T | 15975b4b- |
| 1086 | 7.12E+09 | 0.28 | 626 | 0.8 | 11 | 0 | 0 | 1011 E AR | 37043aab- |
| 1087 | 7.27E+09 | 0.4 | 333 | 0.47 | 7 | 0 | 61 | 805 ELM A | 1d09d802- |
| 1088 | 7.31E+09 | 0.13 | 145 | 0.51 | 5 | 0 | 0 | 2686 SANT | cf96437e- |
| 1089 | 7.27E+09 | 0.16 | 528 | 0.48 | 0 | 1 | 4 | 541 NEBR/ | 9b219324- |
| 1090 | 7.27E+09 | 0.17 | 459 | 0.34 | 3 | 0 | 26 | 337 E 7TH | 5137ac39- |
| 1091 | 7.14E+09 | 0.19 | 61 | 0.55 | 7 | 0 | 0 | | 98799bb8- |
| 1092 | 7.13E+09 | 0.14 | 642 | 0.45 | 0 | 1 | 3 | 5727 WAL | 51fde55a- |
| 1093 | 7.27E+09 | 0.17 | 196 | 0.34 | 0 | 2 | 6 | 1719 CEDA | 59b82af4-l |
| 1094 | 7.26E+09 | 0.54 | 562 | 0.69 | 37 | 0 | 0 | 3322 E 7TH | b86154ab- |
| 1095 | 7.27E+09 | 0.17 | 411 | 0.51 | 17 | 0 | 0 | 219 W AN/ | ae453ebf- |
| 1096 | 7.28E+09 | 0.33 | 477 | 0.33 | 6 | 0 | 50 | 345 W 3RI | 51b558d0- |
| 1097 | 7.26E+09 | 0.15 | 548 | 0.29 | 0 | 1 | 4 | 374 CORO | 5c207504- |
| 1098 | 7.31E+09 | 0.59 | 672 | 0.59 | 22 | 0 | 0 | 6432 LON( | 63ca84af- |
| 1099 | 7.26E+09 | 0.15 | 554 | 0.3 | 0 | 1 | 4 | 3017 E 4TH | 7c20128b- |
| 1100 | 7.15E+09 | 0.52 | 37 | 1.53 | 36 | 0 | 0 | 577 E WAF | ebb5da0e- |
| 1101 | 7.13E+09 | 0.23 | 81 | 0.46 | 0 | 1 | 6 | 26 W MOU | 9ca23a8f-( |
| 1102 | 7.26E+09 | 0.54 | 566 | 0.54 | 37 | 0 | 0 | 700 REDOI | 36322deb- |
| 1103 | 7.27E+09 | 0.17 | 416 | 0.34 | 2 | 0 | 16 | 141 E ANA | f35391f6-4 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1104 | 7.26E+09 | 0.48 | 287 | 0.63 | 33 | 0 | 0 | 2938 E AN | b6b33040- |
| 1105 | 7.26E+09 | 0.15 | 271 | 0.3 | 0 | 1 | 6 | 3507 E RA | 408478f1- |
| 1106 | 7.12E+09 | 0.25 | 640 | 0.37 | 0 | 2 | 6 | 2800 E 63 | b74d0ec8- |
| 1107 | 7.27E+09 | 0.17 | 432 | 0.34 | 2 | 0 | 22 | 1107 PACI | 21d68b4a- |
| 1108 | 7.27E+09 | 0.29 | 201 | 0.29 | 2 | 0 | 20 | 1640 LON | 409bb47a- |
| 1109 | 7.27E+09 | 0.05 | 411 | 0.51 | 5 | 0 | 0 | 1311 PACI | aaf82738- |
| 1110 | 7.27E+09 | 0.28 | 361 | 0.44 | 0 | 4 | 16 | 505 E 14T | 484c56cd- |
| 1111 | 7.27E+09 | 0.6 | 465 | 0.6 | 8 | 0 | 76 | 627 MAG | e2814e0f- |
| 1112 | 7.13E+09 | 0.1 | 648 | 0.4 | 0 | 1 | 2 | 5564 ATLA | 3f0ad5b6- |
| 1113 | 7.26E+09 | 0.14 | 381 | 0.42 | 0 | 1 | 6 | 2235 E AN | 70bc3a8d- |
| 1114 | 7.21E+09 | 0.16 | 16 | 0.81 | 11 | 0 | 0 | 3069 LON | 4aa33c19- |
| 1115 | 7.26E+09 | 0.15 | 311 | 0.15 | 0 | 1 | 6 | 835 REDO | cc03d31e- |
| 1116 | 7.26E+09 | 0.14 | 388 | 0.42 | 0 | 1 | 6 | 1433 CHE | 45fbb338- |
| 1117 | 7.21E+09 | 0.15 | 125 | 0.29 | 1 | 0 | 4 | 2836 PACI | b6a5fe52- |
| 1118 | 7.26E+09 | 0.14 | 553 | 0.29 | 0 | 1 | 5 | 440 REDO | ec2038b5- |
| 1119 | 7.26E+09 | 0.53 | 227 | 0.53 | 36 | 0 | 0 | 2300 E PA | 1f66e810- |
| 1120 | 7.26E+09 | 0.26 | 263 | 0.26 | 0 | 3 | 10 | 3000 E PA | 19a4eff8-0 |
| 1121 | 7.27E+09 | 0.39 | 522 | 0.53 | 5 | 0 | 50 | 1020 E 7T | caf5294a-9 |
| 1122 | 7.26E+09 | 0.13 | 274 | 0.39 | 0 | 1 | 5 | 1450 RED | 9a908095- |
| 1123 | 7.28E+09 | 0.81 | 485 | 0.81 | 14 | 0 | 124 | | a19e4f98- |
| 1124 | 7.13E+09 | 0.23 | 85 | 0.57 | 10 | 0 | 0 | 59 W 52N | 420c7e01- |
| 1125 | 7.27E+09 | 0.17 | 509 | 0.33 | 2 | 0 | 22 | 975 E 4TH | 37c0e036- |
| 1126 | 7.27E+09 | 0.51 | 430 | 0.51 | 35 | 0 | 0 | 305 W AN | 96494633- |
| 1127 | 0 | 0.17 | 475 | 0.34 | 3 | 0 | 26 | 338 PACIF | d196de75- |
| 1128 | 7.27E+09 | 0.06 | 367 | 0.29 | 0 | 1 | 2 | | 2a322ae7- |
| 1129 | 7.21E+09 | 0.35 | 117 | 0.58 | 22 | 0 | 0 | 2467 ATLA | 6af0d902- |
| 1130 | 7.26E+09 | 0.44 | 279 | 0.63 | 30 | 0 | 0 | 3229 E AN | 432f730c- |
| 1131 | 7.28E+09 | 0.07 | 507 | 0.83 | 1 | 0 | 9 | 900 E 4TH | 5091b749- |
| 1132 | 7.31E+09 | 0.3 | 671 | 0.3 | 0 | 2 | 7 | 6230 LON | 03636a34- |
| 1133 | 7.27E+09 | 0.06 | 411 | 0.51 | 6 | 0 | 0 | 1319 PACI | 8f704fe6-5 |
| 1134 | 7.26E+09 | 0.54 | 377 | 0.54 | 37 | 0 | 0 | 2130 E AN | 1fca0aff-b |
| 1135 | 7.12E+09 | 0.13 | 627 | 0.41 | 0 | 1 | 3 | 1133 E AR | fa8e24a1- |
| 1136 | 7.12E+09 | 0.19 | 608 | 0.31 | 0 | 1 | 5 | 6542 N PA | 012ae64b- |
| 1137 | 7.21E+09 | 0.47 | 185 | 0.47 | 5 | 0 | 46 | 209 E PAC | 9155f788- |
| 1138 | 7.25E+09 | 0.6 | 266 | 0.72 | 26 | 0 | 0 | | fa27253a-5 |
| 1139 | 7.27E+09 | 0.16 | 369 | 0.64 | 11 | 0 | 0 | 1038 E AN | 84924316- |
| 1140 | 7.27E+09 | 0.17 | 451 | 0.59 | 3 | 0 | 26 | 912 LONG | 5ad326da- |
| 1141 | 7.22E+09 | 0.26 | 233 | 0.26 | 0 | 3 | 10 | 1601 E PA | 58472f61- |
| 1142 | 7.12E+09 | 0.35 | 637 | 0.75 | 13 | 0 | 0 | 6142 ATLA | 8a90b8d1- |
| 1143 | 7.27E+09 | 0.17 | 330 | 0.34 | 1 | 0 | 6 | 740 ATLAN | d60a6d04- |
| 1144 | 7.26E+09 | 0.2 | 223 | 0.4 | 0 | 2 | 8 | 1600 1/2 C | cd229448- |
| 1145 | 7.27E+09 | 0.45 | 410 | 0.45 | 5 | 0 | 44 | 1324 PINE | 6ba5c801- |
| 1146 | 7.27E+09 | 0.28 | 368 | 0.49 | 0 | 3 | 11 | 1250 ORA | 3b2ee76b- |
| 1147 | 7.26E+09 | 0.29 | 280 | 0.58 | 20 | 0 | 0 | 1347 RED | 386ab95f- |
| 1148 | 7.31E+09 | 0.14 | 139 | 0.27 | 0 | 1 | 3 | 1335 W W | efcd1966- |
| 1149 | 7.27E+09 | 0.34 | 423 | 0.34 | 0 | 3 | 14 | 240 W AN | 0f1b4d8d- |
| 1150 | 7.21E+09 | 0.13 | 152 | 0.97 | 5 | 0 | 0 | 2551 PACI | a359107b- |
| 1151 | 7.14E+09 | 0.14 | 53 | 0.29 | 0 | 1 | 3 | 4001 LON | 09d4843c- |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1152 | 7.12E+09 | 0.25 | 635 | 0.37 | 0 | 2 | 6 | 6184 ATLA | ffbff013-ca |
| 1153 | 7.26E+09 | 0.15 | 577 | 0.27 | 0 | 1 | 4 | 3932 E 4TH | ae1e0aa9- |
| 1154 | 7.28E+09 | 0.17 | 473 | 1.92 | 29 | 0 | 0 | 119 E 3RD | 4d99904a- |
| 1155 | 7.27E+09 | 0.5 | 366 | 0.5 | 34 | 0 | 0 | 1199 E AN | 2c9160eb- |
| 1156 | 7.21E+09 | 0.15 | 126 | 0.45 | 1 | 0 | 10 | 2654 PACI | a4f485ad-( |
| 1157 | 7.26E+09 | 0.15 | 559 | 0.3 | 0 | 1 | 6 | 2709 E 7TH | 7175f19a-7 |
| 1158 | 7.14E+09 | 0.3 | 52 | 0.3 | 0 | 2 | 7 | 4047 LONG | e3f0c176-5 |
| 1159 | 7.21E+09 | 0.28 | 176 | 0.62 | 19 | 0 | 0 | 431 W PAC | 7afcd114-5 |
| 1160 | 7.27E+09 | 0.33 | 455 | 0.54 | 6 | 0 | 50 | 738 PACIFI | bed1ecfe-7 |
| 1161 | 7.25E+09 | 0.14 | 304 | 0.41 | 0 | 1 | 3 | 1065 BELM | 51dc09b0- |
| 1162 | 7.26E+09 | 0.71 | 230 | 0.71 | 49 | 0 | 0 | 1600 E PA | aa434c25- |
| 1163 | 7.13E+09 | 0.13 | 646 | 0.72 | 6 | 0 | 0 | 5417 LIME | 84fa5788-1 |
| 1164 | 7.13E+09 | 0.23 | 81 | 0.46 | 0 | 1 | 6 | 30 W MOL | a71ce31f-3 |
| 1165 | 7.21E+09 | 0.18 | 183 | 1.02 | 23 | 0 | 0 | 1845 PACI | 55fa61f5-f |
| 1166 | 7.15E+09 | 0.59 | 26 | 1.18 | 41 | 0 | 0 | 3301 ATLA | 79f3adc0-8 |
| 1167 | 7.27E+09 | 1.32 | 216 | 1.32 | 91 | 0 | 0 | 1250 E PA | c921ae51- |
| 1168 | 7.15E+09 | 0.22 | 36 | 0.44 | 0 | 1 | 6 | 1061 E W | d3d4d613- |
| 1169 | 7.26E+09 | 0.72 | 283 | 0.87 | 50 | 0 | 0 | 2625 E AN | fc68ebe9-( |
| 1170 | 7.13E+09 | 0.54 | 93 | 1.48 | 20 | 0 | 0 | 15 W DEL | e3197bf6-1 |
| 1171 | 7.31E+09 | 0.17 | 147 | 0.41 | 0 | 1 | 4 | 2615 WEB | 46021709- |
| 1172 | 7.15E+09 | 0.57 | 29 | 0.57 | 40 | 0 | 0 | 530 E WAF | ec988205- |
| 1173 | 7.26E+09 | 0.14 | 381 | 0.42 | 0 | 1 | 6 | 2219 E AN | 6aa1eeb4- |
| 1174 | 7.28E+09 | 0.35 | 502 | 0.35 | 6 | 0 | 54 | 525 E BRO | 51fa92cd-9 |
| 1175 | 7.21E+09 | 0.05 | 120 | 0.33 | 0 | 1 | 4 | 550 E VERI | ed0607dc- |
| 1176 | 7.27E+09 | 0.18 | 346 | 0.37 | 0 | 2 | 6 | 1060 ALAN | 8977db4c- |
| 1177 | 7.26E+09 | 0.14 | 389 | 0.28 | 0 | 1 | 6 | 1519 CHEF | 001d6359- |
| 1178 | 7.21E+09 | 0.29 | 118 | 0.73 | 44 | 0 | 0 | 2572 ATLA | a37bbdd9- |
| 1179 | 7.14E+09 | 0.16 | 60 | 0.46 | 0 | 1 | 4 | 4216 ROSE | a7a074a2- |
| 1180 | 7.27E+09 | 0.15 | 350 | 0.3 | 0 | 1 | 6 | 1122 LIME | e3381cb0- |
| 1181 | 7.26E+09 | 0.27 | 378 | 0.27 | 0 | 3 | 10 | | ca41fce2-5 |
| 1182 | 7.26E+09 | 0.14 | 310 | 0.28 | 0 | 1 | 6 | 909 NEWP | 9ab5924c- |
| 1183 | 7.26E+09 | 0.14 | 228 | 0.33 | 0 | 1 | 6 | 2100 E PA | ed5fabef-8 |
| 1184 | 7.25E+09 | 0.32 | 302 | 0.64 | 22 | 0 | 0 | 4127 E AN | 1bbb870d- |
| 1185 | 7.27E+09 | 0.15 | 525 | 0.3 | 2 | 0 | 19 | 1036 E 6TH | c0fd56ce-( |
| 1186 | 7.26E+09 | 0.13 | 284 | 0.66 | 9 | 0 | 0 | 2841 E AN | eed2d5b2- |
| 1187 | 7.12E+09 | 0.14 | 626 | 0.8 | 5 | 0 | 0 | 1009 E AR | 9d7096ac- |
| 1188 | 7.27E+09 | 0.12 | 404 | 0.43 | 0 | 2 | 7 | 1420 PINE | 82f052e6-( |
| 1189 | 7.26E+09 | 0.16 | 606 | 0.46 | 0 | 1 | 4 | 216 LOMA | 9ec4487e- |
| 1190 | 7.27E+09 | 0.17 | 200 | 1.42 | 18 | 0 | 0 | 1633 LONG | 92950c02- |
| 1191 | 7.21E+09 | 0.11 | 241 | 0.8 | 11 | 0 | 0 | 1884 ATLA | 362cfc7b-7 |
| 1192 | 7.21E+09 | 0.12 | 241 | 0.8 | 12 | 0 | 0 | 1890 ATLA | b96512c2- |
| 1193 | 7.13E+09 | 0.249913 | 679 | 0.249913 | 0 | 0 | 3 | 5229 CHEF | 847a73d4- |
| 1194 | 7.13E+09 | 0.512114 | 680 | 0.512114 | 0 | 0 | 5 | 5003 CHE | 4bbd441f- |
| 1195 | 7.14E+09 | 0.511414 | 681 | 0.511414 | 0 | 0 | 6 | 4103 CHEF | 5a227546- |
| 1196 | 7.14E+09 | 0.314669 | 682 | 0.314669 | 0 | 0 | 5 | | 90468563- |
| 1197 | 7.14E+09 | 0.643798 | 684 | 0.643798 | 0 | 0 | 9 | 4001 CHEF | 76671bbc- |
| 1198 | 7.14E+09 | 0.299029 | 685 | 0.299029 | 0 | 0 | 3 | 645 E BIXB | a0f09f8a-a |
| 1199 | 7.14E+09 | 0.29791 | 686 | 0.29791 | 0 | 0 | 3 | 3801 CHEF | f0c0833f-1 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1200 | 7.26E+09 | 0.275373 | 687 | 0.275373 | 0 | 0 | 3 | 4000 E BR( | 7ae1deb3- |
| 1201 | 7.25E+09 | 0.291303 | 689 | 0.291303 | 0 | 0 | 3 | 299 PARK / | 050bfd3c-4 |
| 1202 | 7.24E+09 | 3.226399 | 690 | 3.226399 | 0 | 0 | 39 | 6500 E ATI | 49dc0b58- |
| 1203 | 7.22E+09 | 0.248782 | 691 | 0.248782 | 0 | 0 | 3 | 5033 E LO! | 28cd4fec-9 |
| 1204 | 7.22E+09 | 0.359229 | 692 | 0.359229 | 0 | 0 | 4 | 5195 E STE | 6c9f2205-3 |
| 1205 | 7.22E+09 | 1.9775 | 693 | 1.9775 | 45 | 0 | 0 | 5201 E STE | dcd27fed-( |
| 1206 | 7.23E+09 | 0.742108 | 694 | 0.742108 | 0 | 0 | 8 | 6200 E WI | aa37ddb8- |
| 1207 | 7.23E+09 | 2.833115 | 695 | 2.833115 | 82 | 0 | 0 | 6220 E WI | 4704a79e- |
| 1208 | 7.23E+09 | 2.319512 | 696 | 2.319512 | 0 | 0 | 30 | 2501 PALC | 5e64a85f-( |
| 1209 | 7.08E+09 | 1.071547 | 697 | 1.071547 | 0 | 0 | 12 | 3014 N STI | bf54bc8a-( |
| 1210 | 7.19E+09 | 0.254109 | 698 | 0.254109 | 0 | 0 | 3 | 3310 N LO | bc631947- |
| 1211 | 7.07E+09 | 1.069561 | 699 | 1.069561 | 0 | 0 | 13 | 3433 N STI | dfe08894- |
| 1212 | 7.07E+09 | 0.628868 | 700 | 0.628868 | 0 | 0 | 9 | 3445 N STI | d9f634ee-7 |
| 1213 | 7.19E+09 | 0.778703 | 701 | 0.778703 | 0 | 0 | 7 | 3840 WOC | 07646e95- |
| 1214 | 7.19E+09 | 1.828303 | 702 | 1.828303 | 0 | 0 | 23 | 3908 WOC | 5cde298c- |
| 1215 | 7.19E+09 | 1.201869 | 703 | 1.201869 | 0 | 0 | 14 | 3936 WOC | aeb07a39- |
| 1216 | 7.18E+09 | 0.359049 | 704 | 0.359049 | 0 | 0 | 4 | 4344 CLAR | 6cdaba0d- |
| 1217 | 7.07E+09 | 1.668017 | 705 | 1.668017 | 39 | 0 | 0 | 3401 N STI | 41f8b959-( |
| 1218 | 7.27E+09 | 0.29 | 207 | 1.1 | 56 | 0 | 0 | | 73d70cac- |

| Shape__Ar | Shape__Length |
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| 370.7344 | 77.11435 |
| 1010.754 | 146.7605 |
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| 816.1016 | 125.5152 |
| 809.3203 | 124.9821 |
| 4832.172 | 322.6078 |
| 1310.996 | 182.7828 |
| 1071.641 | 156.3697 |
| 3838.797 | 262.4978 |
| 1661.863 | 186.7354 |
| 909.9141 | 135.7024 |
| 794.875 | 129.4048 |
| 877.9141 | 134.9948 |
| 1013.523 | 147.1077 |
| 842.4375 | 128.3708 |
| 501.5313 | 104.4926 |
| 715.3711 | 114.0279 |
| 5092.914 | 302.7337 |
| 1126.676 | 148.7187 |
| 1381.695 | 187.4144 |
| 1819.465 | 181.1353 |
| 3649.496 | 285.4208 |
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| 820.8711 | 115.9686 |
| 2020.762 | 180.854 |
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| 3047.855 | 224.532 |
| 1833.422 | 191.9335 |
| 2926.93 | 216.4244 |
| 852.9531 | 121.73 |
| 2021.965 | 183.4893 |
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| 6363.832 | 322.2259 |
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| 1575.523 | 161.5474 |
| 842.8438 | 128.4013 |
| 2172.582 | 191.4594 |
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| 835.5039 | 119.4442 |
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| 1752.254 | 168.8319 |
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| 1924.578 | 213.6308 |
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| 1752.605 | 168.9524 |
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| 2572.164 | 205.4346 |
| 2557.676 | 223.9936 |
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| 826.0352 | 134.2437 |
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| 993.332 | 126.3554 |
| 2460.285 | 200.2541 |
| 2406.098 | 192.513 |
| 1018.977 | 147.3972 |
| 1354.48 | 150.9289 |
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**EXHIBIT M**

MapsLB

Sign In

# Housing Element Site Inventory

**Private Member**
City of Long Beach, CA

## Summary

Housing Element Site Inventory

View Full Details

## Details

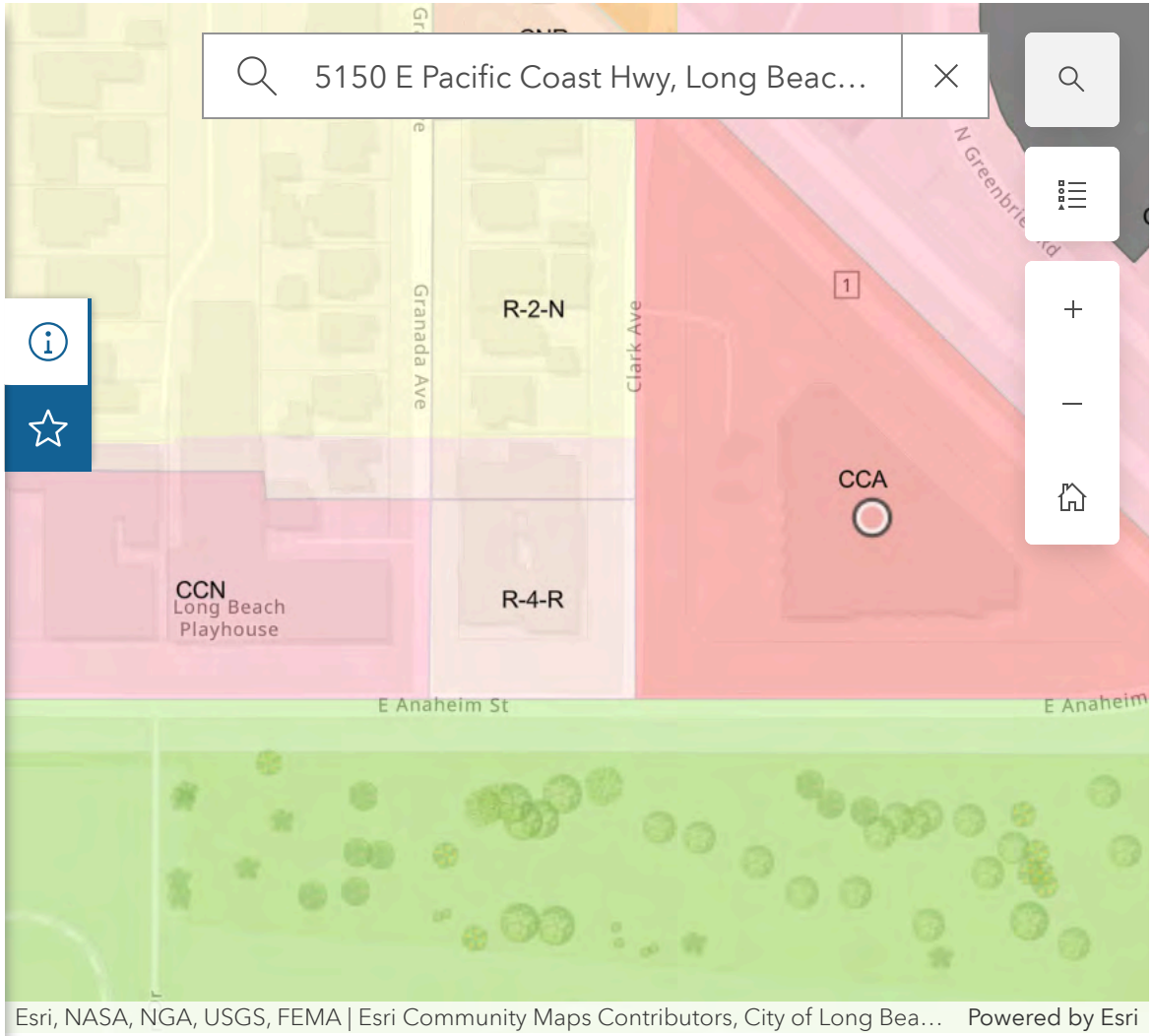
**Map**
Web Map

**April 19, 2023**
Date Updated

**July 27, 2022**
Published Date

**Public**
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I want to use this

MapsLB

Sign In

# Housing Element Site Inventory

Private Member

City of Long Beach, CA

## Summary

Housing Element Site Inventory

View Full Details

## Details

**Map**
Web Map

**April 19, 2023**
Date Updated

**July 27, 2022**
Published Date

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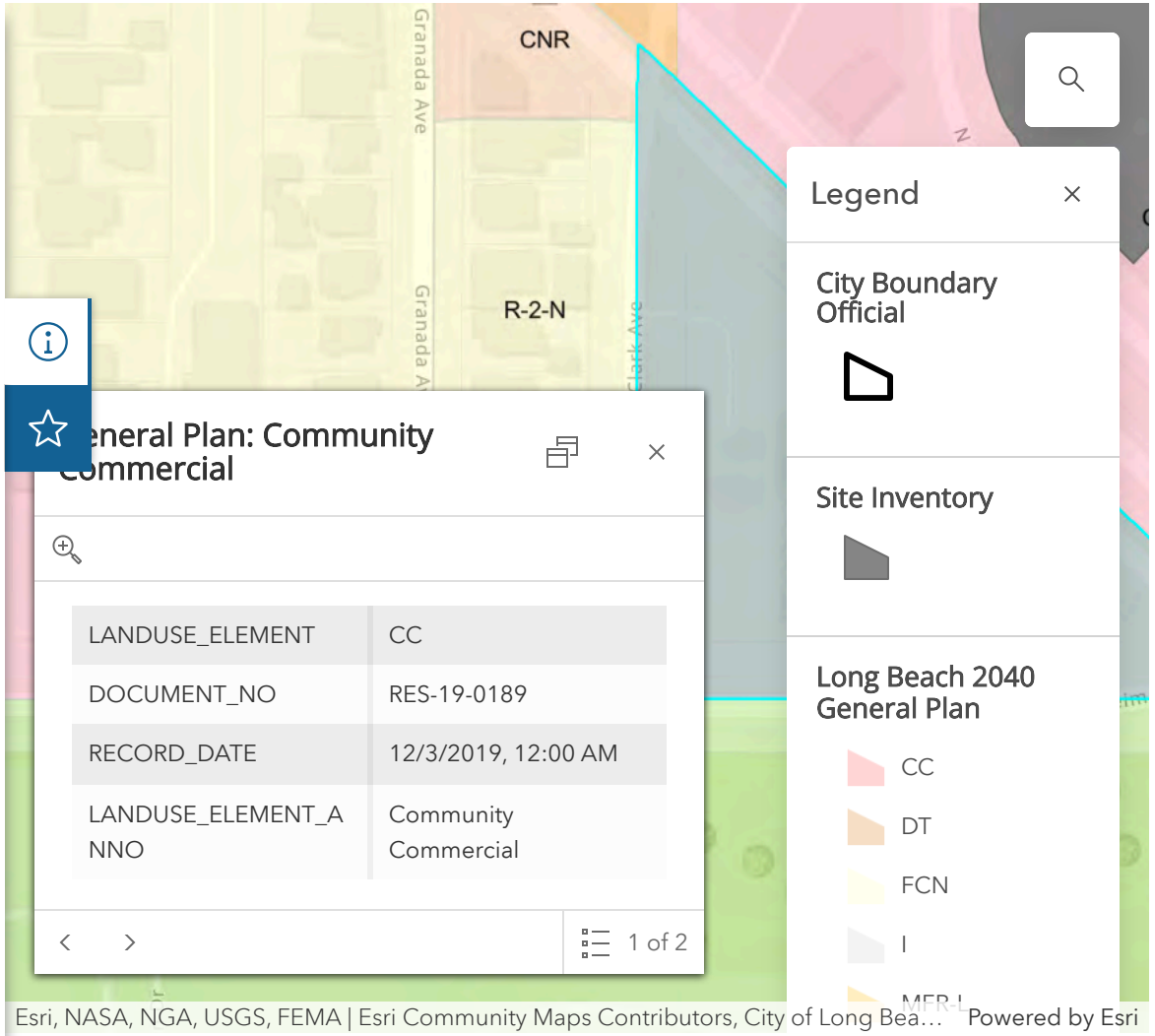


**EXHIBIT N**

California wildfires

# 'It feels apocalyptic': Californians on the loss and devastation from LA wildfires

## Residents share their stories of evacuation, destruction of homes, and air pollution amid ongoing blazes

Los Angeles fires: the damage in maps, video and images



A destroyed home in the Pacific Palisades neighborhood of Los Angeles on Friday. Photograph: Mike Blake/Reuters

**Jem Bartholomew *and* Rachel Obordo**

Fri 10 Jan 2025 19.53 EST

At least 16 people have been killed, thousands of structures have been burned to the ground and nearly 180,000 people have been evacuated as wildfires continue to blaze in Los Angeles.

The Palisades fire is the largest, with more than 20,000 acres (8,090 hectares) burning, then Eaton at nearly 14,000 acres. Officials are reporting some progress with the Hurst fire, which was 37% contained as of Friday morning, and the Lidia fire in Acton, which was 75% contained. The Kenneth fire is nearly 1,000 acres and 35% contained.

People in Los Angeles shared their experiences of near escapes, evacuations, the destruction of neighborhoods and the smothering impact of air pollution across the city.

## 'All that was left standing was the chimney. My brain couldn't compute it'

**Most viewed**



Thought UnitedHealthcare couldn't get more awful? They've gone villain mode
Arwa Mahdawi



Michelle Obama to skip inauguration after absence at Jimmy Carter's funeral



Oregon hospital sued after man's face caught fire mid-surgery



Live
LA fires live: southern California residents brace for new wildfire warnings as nearly 90,000 people still under evacuation orders

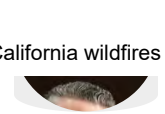
Pete Hegseth's tense confirmation hearing ends



The remains of Marcus Beer's home after it burned down. Photograph: Marcus Beer/Guardian Community

Me and my wife, Shawna, had been following this weather pattern for a while and knew the winds were coming, so we prepared by getting everything into the car on Tuesday evening, just in case. Then we saw the Palisades fire hit and thought: "Those poor people! I hope nothing happens here."

We hadn't had rain in 10 months. It was dry - southern California was a tinderbox. Tuesday evening, the



with no sign of Republican defections against Trump's Pentagon pick – as it happened



Marcus Beer and Shawna Dawson Beer, pictured in their backyard at Christmas in 2022, lost their house in Altadena to the flames. Photograph: Roxie Allen/Guardian Community

smoke started to come in. When I was packing the car, I looked over the left shoulder, and what is normally the pitch-black silhouette of a mountain was this bright, orange tower of flame that was maybe a mile away. That night we left around 8.30pm - not from an evacuation alert, but we just told neighbors: "It's time." We drove to a friend's house in Long Beach.

We kept in touch with our community through a group chat. That night, fire was spreading on our street. At around 3am on Wednesday morning, a neighbor who was trying to contain the flames said he was leaving. Shawna asked him: "What do you mean?" He said: "Shawna, it's over. The block will be gone tomorrow."

The next day someone sent us a picture of our home. All that was left standing was the chimney. It was like when I was in New York during 9/11 - my brain just couldn't compute it.




The remains of Marcus Beer's home after it burned down – video

We drove back on Wednesday to see what was left. It was like the house and area had collapsed in on itself. I walked around to where our kitchen was and thought: “Oh look, the Le Creuset cookware survived.” It was surreal. I went to my office and games room and thought: “I don’t remember that piece of machinery?” It was twisted metal from our central air system that fell down from the loft. I walked around to our bedroom; there was nothing there.

On top of everything, I have stage four prostate cancer. The stress hasn’t been good, and the smoke inhalation has made my chest hurt. It was better when we got to Long Beach but now the air quality is bad here and I’m wheezing again. It’s just devastating - that house was like another child to us. We filled it with love, it was everything we wanted. The fact was, I was planning on dying in that house. That was our plan. I didn’t want to go to a hospital or hospice when the time comes, I just wanted to die in the house that I shared with my wife. Now that’s all gone.



Marcus Beer's home before the fire. Photograph: Marcus Beer/Guardian Community

Worst of all, our community is gone. We used to see our neighbors every day, and now we’ve been scattered to the far winds. The fact is, Altadena died on Wednesday morning, and it’s not coming back. **Marcus Beer, 54, video games consultant, Altadena**

## ‘It’s hard to imagine life there again’

My wife, Sophie, and I, with our eight-week-old daughter and cat, Luna, live streets away from Eaton Canyon in Altadena, where one of the fires began. We go for walks down that canyon most mornings. It’s a beautiful place.





Sadie, 41, was forced to evacuate his home in Altadena – with his wife, cat and newborn baby. He took this photo of nearby flames. Photograph: Matt Sadie/Guardian Community

On Tuesday we were driving home - we'd gone to try and get our newborn to sleep - when we noticed this bright yellow and orange glow towards the canyon. It was a light you don't see from an artificial source. And there was smoke.

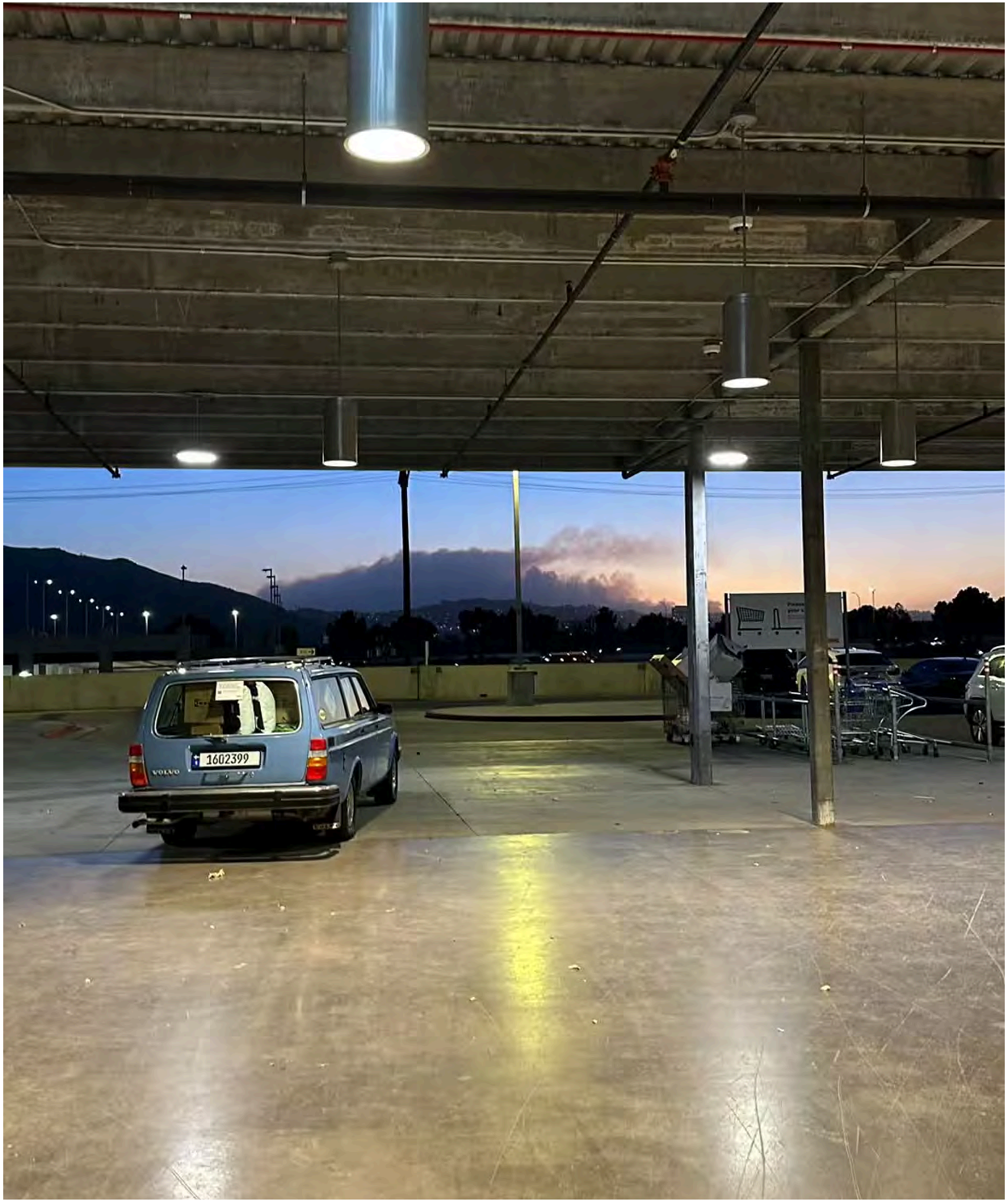


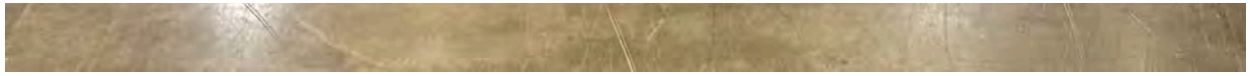
Matt Sadie and Sophie Giblin, with their newborn baby daughter. Photograph: Matt Sadie/Guardian Community

We rushed home, fighting intense winds and keeping our baby safe. Once we were in, I ran next door to warn our neighbor. He said: "We need to get out of here quickly." So I ran to tell my wife and we started packing. The power was out, but we had battery-powered tea lights. I grabbed passports, cash, documents, baby stuff like blankets and diapers. I got Luna into her carrier quickly, which she doesn't like. We evacuated in under five minutes. I didn't think about how we wouldn't be back for a long time.

We managed to drive to family in Santa Barbara. The highway was insane, with trees and debris. Going to sleep that night around midnight, we mentally prepared ourselves for losing our home.

Miraculously, despite most of the houses on our street having burned down, we saw from a neighbor's video that ours remains standing, with only damage to the landscaping (like the fences). It's as if the flames stopped right at our house. A neighbor, who stayed during the fire, helped protect our home from the flames and saved all the houses beyond it, too.


VOLVO
1602399



Sadie first noticed smoke on the horizon, then 'this bright yellow and orange glow towards the canyon'. Photograph: Matt Sadie/Guardian Community

We got insanely lucky, but we don't *feel* lucky at all. We moved to the area to give my daughter the best start in life, near a really good school, in a great neighborhood. Now the school's burned down and the area is almost totally gone. It's really hard to imagine life there again.

We can't get back home; the national guard has closed off the streets. Looters in the area are the new challenge. The neighbor who stayed behind has been patrolling for other fires and looters and caught two in the area already. He's a hero. **Matt Sadie, 41, artist manager in the music business, Altadena**

## 'The air is so bad I wear a mask inside'



Denise says she is feeling climate anxiety 'quite intensely' right now. Photograph: Denise/Guardian Community

I think I speak for a lot of Los Angelenos when I say, while I'm not in the path of a fire, this has been the most impactful firestorm I can remember. Probably a dozen of my friends, colleagues and neighbors have needed to evacuate. I know at least one person who has lost their home, several more whose possessions and housing are threatened.

I've been spending a lot of time on Watch Duty [an app that shares real-time updates of wildfires] to see where the wind is blowing. Yesterday the closest fire to me was the Sunset fire, which was about 5 miles north [and has now been contained]. I couldn't see the fire but I could see the smoke coming south.

The air quality in the city is devastatingly bad. I'm recovering from Covid and wearing a mask inside my house because the

smoke irritates my throat. I've also noticed a persistent headache for most of the day.





Smoke in the air in West Adams. Photograph: Denise/Guardian Community

Most of LA is under a red flag warning, which means the area is dry and anything can spark a fire. As someone who lives in the city it's really unsettling to think you're surrounded by things that can go up in flames. It's a tinderbox.

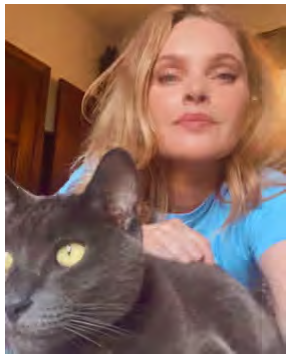
I've lived here for about 27 years and there have been all kinds of natural disasters. But this one feels like the largest impact on day-to-day life. I don't recall a situation where so many people I know have been directly affected.

I know the fires are not an immediate threat to me, but it's been really difficult to sleep. I'm feeling climate anxiety quite intensely right now.
**Denise, 52, program manager in the tech industry, West Adams**

## 'A palpable sense of loss and suffering'

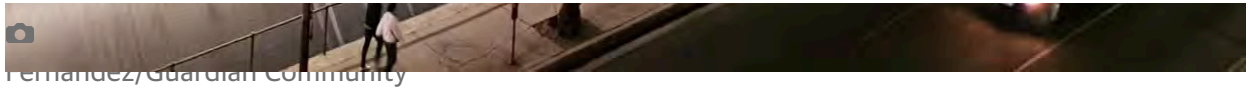
I watched in a mixture of disbelief, awe and horror on Tuesday to see large smoke clouds first emerge to the west (Palisades) and then to the east (Eaton and Altadena). When the Sunset fire broke out on Wednesday night, much closer to me in the north, I had this sense of being surrounded by flames and smoke.

Luckily the Sunset fire emerged on a day when the winds had died down and water airdrops were possible. But it was very claustrophobic. There was a palpable sense of loss and suffering.



Silvia Fernandez, with her cat Delphina, says she's getting constant headaches from the smoke. Photograph: Silvia Fernandez/Guardian Community


7955
CAR WASH



Fernandez/Guardian Community

I just have this sense of doom. It feels apocalyptic - I know it's an overused term, but it's what comes to mind. My neighbors and I watched the aircraft do their magic [dropping water] above the visible flames. I felt fortunate in those moments, to have a little community of safety.

It's horrible that so much history has been lost, and so much natural beauty.
**Silvia Fernandez, 59, federal government contractor, Hancock Park**

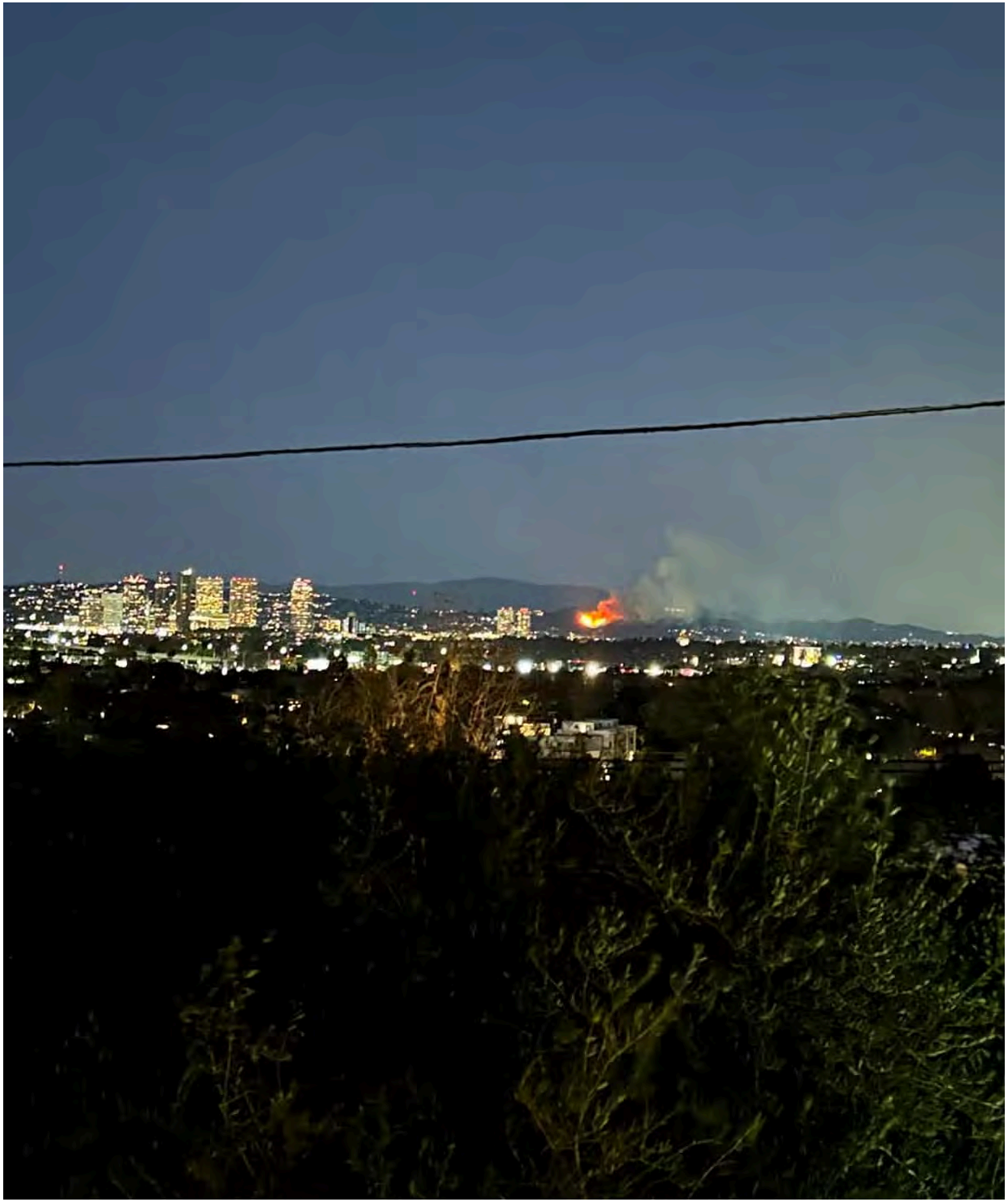
## 'Seeing the community really come together has been heartwarming'

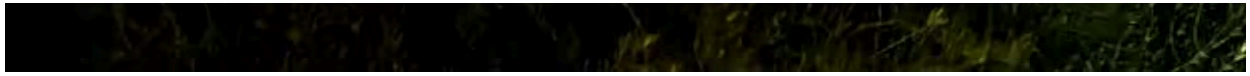


Lila Victor, 22, says it has been heartwarming to see the people come together to help each other in awful circumstances. Photograph: Lila Victor/Guardian Community

I live in Venice, pretty close to Santa Monica. We haven't had any actual fires or evacuation orders here, but it's still been very stressful with all the uncertainty. I'm born and raised in LA, so watching my home town be partly destroyed has been really difficult.

We've seen giant clouds of smoke. On Wednesday evening, we were up on my friend's balcony in Mar Vista and my mom saw this bright orange glow - she thought it was a reflection at first. Then we watched as it just expanded so rapidly on the hills in the distance. Later we realized we'd watched the Sunset fire spreading.



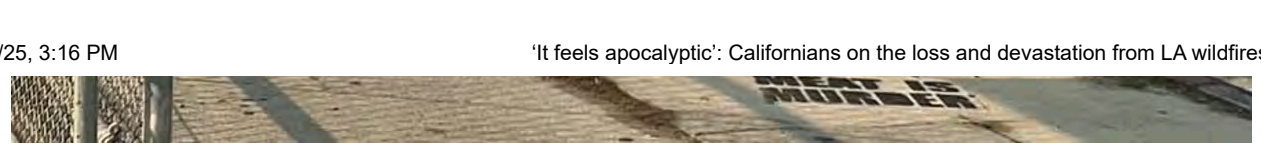


Victor watched the Sunset fire break out and spread rapidly on Wednesday evening. Photograph: Lila Victor/Guardian Community

I write for a local news site called the Westside Current. On Tuesday, I felt paralyzed and was asking myself: "What can I do to help?" Then I realized people were posting links online of restaurants that were offering free meals to first responders and evacuees, or were opening their doors to the community - for shelter, wifi, bathrooms, anything. I realized I could be helpful by putting together a list, and keep it updated, so people could find support.

Seeing the community really come together right now - to be there for the people who may need their services, supplies - has been heartwarming. We've seen reports of people taking advantage of this horrible situation by looting, but the people rallying together to help each other in the community far outnumber them. To see these little pockets of light is really important.


Palms Blvd
ELEVEN



Smoke rises over Palms Boulevard. Photograph: Lila Victor/Guardian Community

Sleeping is not easy right now. It's all so tense. I saw a childhood friend posting online that their home in Palisades - which I used to visit as a child, where I had so many memories - has burned down. And hundreds of thousands are displaced. This has been a real wake-up call for disaster preparedness. Now we're just gearing up for the next thing that happens. **Lila Victor, 22, freelance journalist, Venice**

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CITY OF LONGBEACH

# PRESS RELEASE

City of Long Beach
Public Information Office
411 W. Ocean Blvd,
Long Beach, CA 90802
www.longbeach.gov

**1/14/2025**

FOR IMMEDIATE RELEASE Press Release # 011425

**Subject:** **City Health Officer Advises Residents to Avoid Leaf Blowers While LA Region is Impacted by Wildfires**

**Contact:** Joint Information Center
562.570.NEWS (media only)
JIC@longbeach.gov

Long Beach, CA – Long Beach City Health Officer, Dr. Anissa Davis, has recommended that residents and landscaping businesses avoid using leaf blowers while the Los Angeles region continues to be significantly impacted by the ongoing fires.

While the wildfire activity is located more than 35 miles away, the ash from wildfires can travel great distances before settling on the ground. Using leaf blowers could stir up the ash, which in turn could impact air quality.

The Los Angeles County Department of Health, which oversees cities including Pacific Palisades, Altadena and Santa Clarita, has recently declared a Health Emergency related to the fires and their health officer has issued a health order prohibiting leaf blowers.

The City of Long Beach is its own health jurisdiction and monitors air specifically in Long Beach. While the quality of air locally does not dictate an order to prohibit the use of leaf blowers at this time, Dr. Davis has made the recommendation out of an abundance of caution.

As an alternative to leaf blowing, residents can hose down surfaces with a gentle stream of water, use a shop vacuum or use a broom with softer bristles and lightly dampen the ground beforehand to minimize

resuspending any ash.

Media inquiries can be directed to the Joint Information Center at jic@longbeach.gov.

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For more news, pictures, videos and announcements of what's happening in Long Beach, follow us on Facebook, Twitter, Instagram and YouTube.

**EXHIBIT O**

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mhagemann@swape.com

December 3, 2018

Naira Soghbatyan
215 N. Kenwood St.
Glendale, CA 91206

**Subject: Comments on the Glendale Unified School District Site Apartment Project**

Dear Ms. Soghbatyan,

We have reviewed the October 2018 Draft Sustainable Communities Environmental Assessment (SCEA) for the Glendale Unified School District Site Apartment Project ("Project") located in the City of Glendale. The Project proposes to demolish an existing office building and former storage warehouse in order to construct a new 4-story multifamily residential building with 192 dwelling units, six new residential units proposed as an adaptive re-use on the second floor of the existing office building (231 N. Jackson Street), and the rehabilitation of 9 existing dwelling units (241 N. Jackson Street), and 244 on-site parking spaces. Additionally, the Project will convert a portion of the existing 20,300 square foot office building to include 6 residential units and redevelop an existing 9-unit apartment building. The Project Applicant purchased 2.39-acres from GUSD for the Project site, however, the Project Applicant is seeking to analyze the Project as a 3.42-acre site that includes the existing Allan F. Daily High School and parking lot that the GUSD retain ownership of. Under Scenario 1 of the Project, the Project site would be expanded to this 3.42-acre size in order to include the high school and parking lot. Under Scenario 2, the Project site would remain at 2.39-acres.

Our review concludes that SCEA fails to adequately evaluate the Project's Hazards and Hazardous Waste, Air Quality, and Greenhouse Gas (GHG) impacts. As a result, the emissions that will be generated during operation are not properly mitigated. A Draft Environmental Impact Report (DEIR) should be prepared to adequately mitigate the hazards, air quality, and GHG impacts that the Project will have on the surrounding environment.

## Hazards and Hazardous Waste

### A Phase II Environmental Assessment is Necessary

The completion of a Phase II Environmental Assessment (ESA) is necessary prior to Project approval. A 2015 Andersen Environmental Phase I ESA stated that the existence of an underground storage tank, without soil sampling was considered a recognized environmental condition (REC) and a Phase II Environmental Assessment was recommended (p. 26). A subsequent 2017 Phase I ESA did not find the

underground storage tank to constitute a REC (p. iii); however, the finding of one Phase I consultant does not negate the findings of another Phase I consultant unless there was additional sampling or investigation, as recommended by Anderson. There has been no additional investigation of the underground storage tank. Therefore, a Phase II ESA is necessary to evaluate potential soil contamination related to the underground storage tank.

# Air Quality

## Unsubstantiated Input Parameters Used to Estimate Project Emissions

The SCEA for the Project relies on emissions from the California Emissions Estimator Model Version CalEEMod.2016.3.2 ("CalEEMod").[1] CalEEMod provides recommended default values based on site specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with project type. If more specific project information is known, the user can change the default values and input project-specific values, but CEQA requires that such changes be justified by substantial evidence.[2] Once all of the values are inputted into the model, the Project's construction and operational emissions are calculated, and "output files" are generated. These output files disclose to the reader what parameters were utilized in calculating the Project's air pollutant and GHG emissions, and make known which default values were changed as well as provide a justification for the values selected.[3]

When reviewing the Project's CalEEMod output files, located in Appendix A, we found that several of the values inputted into the model are not consistent with information disclosed in the SCEA and are not consistent with guidance set forth by the South Coast Air Quality Management District (SCAQMD). As a result, emissions associated with the Project are greatly underestimated. A DEIR should be prepared that adequately assesses the potential impacts that operation of the Project may have on regional and local air quality and global climate change.

### *Incorrectly Applied Mitigation Measure to Construction Emissions*

Review of the Project's CalEEMod output files demonstrates that the Project's construction-related emissions were estimated assuming use of Tier 3 mitigated engines for all pieces of off-road construction equipment. This, however, is incorrect and inconsistent with what is mandated in Mitigation Measure MM AQ-1.

Mitigation Measure MM AQ-1 states that off-road construction equipment greater than 50 horsepower (hp) that will be utilized during construction should be equipped with mitigated engines (Appendix A, pp. 32, pp. 63, pp. 90). According to the SCEA,

> "SCAQMD staff recommends Mitigation Measure MM AQ-1, that the Lead Agency at the minimum use off-road diesel-powered construction equipment that meets or exceeds the CARB

[1] CalEEMod website, *available at*: http://www.caleemod.com/
[2] CalEEMod User Guide, p. 2, 9, *available at:* http://www.caleemod.com/
[3] CalEEMod User Guide, p. 7, 13, *available at:* http://www.caleemod.com/ (A key feature of the CalEEMod program is the "remarks" feature, where the user explains why a default setting was replaced by a "user defined" value. These remarks are included in the report.)

and USEPA Tier 3 off-road emissions standards for equipment rated at 50 horsepower or greater during Project construction to further reduce criteria pollutant emissions" (p. 5.0-14).

MM AQ-1 clearly states that the mitigation measure only applies to off-road diesel-powered construction equipment above 50 (hp). Therefore, construction equipment with engines less than 50 hp are not required to meet Tier 3 emission standards under Mitigation Measure MM AQ-1 and therefore should not be equipped with this cleaner burning equipment. The Project Applicant, however, models emissions assuming that *all* of the 24 pieces of proposed construction equipment will be equipped with Tier 3 engines (Appendix A, pp. 31-32, pp. 62-63, pp. 89-90). Review of the construction equipment list within the Project's CalEEMod output files demonstrates that this is completely incorrect, as there are 4 pieces of construction equipment with less than 50 engines (Appendix A, pp. 36-37, pp. 67, pp. 94). Therefore, MM AQ-1 does not apply to the 3 welders that will be used during the Building Construction phase or the cement and mortar mixer that will be used during the Paving phase of construction. As a result, these 4 pieces of construction equipment should not have been modeled assuming use of Tier 3 mitigation.

### *Failure to Assess Feasibility of Obtaining Tier 3 Equipment*

Regardless of the fact that that the Project incorrectly applies Tier 3 mitigated engines to all of the proposed construction equipment, the SCEA first fails to assess the feasibility of obtaining an entire fleet of Tier 3 equipment for Project construction (Appendix A, pp. 32, pp. 63, pp. 90). Due to the limited number of Tier 3 construction equipment available, the SCEA should have assessed the feasibility in obtaining construction equipment equipped with Tier 3 engines. By failing to demonstrate how the Project will actually comply with this mitigation measure, this measure is unenforceable and thus, the Project Applicant cannot claim the emissions reductions from this measure.

The U.S. EPA's 1998 nonroad engine emission standards were structured as a three-tiered progression. Tier 1 standards were phased-in from 1996 to 2000 and Tier 2 emission standards were phased in from 2001 to 2006. Tier 3 standards, which applied to engines from 37-560 kilowatts (kW) only, were phased in from 2006 to 2008. The Tier 4 emission standards were introduced in 2004 and were phased in from 2008 to 2015. [4] These tiered emission standards, however, are only applicable to newly manufactured nonroad equipment. According to the U.S. EPA, "if products were built before EPA emission standards started to apply, they are generally not affected by the standards or other regulatory requirements."[5] Therefore, pieces of equipment manufactured prior to 2000 are not required to adhere to Tier 2 emission standards, and pieces of equipment manufactured prior to 2006 are not required to adhere to Tier 3 emission standards. Construction equipment often lasts more than 30 years; as a result, Tier 1 equipment and non-certified equipment are currently still in use.[6] It is estimated that of the two million

[4] Emission Standards, Nonroad Diesel Engines, *available at:* https://www.dieselnet.com/standards/us/nonroad.php#tier3

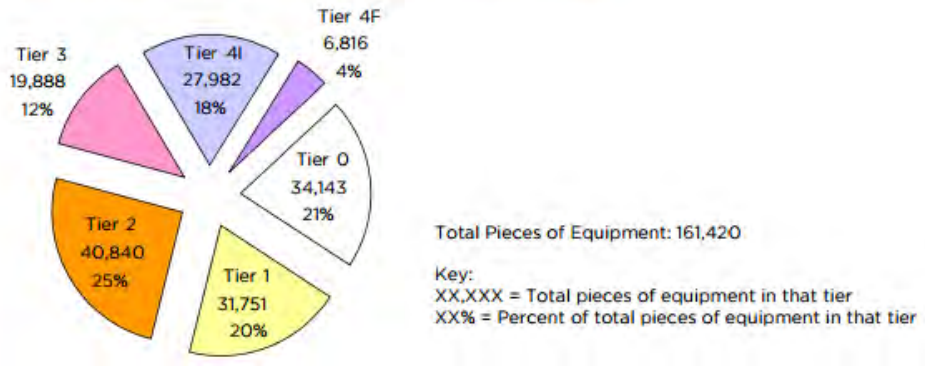
[5] "Frequently Asked Questions from Owners and Operators of Nonroad Engines, Vehicles, and Equipment Certified to EPA Standards." United States Environmental Protection Agency, August 2012. *Available at:* http://www.epa.gov/oms/highway-diesel/regs/420f12053.pdf

[6] "Best Practices for Clean Diesel Construction." Northeast Diesel Collaborative, August 2012. *Available at:* http://northeastdiesel.org/pdf/BestPractices4CleanDieselConstructionAug2012.pdf

diesel engines currently used in construction, 31 percent were manufactured before the introduction of emissions regulations.[7]

Although Tier 3 engines are currently being produced and installed in new off-road construction equipment, the vast majority of existing diesel off-road construction equipment in California is not equipped with Tier 3 engines.[8] In a 2010 white paper, the California Industry Air Quality Coalition estimated that approximately 7% and less than 1% of all off-road heavy duty diesel equipment in California was equipped with Tier 2 and Tier 3 engines, respectively.[9] Similarly, based on information and data provided in the *San Francisco Clean Construction Ordinance Implementation Guide for San Francisco Public Projects*, the availability of Tier 3 equipment is extremely limited. In 2014, 25% of all off-road equipment in the state of California were equipped with Tier 2 engines, approximately 12% were equipped with Tier 3 engines, approximately 18% were equipped with Tier 4 Interim engines, and only 4% were equipped with Tier 4 Final engines (see excerpt below).[10]

Figure 4: 2014 Statewide All Fleet Sizes (Pieces of Equipment)




As demonstrated in the figure above, Tier 3 equipment only accounts for 12% of all off-road equipment currently available in the state of California. Thus, by stating that the Project proposes to use Tier 3 equipment during construction, the SCEA's analysis is relying on a fleet of construction equipment that only accounts for 12% of all off-road equipment currently available in the state of California. Therefore, by failing to evaluate the feasibility of implementing Tier 3 mitigation into the Project's construction

[7] Northeast Diesel Collaborative Clean Construction Workgroup, *available at:* http://northeastdiesel.org/construction.html

[8] California Industry Air Quality Coalition White Paper, p. 3, *available at:* http://www.agc-ca.org/uploadedFiles/Member_Services/Regulatory-Advocacy-Page-PDFs/White_Paper_CARB_OffRoad.pdf

[9] "White Paper: An Industry Perspective on the California Air Resources Board Proposed Off-Road Diesel Regulations." Construction Industry Air Quality Coalition, *available at:* http://www.agc-ca.org/uploadedFiles/Member_Services/Regulatory-Advocacy-Page-PDFs/White_Paper_CARB_OffRoad.pdf

[10] "San Francisco Clean Construction Ordinance Implementation Guide for San Francisco Public Projects." August 2015, *available at:* https://www.sfdph.org/dph/files/EHSdocs/AirQuality/San_Francisco_Clean_Construction_Ordinance_2015.pdf, p. 6

phases, the Project's estimated mitigated construction emissions are unsupported and the significance determination made within the SCEA should not be relied upon.[11]

### *Failure to Account for All Land Uses During Project Operation*

Review of the SCEA and the CalEEMod output files demonstrates that the Project Applicant failed to evaluate all land uses that will operate on the Project site at full Project buildout (Appendix A, pp. 30, pp. 61, pp. 88). As previously mentioned, the Project Applicant will construct a new, 4-story residential building as well as renovate an existing office building and apartment building (pp. 12). Under Scenario 1, the Project site would be expanded to include an existing high school and parking lot, however under Scenario 2, the Project would only include the proposed uses. Review of the CalEEMod output files demonstrates the following: (1) the Project Applicant failed to account for the emissions generated from all residential units and the existing office space during Project operation; and (2) the Project Applicant failed to evaluate the operational emissions resulting from the existing land uses under Scenario 1.

#### Model Fails to Account for All Residential Units and Existing Office Space During Operation

Review of the CalEEMod output files demonstrates that the Project Applicant failed to estimate the emissions resulting from all proposed residential units and from the existing office building on the Project site. As a result, operational emissions are potentially significantly underestimated.

According to the SCEA, "The Applicant is requesting approval of 207 residential units on the 2.39-acre Project site. The 207-units would include the 9 units that are in the existing building located at 241 N. Jackson Street, 6 units that are in the existing 20,300 square foot office building at 231 N. Jackson Street, and 192-units in a newly constructed multi-family residential building." (p. 1.0-2). Therefore, the Project would construct 192 residential units in a new building and renovate the 20,300 square foot office building to include 6 residential units. Review of the CalEEMod output files demonstrates that the Project Applicant correctly accounted for the 192 proposed residential units that will be constructed in the new residential building and the 6 residential units that will be constructed within the existing 20,300 square foot office building. However, the CalEEMod fails to account for the other 9 residential units and the office space that will also be in operation and will generate emissions (see excerpt below) (appendix A, pp. 30, pp. 61, pp. 88).

[11] We understand that the Project's construction-related criteria air pollutant emissions do not exceed thresholds with or without inclusion of Tier 3 mitigation, however, because the SCAQMD is recommending use of Tier 3 mitigation in order to ensure that impacts are less than significant and because the "proposed project has the potential to impact air quality standards" it is important that the Project Applicant accurately reports the Project's mitigated emissions.

**GUSD Apartment Site Project**
**Los Angeles-South Coast County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Enclosed Parking with Elevator | 244.00 | Space | 0.40 | 97,600.00 | 0 |
| Other Non-Asphalt Surfaces | 69.17 | 1000sqft | 0.00 | 41,288.00 | 0 |
| Apartments Mid Rise | 198.00 | Dwelling Unit | 1.40 | 176,769.00 | 566 |

As you can see in the excerpt above, the Project Applicant completely omits the additional 9 residential units and the existing office space from its analysis. According to the CalEEMod User's Guide, the correct land use type and size is necessary in order to correctly calculate impacts from architectural coatings and energy use.[12] As a result, the operational emissions associated with the Project are incorrect and should not be relied upon to estimate emissions.

### Model Fails to Account for Existing Land Uses Under Scenario 1

As previously mentioned, the Project Applicant has proposed two scenarios for the Project. The SCEA states,

> "The first scenario is the applicant's preferred scenario that includes all 5 lots (including the existing high school (lot 5) and the parking lot (lot 4)) that will be retained by GUSD and not developed; the second scenario calculates the deviation from the zoning code standards based on that square footage of the project site that excludes lots 4 and 5" (p. 2.0-5).

Therefore, under Scenario 1, the proposed Project would be expanded to a 3.42-acre site that would include the existing Allan F. Daily High School and an existing parking lot in addition to the proposed Project. Review of the Project's CalEEMod output files, however, demonstrates that the Project Applicant only modeled emissions under Scenario 2. Since CEQA requires that the most conservative analysis be conducted, and the Project Applicant's preferred scenario is to include lots 4 and 5 as part of the Project site, these existing land uses should be analyzed as part of the Project. Failure to do so greatly underestimates the operational emissions that will be generated on the Project site. Prior to Project Approval, operational emissions from Scenario 1 should be evaluated and compared to SCAQMD thresholds.

## Updated Analysis Indicates Significant Criteria Air Pollutant Emissions

In an effort to accurately determine the Project's construction and operational emissions, we prepared two updated CalEEMod models that include more site-specific information and correct input parameters. Our first air pollution model estimates the Project's construction-related emissions and does not include any Tier 3 off-road construction equipment, as there is not substantial evidence that the Project Applicant will be able to have an entire fleet of Tier 3 equipment. Our second air pollution

[12] http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 28

model estimates the Project's operational emissions and accounts for all existing and proposed land uses on the Project site that will be in operation under Scenario 1.

When correct, site-specific input parameters are used to model emissions, we find that the Project's operational ROG emissions exceed the 55 pounds per day (lbs/day) threshold set forth by the SCAQMD (see table below).

| **Maximum Daily Operational Emissions (lbs/day)** | |
|---|---|
| **Model** | **ROG** |
| Existing Emissions | 2 |
| Net SCEA | 4 |
| Net SWAPE | 61 |
| **Percent Increase** | **1,425%** |
| **SCAQMD Regional Threshold (lbs/day)** | **55** |
| ***Threshold Exceeded?*** | ***Yes*** |

When correct input parameters are used to model the Project's operational emissions, ROG emissions increase by approximately 1,425% under Scenario 1 and exceed the SCAQMD's significance threshold. Our updated model demonstrates that when the Project's operational emissions are estimated correctly, the Project would result in a significant air quality impact that was not identified by the Project Applicant. As a result, a Project-specific DEIR should be prepared that includes an updated air pollution model to adequately estimate the Project's emissions, and additional mitigation measures should be identified and incorporated to reduce these emissions to a less-than-significant level.[13]

## Diesel Particulate Matter Health Risk Emissions Inadequately Evaluated

The SCEA concludes that the proposed Project would have a less than significant health risk impact on sensitive receptors without conducting a construction or operational health risk assessment (HRA) (p. 5.0-14). The SCEA attempts to justify this determination by stating,

> "Off-road heavy-duty diesel equipment would emit diesel particulate matter over the course of the construction period. Sensitive receptors are located adjacent to the Project site. However, localized diesel particulate matter emissions (strongly correlated with PM2.5 emissions) would be minimal and would be substantially below localized thresholds as presented in Table 5.2-2 above. SCAQMD staff recommends Mitigation Measure MM AQ-1, that the Lead Agency at the minimum use off-road diesel-powered construction equipment that meets or exceeds the CARB and USEPA Tier 3 off-road emissions standards for equipment rated at 50 horsepower or greater during Project construction to further reduce criteria pollutants emissions. Such equipment will be outfitted with Best Available Control Technology (BACT) devices including a CARB certified Level 3 particulate matter emission. Therefore, construction impacts would be less than significant with mitigation" (p. 5.0-14).

[13] See sections titled "Mitigation Measures Available to Reduce Operational Emissions" on p. 22 of this letter. These measures would effectively reduce operational ROG, DPM, and GHG emissions.

The Project Applicant goes onto say,

> "Project operations would generate only minor amounts of diesel emission from residential delivery trucks and incidental maintenance activities. Trucks would comply with the applicable provisions of the CARB Truck and Bus regulation to minimize and reduce emissions from existing diesel trucks. Therefore, project operations would not be considered a substantial source of diesel particulate. In addition, Project operations would only result in minimal emissions of air toxics from maintenance or other ongoing activities, such as use of architectural coatings and other household cleaning products. As a result, toxic or carcinogenic air pollutants are not expected to occur in any meaningful amounts in conjunction with operation of the proposed residential and commercial use within the Project site. Based on the uses expected on the Project site, potential long-term operational impacts associated with the release of TACs would be minimal and would not be expected to exceed the SCAQMD thresholds of significance. Therefore, operational impacts would be less than significant" (p. 5.0-14).

These justifications for failing to conduct a construction or operational health risk are incorrect for several reasons.

First, the SCEA does not even address its omission of an actual construction HRA and instead opts to analyze the Project's construction emissions by comparing the emissions to the SCAQMD's Localized Significance Thresholds (LSTs) to determine whether the Project would expose sensitive receptors to substantial pollutant concentrations (see excerpt below) (Table 5.2-2, p. 5.0-11).

**Table 5.2-2**
**LST Analysis**

| Source | NOx | CO | PM10 | PM2.5 |
|---|---|---|---|---|
| | pounds/day | | | |
| ***Construction & Demolition*** | | | | |
| Maximum On-Site Emissions | 12 | 15 | 3 | 2 |
| SCAQMD LST (SRA 8) | 105 | 907 | 7 | 4 |
| **Threshold Exceeded?** | **No** | **No** | **No** | **No** |
| ***Operational*** | | | | |
| Area/Energy emissions | 1 | 16 | <1 | <1 |
| Existing | <1 | <1 | <1 | <1 |
| Net Total | 1 | 16 | <1 | <1 |
| SCAQMD LST (SRA 8) | 105 | 907 | 2 | 1 |
| **Threshold Exceeded?** | **No** | **No** | **No** | **No** |

*Source: Air Quality and Greenhouse Gas output sheets are provided in Appendix A.*

Using this method, the SCEA states that since the Project's construction emissions would not exceed the SCAQMD's LSTs for the specified pollutants ($NO_x$, CO, $PM_{10}$, and $PM_{2.5}$), impacts would be less than significant (p. 5.0-14). The use of this method, as well as the subsequent significance determination, is entirely incorrect. While the LST method assesses the impact of pollutants at a local level, it only evaluates impacts from criteria air pollutants. As a result, health impacts from exposure to toxic air

contaminants (TACs), such as diesel particulate matter (DPM), were not analyzed, thus leaving a gap within the SCEA's analysis.

According to the Final Localized Significance Threshold Methodology document prepared by the SCAQMD, the LST analysis is only applicable to $NO_x$, CO, $PM_{10}$, and $PM_{2.5}$ emissions, which are collectively referred to as criteria air pollutants.[14] Because the LST method can only be applied to criteria air pollutants, this method cannot be used to determine whether emissions from DPM, a known human carcinogen, will result in a significant health risk impact to nearby sensitive receptors. By failing to prepare an HRA in addition to the LST analysis, the SCEA fails to provide a comprehensive analysis of the sensitive receptor impacts that may occur as a result of exposure to substantial air pollutants. Furthermore, the SCAQMD provides a specific numerical threshold of 10 in one million for determining a project's health risk impact, which supports the requirement of a construction HRA in addition to the LST analysis. Therefore, in order to determine the proposed Project's health-related impact, the SCEA should have conducted an assessment that compares the Project's construction health risk to the SCAQMD's specific numeric threshold of 10 in one million.

The suggestion that the SCEA should have prepared an HRA that evaluates the Project's construction-related emissions in addition to the LST analysis is further supported by additional SCAQMD guidance. According to the SCAQMD's June 2015 *Risk Assessment Procedures for Rules 1401, 1401.1, and 212* report, it is recommended that health risk impacts from short-term projects, such as Project construction, also be assessed. The Guidance document states,

> "Since these short-term calculations are only meant for projects with limits on the operating duration, these short-term cancer risk assessments can be thought of as being the equivalent to a 30-year cancer risk estimate and the appropriate thresholds would still apply (i.e. for a 5-year project, the maximum emissions during the 5-year period would be assessed on the more sensitive population, from the third trimester to age 5, after which the project's emissions would drop to 0 for the remaining 25 years to get the 30-year equivalent cancer risk estimate)."[15]

As you can see in the excerpt above, an HRA is required by the SCAQMD to determine whether or not Project construction would expose sensitive receptors to substantial air pollutants, and as such, a proper HRA should have been prepared.

Second, the omission of a quantified construction and operational HRA is inconsistent with the most recent guidance published by the Office of Environmental Health Hazard Assessment (OEHHA), the organization responsible for providing recommendations for health risk assessments in California. In

[14] "Final Localized Significance Threshold Methodology." SCAQMD, Revised July 2008, *available at:* http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf.

[15] Risk Assessment Procedures for Rules 1401, 1401.1 and 212, SCAQMD, June 2015, *available at:* http://www.aqmd.gov/docs/default-source/planning/risk-assessment/riskassprocjune15.pdf?sfvrsn=2, p. IX-2

February of 2015, OEHHA released its most recent *Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments*, which was formally adopted in March of 2015.[16] This guidance document describes the types of projects that warrant the preparation of a health risk assessment. Construction of the Project will produce emissions of DPM, through the exhaust stacks of construction equipment over a construction period of 25 months (p. 2.0-7). The OEHHA document recommends that all short-term projects lasting at least two months be evaluated for cancer risks to nearby sensitive receptors.[17] Therefore, per OEHHA guidelines, health risk impacts from Project construction should have been evaluated by the SCEA. Furthermore, once construction of the Project is complete, the Project will operate for a long period of time. During operation, the Project will generate vehicle trips, which will generate additional exhaust emissions, thus continuing to expose nearby sensitive receptors to emissions. The OEHHA document recommends that exposure from projects lasting more than 6 months should be evaluated for the duration of the project, and recommends that an exposure duration of 30 years be used to estimate individual cancer risk for the maximally exposed individual resident (MEIR).[18] Even though we were not provided with the expected lifetime of the Project, we can reasonably assume that the Project will operate for at least 30 years, if not more. Therefore, health risks from Project operation should have also been evaluated by the SCEA, as a 30-year exposure duration vastly exceeds the 2-month and 6-month requirements set forth by OEHHA. These recommendations reflect the most recent health risk policy, and as such, an updated assessment of health risks to nearby sensitive receptors from Project construction and operation should be included in a revised CEQA evaluation for the Project.

## Updated Analysis Demonstrates Significant Health Risk

In an effort to demonstrate the potential risk posed by Project construction and operation to nearby sensitive receptors, we prepared a simple screening-level HRA. The results of our assessment, as described below, provide substantial evidence that the Project's construction and operational DPM emissions may result in a potentially significant health risk impact that was not previously identified.

In order to conduct our screening level risk assessment we relied upon AERSCREEN, which is a screening level air quality dispersion model. [19] The model replaced SCREEN3, and AERSCREEN is included in the OEHHA[20] and the California Air Pollution Control Officers Associated (CAPCOA)[21] guidance as the appropriate air dispersion model for Level 2 health risk screening assessments ("HRSAs"). A Level 2 HRSA utilizes a limited amount of site-specific information to generate maximum reasonable downwind

[16] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* http://oehha.ca.gov/air/hot_spots/hotspots2015.html
[17] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf, p. 8-18
[18] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf, p. 8-6, 8-15
[19] "AERSCREEN Released as the EPA Recommended Screening Model," USEPA, April 11, 2011, *available at:* http://www.epa.gov/ttn/scram/guidance/clarification/20110411_AERSCREEN_Release_Memo.pdf
[20] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf
[21] "Health Risk Assessments for Proposed Land Use Projects," CAPCOA, July 2009, *available at:* http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf

concentrations of air contaminants to which nearby sensitive receptors may be exposed. If an unacceptable air quality hazard is determined to be possible using AERSCREEN, a more refined modeling approach is required prior to approval of the Project.

We prepared a preliminary HRA of the Project's health-related impact to sensitive receptors using the annual PM10 exhaust estimates from SWAPE's annual CalEEMod output files. According to the Google Earth, the closest residential receptor is approximately 25 meters from the Project site. Consistent with recommendations set forth by OEHHA, we used a residential exposure duration of 30 years, starting from the 3rd trimester stage of life. We also assumed that construction and operation of the Project would occur in quick succession, with no gaps between each Project phase. The SWAPE annual CalEEMod model's emissions estimate indicates that construction activities will generate approximately 242 pounds of DPM over the 25-month, or approximately 762-day construction period. The AERSCREEN model relies on a continuous average emission rate to simulate maximum downward concentrations from point, area, and volume emission sources. To account for the variability in equipment usage and truck trips over Project construction, we calculated an average DPM emission rate by the following equation.

$$Emission\ Rate\ \left(\frac{grams}{second}\right) = \frac{242\ lbs}{762\ days} \times \frac{453.6\ grams}{lbs} \times \frac{1\ day}{24\ hours} \times \frac{1\ hour}{3{,}600\ seconds} = \mathbf{0.00167\ g/s}$$

Using this equation, we estimated a construction emission rate of 0.00167 grams per second (g/s). The SWAPE's annual CalEEMod output files indicate that operational activities will generate approximately 485 pounds of DPM per year over the 27.9 years of operation. Applying the same equation used to estimate the construction DPM emission rate, we estimated the following emission rate for Project operation.

$$Emission\ Rate\ \left(\frac{grams}{second}\right) = \frac{485\ lbs}{365\ days} \times \frac{453.6\ grams}{lbs} \times \frac{1\ day}{24\ hours} \times \frac{1\ hour}{3{,}600\ seconds} = \mathbf{0.006973\ g/s}$$

Using this equation, we estimated an operational emission rate of 0.006973 g/s. Construction was simulation as a 2.39-acre rectangular area source in AERSCREEN, with dimensions of 108 meters by 90 meters. Consistent with Scenario 1, operational activity was simulated as a 3.42-acre rectangular area source in AERSCREEN, with dimensions of 128 meters by 108 meters. A release height of three meters was selected to represent the height of exhaust stacks on operational equipment and other heavy-duty vehicles, and an initial vertical dimension of one and a half meters was used to simulate instantaneous plume dispersion upon release. An urban meteorological setting was selected with model-default inputs for wind speed and direction distribution.

The AERSCREEN model generates maximum reasonable estimates of single-hour DPM concentrations from the Project site. EPA guidance suggests that in screening procedures, the annualized average concentration of an air pollutant be estimated by multiplying the single-hour concentration by 10%.[22]

[22] http://www.epa.gov/ttn/scram/guidance/guide/EPA-454R-92-019_OCR.pdf

For example, for the MEIR the single-hour concentration estimated by AERSCREEN for Project construction is approximately 3.834 µg/m$^3$ DPM at approximately 25 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 0.3834 µg/m$^3$ for Project construction at the MEIR. For Project operation, the single-hour concentration at the MEIR estimated by AERSCREEN is approximately 12.05 µg/m$^3$ DPM at approximately 25 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 1.205 µg/m$^3$ for Project operation at the MEIR.

We calculated the excess cancer risk to the residential receptors located closest to the Project site using applicable HRA methodologies prescribed by OEHHA and the SCAQMD. Consistent with the construction schedule proposed by the SCEA, the annualized average concentration for construction was used for the entire 3rd trimester of pregnancy (0.25 years) and the first 1.84-years of the infantile stage of life (0-2 years). The annualized average concentration for operation was used for the remainder of the 30-year exposure period, which makes up the remainder of the infantile stage of life (0-2 years), child stages of life (2 to 16 years), and adult stages of life (16 to 30 years). Consistent with OEHHA guidance, we used Age Sensitivity Factors (ASFs) to account for the heightened susceptibility of young children to the carcinogenic toxicity of air pollution.[23] According to the updated guidance, quantified cancer risk should be multiplied by a factor of ten during the 3$^{rd}$ trimester of pregnancy and the first two years of life (infant) and should be multiplied by a factor of three during the child stage of life (2 to 16 years). Furthermore, in accordance with guidance set forth by OEHHA, we used 95$^{th}$ percentile breathing rates for infants.[24] Finally, according to SCAQMD guidance, we used a Fraction of Time At Home (FAH) Value of 1 for the 3rd trimester, infant, and child receptors and we used a FAH Value of 0.73 for the adult receptors.[25] We used a cancer potency factor of 1.1 (mg/kg-day)$^{-1}$ and an averaging time of 25,550 days. The results of our calculations are shown below.

**The Maximum Exposed Individual at an Existing Residential Receptor (MEIR)**

| Activity | Duration (years) | Concentration (µg/m$^3$) | Breathing Rate (L/kg-day) | ASF | Cancer Risk |
|---|---|---|---|---|---|
| Construction | 0.25 | 0.3834 | 361 | 10 | 5.2E-06 |
| ***3rd Trimester Duration*** | ***0.25*** | | | ***3rd Trimester Exposure*** | ***5.2E-06*** |
| Construction | 1.84 | 0.3834 | 1090 | 10 | 1.2E-04 |

[23] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

[24] "Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics 'Hot Spots' Information and Assessment Act," June 5, 2015, *available at:* http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588-risk-assessment-guidelines.pdf?sfvrsn=6, p. 19
"Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

[25] "Risk Assessment Procedures for Rules 1401, 1401.1, and 212." SCAQMD, August 2017, *available at:* http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1401/riskassessmentprocedures_2017_080717.pdf, p. 7

| | | | | | |
|---|---|---|---|---|---|
| Operation | 0.16 | 1.205 | 1090 | 10 | 3.2E-05 |
| ***Infant Exposure Duration*** | ***2.00*** | | | ***Infant Exposure*** | ***1.5E-04*** |
| Operation | 14.00 | 1.205 | 572 | 3 | 4.4E-04 |
| ***Child Exposure Duration*** | ***14.00*** | | | ***Child Exposure*** | ***4.4E-04*** |
| Operation | 14.00 | 1.205 | 261 | 1 | 4.8E-05 |
| ***Adult Exposure Duration*** | ***14.00*** | | | ***Adult Exposure*** | ***4.8E-05*** |
| **Lifetime Exposure Duration** | **30.00** | | | **Lifetime Exposure** | **6.4E-04** |

The excess cancer risk posed to adults, children, infants, and during the third trimester of pregnancy at the MEIR located approximately 25 meters away, over the course of Project construction and operation are approximately 48, 440, 150, and 5.2 in one million, respectively. Furthermore, the excess cancer risk over the course of a residential lifetime (30 years) at the MEIR is approximately 640 in one million. Consistent with OEHHA guidance, exposure was assumed to begin in the third trimester of pregnancy to provide the most conservative estimates of air quality hazards. The infant, child, adult, and lifetime cancer risks exceed the SCAQMD's threshold of 10 in one million.

It should be noted that our analysis represents a screening-level HRA, which is known to be more conservative, and tends to err on the side of health protection.[26] The purpose of a screening-level HRA, however, is to determine if a more refined HRA needs to be conducted. If the results of a screening-level health risk are above applicable thresholds, then the Project needs to conduct a more refined HRA that is more representative of site specific concentrations. Our screening-level HRA demonstrates that construction and operation of the Project could result in a potentially significant health risk impact, when correct exposure assumptions and up-to-date, applicable guidance are used. As a result, a refined HRA must be prepared to examine air quality impacts generated by Project construction and operation using site-specific meteorology and specific equipment usage schedules. A DEIR must be prepared to adequately evaluate the Project's health risk impact, and should include additional mitigation measures to reduce these impacts to a less-than-significant level. [27]

## Mitigation Measures Available to Reduce Construction Emissions

Our health risk assessment demonstrates that Project construction-related DPM emissions would result in a significant health risk impact. Therefore, additional mitigation measures must be identified and incorporated in a Project-specific DEIR to reduce these emissions to a less than significant level.

Additional mitigation measures can be found in CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures,* which attempt to reduce Greenhouse Gas (GHG) levels, as well as reduce criteria air pollutants, such as particulate matter.[28] DPM is a byproduct of diesel fuel combustion, and is emitted by

[26] http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf p. 1-5

[27] See mitigation measures listed in section titled "Mitigation Measures Available to Reduce Operational Emissions" on p. 22 of this letter. These measures would effectively reduce operational DPM emissions, as well as ROG and GHG emissions.

[28] http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

on-road vehicles and by off-road construction equipment. Mitigation for criteria pollutant emissions should include consideration of the following measures in an effort to reduce construction emissions.

### *Require Implementation of Diesel Control Measures*

The Northeast Diesel Collaborative ("NEDC") is a regionally coordinated initiative to reduce diesel emissions, improve public health, and promote clean diesel technology. The NEDC recommends that contracts for all construction projects require the following diesel control measures: [29]

- All diesel onroad vehicles on site for more than 10 total days must have either (1) engines that meet EPA 2007 onroad emissions standards or (2) emission control technology verified by EPA[30] or the California Air Resources Board (CARB)[31] to reduce PM emissions by a minimum of 85 percent.
- All diesel generators on site for more than 10 total days must be equipped with emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85 percent.
- All diesel nonroad construction equipment on site for more than 10 total days must have either (1) engines meeting EPA Tier 4 nonroad emission standards or (2) emission control technology verified by EPA or CARB for use with nonroad engines to reduce PM emissions by a minimum of 85 percent for engines 50 horse power (hp) and greater and by a minimum of 20 percent for engines less than 50 hp.
    - If the Project Applicant decides to use off-road construction equipment equipped with Tier 3 or Tier 4 mitigated engines, then the Applicant must show proof of availability for use during construction of the Project.
- All diesel vehicles, construction equipment, and generators on site shall be fueled with ultra-low sulfur diesel fuel (ULSD) or a biodiesel blend[32] approved by the original engine manufacturer with sulfur content of 15 parts per million (ppm) or less.

### *Repower or Replace Older Construction Equipment Engines*

The NEDC recognizes that availability of equipment that meets the EPA's newer standards is limited.[33] Due to this limitation, the NEDC proposes actions that can be taken to reduce emissions from existing equipment in the *Best Practices for Clean Diesel Construction* report.[34] These actions include but are not limited to:

- Repowering equipment (i.e. replacing older engines with newer, cleaner engines and leaving the body of the equipment intact).

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[29] Diesel Emission Controls in Construction Projects, *available at:* http://www2.epa.gov/sites/production/files/2015-09/documents/nedc-model-contract-sepcification.pdf

[30] For EPA's list of verified technology: http://www3.epa.gov/otaq/diesel/verification/verif-list.htm

[31] For CARB's list of verified technology: http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm

[32] Biodiesel lends are only to be used in conjunction with the technologies which have been verified for use with biodiesel blends and are subject to the following requirements: http://www.arb.ca.gov/diesel/verdev/reg/biodieselcompliance.pdf

[33] http://northeastdiesel.org/pdf/BestPractices4CleanDieselConstructionAug2012.pdf

[34] http://northeastdiesel.org/pdf/BestPractices4CleanDieselConstructionAug2012.pdf

Engine repower may be a cost-effective emissions reduction strategy when a vehicle or machine has a long useful life and the cost of the engine does not approach the cost of the entire vehicle or machine. Examples of good potential replacement candidates include marine vessels, locomotives, and large construction machines.[35] Older diesel vehicles or machines can be repowered with newer diesel engines or in some cases with engines that operate on alternative fuels (see section "Use Alternative Fuels for Construction Equipment" for details). The original engine is taken out of service and a new engine with reduced emission characteristics is installed. Significant emission reductions can be achieved, depending on the newer engine and the vehicle or machine's ability to accept a more modern engine and emission control system. It should be noted, however, that newer engines or higher tier engines are not necessarily cleaner engines, so it is important that the Project Applicant check the actual emission standard level of the current (existing) and new engines to ensure the repower product is reducing emissions for PM10. [36]

- Replacement of older equipment with equipment meeting the latest emission standards.

Engine replacement can include substituting a cleaner highway engine for a nonroad engine. Diesel equipment may also be replaced with other technologies or fuels. Examples include hybrid switcher locomotives, electric cranes, LNG, CNG, LPG or propane yard tractors, forklifts or loaders. Replacements using natural gas may require changes to fueling infrastructure.[37] Replacements often require some re-engineering work due to differences in size and configuration. Typically there are benefits in fuel efficiency, reliability, warranty, and maintenance costs.[38]

### *Install Retrofit Devices on Existing Construction Equipment*

PM emissions from alternatively-fueled construction equipment can be further reduced by installing retrofit devices on existing and/or new equipment. The most common retrofit technologies are retrofit devices for engine exhaust after-treatment. These devices are installed in the exhaust system to reduce emissions and should not impact engine or vehicle operation.[39] It should be noted that actual emissions reductions and costs will depend on specific manufacturers, technologies and applications.

### *Use Electric and Hybrid Construction Equipment*

CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures*[40] report also proposes the use of electric and/or hybrid construction equipment as a way to mitigate criteria pollutant emissions, such as particulate matter. When construction equipment is powered by grid electricity rather than fossil fuel, direct emissions from fuel combustion are replaced with indirect emissions associated with the

[35] http://www3.epa.gov/otaq/diesel/technologies/engines.htm
[36] Diesel Emissions Reduction Program (DERA): Technologies, Fleets and Projects Information, *available at:* https://nepis.epa.gov/Exe/ZyPDF.cgi/P100CVIS.PDF?Dockey=P100CVIS.PDF
[37] National Clean Diesel Campaign, p. 19 *available at*: https://www.epa.gov/sites/production/files/2017-02/documents/fy17-state-program-guide-2017-02.pdf
[38] Cleaner Diesels: Low Cost Ways to Reduce Emissions from Construction Equipment, p. 29 *available at*: https://www.epa.gov/sites/production/files/2015-09/documents/cleaner-diesels-low-cost-ways-to-reduce-emissions-from-construction-equipment.pdf
[39] https://www.epa.gov/verified-diesel-tech/learn-about-verified-technologies-clean-diesel
[40] http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

electricity used to power the equipment. Furthermore, when construction equipment is powered by hybrid-electric drives, emissions from fuel combustion are also greatly reduced and criteria air pollutants would be 100% reduced for equipment running on electricity. Electric construction equipment is available commercially from companies such as Peterson Pacific Corporation[41] and Komptech USA[42], which specialize in the mechanical processing equipment like grinders and shredders. Construction equipment powered by hybrid-electric drives is also commercially available from companies such as Caterpillar[43]. For example, Caterpillar reports that during an 8-hour shift, its D7E hybrid dozer burns 19.5 percent fewer gallons of fuel than a conventional dozer while achieving a 10.3 percent increase in productivity. The D7E model burns 6.2 gallons per hour compared to a conventional dozer which burns 7.7 gallons per hour.[44] Fuel usage and savings are dependent on the make and model of the construction equipment used. The Project Applicant should calculate project-specific savings and provide manufacturer specifications indicating fuel burned per hour.

### *Institute a Heavy-Duty Off-Road Vehicle Plan*

CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures*[45] report recommends that the Project Applicant provide a detailed plan that discusses a construction vehicle inventory tracking system to ensure compliances with construction mitigation measures. The system should include strategies such as requiring hour meters on equipment, documenting the serial number, horsepower, manufacture age, fuel, etc. of all onsite equipment and daily logging of the operating hours of the equipment. Specifically, prior to the construction of a Project the contractor should submit a certified list of all diesel vehicles, construction equipment, and generators to be used on site. [46] The list should include the following: [47]

- Contractor and subcontractor name and address, plus contact person responsible for the vehicles or equipment.
- Equipment type, equipment manufacturer, equipment serial number, engine manufacturer, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation.
- For the emission control technology installed: technology type, serial number, make, model, manufacturer, EPA/CARB verification number/level, and installation date and hour-meter reading on installation date.

[41] Peterson Electric Grinders Brochure, *available at:* http://www.petersoncorp.com/wp-content/uploads/peterson_electric_grinders1.pdf
[42] Komptech Green Efficiency Brochure, *available at:* https://www.komptech.com/index.php?eID=tx_nawsecuredl&u=0&g=0&t=1499460496&hash=62966444 9e3954477f6857f98ad1d73f8f2ec20d&file=fileadmin/komptech/brochures/Green_Efficiency_eng_2015.pdf
[43] http://www.cat.com/en_US/products/new/power-systems/electric-power-generation.html
[44] http://s7d2.scene7.com/is/content/Caterpillar/C811572
[45] http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf
[46] Diesel Emission Controls in Construction Projects, *available at:* http://www2.epa.gov/sites/production/files/2015-09/documents/nedc-model-contract-sepcification.pdf
[47] USEPA's Construction Fleet Inventory Guide is a useful tool in identifying the information required. http://www2.epa.gov/sites/production/files/2015-09/documents/construction-fleet-inventory-guide.pdf

### *Implement a Construction Vehicle Inventory Tracking System*

CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures*[48] report recommends that the Project Applicant provide a detailed plan that discusses a construction vehicle inventory tracking system to ensure compliances with construction mitigation measures. The system should include strategies such as requiring engine run time meters on equipment, documenting the serial number, horsepower, manufacture age, fuel, etc. of all onsite equipment and daily logging of the operating hours of the equipment. Specifically, for each onroad construction vehicle, nonroad construction equipment, or generator, the contractor should submit to the developer's representative a report prior to bringing said equipment on site that includes: [49]

- Equipment type, equipment manufacturer, equipment serial number, engine manufacturer, engine model year, engine certification (Tier rating), horsepower, and engine serial number.
- The type of emission control technology installed, serial number, make, model, manufacturer, and EPA/CARB verification number/level.
- The Certification Statement[50] signed and printed on the contractor's letterhead.

Furthermore, the contractor should submit to the developer's representative a monthly report that, for each onroad construction vehicle, nonroad construction equipment, or generator onsite, includes: [51]

- Hour-meter readings on arrival on-site, the first and last day of every month, and on off-site date.
- Any problems with the equipment or emission controls.
- Certified copies of fuel deliveries for the time period that identify:
    - Source of supply
    - Quantity of fuel
    - Quality of fuel, including sulfur content (percent by weight).

In addition to those measures, we also recommend that the City require the Applicant to implement the following mitigation measures, called "Enhanced Exhaust Control Practices,"[52] that are recommended by the Sacramento Metropolitan Air Quality Management District ("SMAQMD"):

1. The project representative shall submit to the lead agency and District a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project.
    - The inventory shall include the horsepower rating, engine model year, and projected hours of use for each piece of equipment.

[48] http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf
[49] Diesel Emission Controls in Construction Projects, *available at:* http://www2.epa.gov/sites/production/files/2015-09/documents/nedc-model-contract-sepcification.pdf
[50] Diesel Emission Controls in Construction Projects, *available at:* http://www2.epa.gov/sites/production/files/2015-09/documents/nedc-model-contract-sepcification.pdf The NEDC Model Certification Statement can be found in Appendix A, p. 10.
[51] Diesel Emission Controls in Construction Projects, *available at:* http://www2.epa.gov/sites/production/files/2015-09/documents/nedc-model-contract-sepcification.pdf
[52] http://www.airquality.org/LandUseTransportation/Documents/Ch3EnhancedExhaustControlFINAL10-2013.pdf

- The project representative shall provide the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.
- This information shall be submitted at least 4 business days prior to the use of subject heavy-duty off-road equipment.
- The District's Equipment List Form can be used to submit this information.
- The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs.

2. The project representative shall provide a plan for approval by the lead agency and District demonstrating that the heavy-duty off-road vehicles (50 horsepower or more) to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project wide fleet-average 20% $NO_X$ reduction and 45% particulate reduction compared to the most recent CARB fleet average.
    - This plan shall be submitted in conjunction with the equipment inventory.
    - Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.
    - The District's Construction Mitigation Calculator can be used to identify an equipment fleet that achieves this reduction.
3. The project representative shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40% opacity for more than three minutes in any one hour.
    - Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. Non-compliant equipment will be documented and a summary provided to the lead agency and District monthly.
    - A visual survey of all in-operation equipment shall be made at least weekly.
    - A monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey.
4. The District and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this mitigation shall supersede other District, state or federal rules or regulations.

These measures offer a cost-effective way to incorporate lower-emitting equipment into the Project's construction fleet, which subsequently, reduces particulate matter emissions released during Project construction. A DEIR must be prepared to include additional mitigation measures, as well as include an updated air quality assessment to ensure that the necessary mitigation measures are implemented to reduce construction emissions. Furthermore, the Project Applicant needs to demonstrate commitment to the implementation of these measures prior to Project approval to ensure that the Project's construction-related emissions are reduced to the maximum extent possible.

# Greenhouse Gas

## Failure to Adequately Assess the Project's Greenhouse Gas Impacts

The SCEA determines the Project's GHG impact in two ways. First, the SCEA evaluates the Project's GHG emissions by considering whether the Project complies with applicable regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction of mitigation of greenhouse gas emissions. Specifically, the SCEA demonstrates which mitigation measures provided within the Greener Glendale Plan ("GGP"), the South Glendale Community Plan EIR, and the SCAG RTP/SCS that will be implemented into the Project's design in order to demonstrate consistency with these plans and a less than significant GHG impact (pp. 189 - 191). Second, the SCEA attempts to quantitatively demonstrate a less than significant GHG impact by taking the net difference in emissions between the Project site's existing land uses that will be demolished during construction and the Project's proposed land uses and compares these emissions to the SCAQMD's 3,000 metric tons of carbon dioxide equivalents per year significance threshold (MT $CO_2$e/year). Using this method, the SCEA determines that the proposed Project will generate approximately 1,438 MT $CO_2$e/year, which is under the significance threshold and would therefore not result in a significant impact (p. 5.0-33).

We find this significance determination, however, to be incorrect for several reasons, specifically: (1) the GGP may not be applicable to the Project, as it fails to address the bulk of the GHG emissions resulting from the Project; (2) the Project Applicant uses net emissions to determine the Project's GHG emissions; and (3) the GHG emissions estimates are based on a flawed CalEEMod model that underestimates emissions.

### *Greener Glendale Plan Fails to Adequately Mitigate the Project's Greenhouse Gas Emissions*

The Project Applicant attempts to demonstrate that the proposed Project will have a less than significant GHG impact by relying on the GGP. Regarding the Project's consistency with the GGP, the SCEA states,

> "The Greener Glendale Plan incorporate 12 measures in addition to the mandatory Green Building Standards for new construction projects. These measures went into effect on July 7, 2011. The 12 measures and applicability to the Project are provided in Table 5.2-4: Greener Glendale Plan Green Building Standard. There measures would be imposed by a conditions of approval (COA) upon arrival of the Project. By complying with the 12 measures listen in Table 5.2-4, the Project would be consistent with the Greener Glendale Plan" (p. 5.0-31).

Review of the list of GGP measures that the Project will be consistent with demonstrates that none of the measures listed are intended to reduce operational mobile-source emissions, which are the main source of the Project's GHG emissions. As a result, we find the SCEA's reliance on the GGP to reduce the Project's emissions to be insufficient at effectively evaluating and mitigating the Project potential impacts.

As shown in the table above, according to SWAPE's CalEEMod modeling, operational mobile-source emissions account for approximately 66 percent of the Project's total GHG emissions.[53] Thus, because the majority of the Project's GHG emissions are generated by operational mobile-sources, in order to effectively reduce the Project's GHG impact, the Project should have proposed mitigation measures that would specifically reduce these emissions, as well as the Project's other sources of GHG emissions. Review of Table 5.2-4, which lists the GGP's GHG reduction measures and the Project's consistency with them, however, demonstrates that this is not the case. The measures identified in Table 5.2-4 do not include measures aimed to specifically reduce operational mobile-source emissions that are generated by the Project's proposed land uses.

As shown in our updated CalEEMod modeling (discussed in the section below), the Project will generate a total of 4,064 MT $CO_2e$/yr, which exceeds the SCAQMD's numeric threshold of 3,000 MT $CO_2e$/yr[54] for mixed-use projects. Since the majority of the Project's GHG emissions are generated by mobile sources, and because the GGP measures listed in Table 5.2-4 are not aimed to reduce these emissions, we find the Project's compliance with the GGP to be insufficient in properly evaluating and mitigating the Project's impacts. As a result, the GGP should not be used to determine the Project's significance. A DEIR should be prepared that adequately evaluates the Project's GHG emissions and includes Project-specific mitigation to reduce the Project's operation emissions generated by the proposed land uses.

### *Project Applicant Incorrectly Relies on Net Greenhouse Gas Emissions to Determine Significance*

As previously stated, the Project Applicant determines that the proposed Project would generate approximately 1,438 MT $CO_2e$/year based on the net emissions (see excerpt below) (Table 5.2-5, p. 5.0-33 - 5.0-34).

**Table 5.2-5**
**Greenhouse Gas Emissions**

| GHG Emissions Source | Emissions (Metric Tons $CO_2e$/year) |
|---|---|
| Construction (30-year amortized) | 44 |
| Area | 3 |
| Energy | 786 |
| Operational (Mobile) Sources | 1,270 |
| Waste | 46 |
| Water | 125 |
| Annual Total | 2,274 |
| *Existing* | *836* |
| **Net Total** | **1,438** |

*Source: Air Quality and Greenhouse Gas output sheets are provided in Appendix A.*

[53] 2,664 MT $CO_2e$/year (Mobile-Source Emissions) / 4,064 MT $CO_2e$/year (Total Emissions) = 66%
[54] http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-6/ghg-meeting-6-guidance-document-discussion.pdf

However, relying on the proposed Project's *net* GHG emissions, rather than the Project's *total* GHG emissions, is incorrect and inconsistent with recent guidance set forth by the Office of Planning and Research (OPR). In the Final Statement of Reasons for the GHG-specific Guidelines,[55] OPR concluded that lead agencies cannot simply consider whether a project increases or decreases GHG emissions at the project site, but must consider the effect that the project will have on the larger environment. Accordingly, if a lead agency wants to use a *net* approach by subtracting existing on-site emissions from the project emissions, it must support that decision with substantial evidence showing that those existing emissions sources will be extinguished and not simply displaced.[56]

Review of the Project's GHG analysis, however, demonstrates that the GHG emissions generated from the 32,233 square foot general office building that will be demolished were subtracted from the proposed Project's GHG emissions, without substantial evidence showing that all of these existing GHG emissions sources on the Project site would be extinguished by the proposed Project, and not simply move elsewhere leading to increased *total* cumulative GHG emissions over the applicable GHG thresholds. As a result, the Project's GHG impact is underestimated and inadequately addressed.

### *Flawed CalEEMod Model Used to Estimate Emissions*

The SCEA relies upon CalEEMod to estimate the Project's operational GHG emissions and to determine that the Project's GHG emissions will be less than the SCAQMD's significance threshold. However, this analysis is based on a completely flawed CalEEMod model. As described in the sections above, the SCEA's CalEEMod modeling failed to account for the emissions generated from all existing land uses that will be in operation at the same time as the proposed Project's land uses. As a result, the Project Applicant significantly underestimates the proposed Project's GHG emissions. Prior to Project Approval an updated GHG analysis should be conducted in a Project-specific DEIR.

In an effort to determine the significance of the Project's GHG impact when correct input parameters are used to estimate emissions, we used the emission estimates from the SWAPE CalEEMod model and compared these emissions to the SCAQMD's significance threshold. When the Project's emissions are correctly modeled, we find that the Project's GHG emissions increase and would exceed the 3,000 MT $CO_2e$/year screening threshold (see table below).

| **Annual Greenhouse Gas Emissions** | |
|---|---|
| **Emission Source** | **Proposed Project (MT $CO_2e$/year)** |
| Amortized Construction Emissions | 29 |
| Area | 70 |
| Energy | 1,019 |
| Mobile | 2,664 |

[55] Final Statement of Reasons, pp. 83-84, *available at,* http://resources.ca.gov/ceqa/docs/Final_Statement_of_Reasons.pdf

[56] *See* CEQA Guidelines, § 15064.4, subd. (a) ("The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based on available information, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project.")

| | |
|---|---|
| Waste | 75 |
| Water | 207 |
| **Total** | **4,064** |
| **Significance Threshold (MT $CO_2e$/year)** | **3,000** |
| ***Exceed?*** | ***Yes*** |

As you can see in the excerpt above, when modeled correctly, we found that the proposed Project would generate 4,064 MT $CO_2e$/year, which greatly exceeds the 3,000 MT $CO_2e$/year screening threshold. Until an updated GHG analysis is prepared in a Project-specific DEIR that adequately evaluates the Project's total GHG emissions from all sources, the SCEA should not be relied upon to determine Project significance.

## Mitigation Measures Available to Reduce Operational Emissions

Our updated analysis demonstrates that the Project's operational ROG, DPM, and GHG emissions may present a potentially significant impact that was not previously identified by the Project Applicant. In an effort to reduce the Project's operational ROG, DPM, and GHG emissions, we identified several additional mitigation measures that are applicable to the Project. Additional mitigation measures that could be implemented to reduce operational DPM and GHG emissions include, but are not limited to, the following: [57]

- Use passive solar design, such as: [58,59]
    - Orient buildings and incorporate landscaping to maximize passive solar; heating during cool seasons, and minimize solar heat gain during hot seasons; and
    - Enhance natural ventilation by taking advantage of prevailing winds.
- Reduce unnecessary outdoor lighting by utilizing design features such as limiting the hours of operation of outdoor lighting.
- Develop and follow a "green streets guide" that requires:
    - Use of minimal amounts of concrete and asphalt;
    - Installation of permeable pavement to allow for storm water infiltration; and
    - Use of groundcovers rather than pavement to reduce heat reflection.[60]
- Implement Project design features such as:
    - Shade HVAC equipment from direct sunlight;
    - Install high-albedo white thermoplastic polyolefin roof membrane;
    - Install high-efficiency HVAC with hot-gas reheat;
    - Install formaldehyde-free insulation; and

[57] http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf
[58] Santa Barbara Air Pollution Control District, Scope and Content of Air Quality Sections in Environmental Documents, September 1997.
[59] Butte County Air Quality Management District, Indirect Source Review Guidelines, March 1997.
[60] *See* Irvine Sustainable Travelways "Green Street" Guidelines; www.ci.irvine.ca.us/civica/filebank/blobdload.asp?BlobID=8934; and Cool Houston Plan; www.harc.edu/Projects/CoolHouston.

    - Use recycled-content gypsum board.
- Provide education on energy efficiency to residents, customers, and/or tenants. Provide information on energy management services for large energy users.
- Meet "reach" goals for building energy efficiency and renewable energy use.
- Limit the use of outdoor lighting to only that needed for safety and security purposes.
- Require use of electric or alternatively fueled sweepers with HEPA filters.
- Include energy storage where appropriate to optimize renewable energy generation systems and avoid peak energy use.
- Plant low-VOC emitting shade trees, e.g., in parking lots to reduce evaporative emissions from parked vehicles.
- Use CARB-certified or electric landscaping equipment in project and tenant operations; and introduce electric lawn, and garden equipment exchange program.
- Install an infiltration basin to provide an opportunity for 100% of the storm water to infiltrate on-site.

Furthermore, the Kimball Business Park Project Final Environmental Impact Report includes various feasible mitigation measures that would reduce on-site area emissions that are applicable to the proposed Project's proposed land uses, and include, but are not limited to: [61]

- Increase in insulation such that heat transfer and thermal bridging is minimized.
- Limit air leakage through the structure and/or within the heating and cooling distribution system.
- Use of energy-efficient space heating and cooling equipment.
- Installation of dual-paned or other energy efficient windows.
- Installation of automatic devices to turn off lights where they are not needed.
- Application of a paint and surface color palette that emphasizes light and off-white colors that reflect heat away from buildings.

Moreover, additional, feasible mitigation measures can be found in CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures,* which attempt to reduce GHG levels.[62] GHG emissions are produced during fuel combustion, and are emitted by on-road vehicles and by off-road equipment. Therefore, to reduce the Project's mobile-source GHG emissions, consideration of the following measures should be made.

- Neighborhood/Site Enhancements
    - Providing a pedestrian access network to link areas of the Project site encourages people to walk instead of drive. This mode shift results in people driving less and thus a reduction in VMT. The project should provide a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site. The project should minimize

[61] Mitigation Monitoring Plan for the Kimball Business Park Project Final Environmental Impact Report, July 2016, *available at*: http://www.cityofchino.org/home/showdocument?id=13244
[62] http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

barriers to pedestrian access and interconnectivity. Physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation should be eliminated.

- Incorporate Bike Lane Street Design (On-Site)
    - Incorporating bicycle lanes, routes, and shared-use paths into street systems, new subdivisions, and large developments can reduce VMTs. These improvements can help reduce peak-hour vehicle trips by making commuting by bike easier and more convenient for more people. In addition, improved bicycle facilities can increase access to and from transit hubs, thereby expanding the "catchment area" of the transit stop or station and increasing ridership. Bicycle access can also reduce parking pressure on heavily-used and/or heavily-subsidized feeder bus lines and auto-oriented park-and-ride facilities.
- Transit Program
    - The Project could provide subsidized/discounted daily or monthly public transit passes. The Project may also provide free transfers between all shuttles and transit to participants. These passes can be partially or wholly subsidized by the employer or development. Many entities use revenue from parking to offset the cost of such a Project.
- Unbundle Parking Costs from Property Cost
    - Unbundling separates parking from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost from the property cost. This removes the burden from those who do not wish to utilize a parking space. Parking should be priced separately from home rents/purchase prices or office leases.
- Implement Commute Trip Reduction Program- Voluntary or Required
    - Implementation of a Commute Trip Reduction (CTR) program with employers will discourage single-occupancy vehicle trips and encourage alternative modes of transportation such as carpooling, taking transit, walking, and biking. The main difference between a voluntary and a required program is:
        - Monitoring and reporting is not required
        - No established performance standards (i.e. no trip reduction requirements)
    - The CTR program should provide employees with assistance in using alternative modes of travel, and provide both "carrots" and "sticks" to encourage employees. The CTR program should include all of the following to apply the effectiveness reported by the literature:
        - Carpooling encouragement
        - Ride-matching assistance
        - Preferential carpool parking
        - Flexible work schedules for carpools
        - Half time transportation coordinator
        - Vanpool assistance
        - Bicycle end-trip facilities (parking, showers and lockers)
- Provide Ride-Sharing Programs

    - Increasing the vehicle occupancy by ride sharing will result in fewer cars driving the same trip, and thus a decrease in VMT. The project should include a ride-sharing program as well as a permanent transportation management association membership and funding requirement. The project can promote ride-sharing programs through a multi-faceted approach such as:
        - Designating a certain percentage of parking spaces for ride sharing vehicles
        - Designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles
        - Providing a web site or message board for coordinating rides
- Implement Subsidized or Discounted Transit Program
    - This project can provide subsidized/discounted daily or monthly public transit passes to incentivize the use of public transport. The project may also provide free transfers between all shuttles and transit to participants. These passes can be partially or wholly subsidized by the employer, school, or development. Many entities use revenue from parking to offset the cost of such a project.
- Provide End of Trip Facilities
    - Non-residential projects can provide "end-of-trip" facilities for bicycle riders including showers, secure bicycle lockers, and changing spaces. End-of-trip facilities encourage the use of bicycling as a viable form of travel to destinations, especially to work. End-of-trip facilities provide the added convenience and security needed to encourage bicycle commuting.
- Encourage Telecommuting and Alternative Work Schedules
    - Encouraging telecommuting and alternative work schedules reduces the number of commute trips and therefore VMT traveled by employees. Alternative work schedules could take the form of staggered starting times, flexible schedules, or compressed work weeks.
- Implement Commute Trip Reduction Marketing
    - The project can implement marketing strategies to reduce commute trips. Information sharing and marketing are important components to successful commute trip reduction strategies. Implementing commute trip reduction strategies without a complementary marketing strategy will result in lower VMT reductions. Marketing strategies may include:
        - New employee orientation of trip reduction and alternative mode options
        - Event promotions
        - Publications
- Implement Preferential Parking Permit Program
    - The project can provide preferential parking in convenient locations (such as near public transportation or building front doors) in terms of free or reduced parking fees, priority parking, or reserved parking for commuters who carpool, vanpool, ride-share or use alternatively fueled vehicles. The project should provide wide parking spaces to accommodate vanpool vehicles.

- Implement Car-Sharing Program
    - This project should implement a car-sharing project to allow people to have on-demand access to a shared fleet of vehicles on an as-needed basis. User costs are typically determined through mileage or hourly rates, with deposits and/or annual membership fees. The car-sharing program could be created through a local partnership or through one of many existing car-share companies. Car-sharing programs may be grouped into three general categories: residential- or citywide-based, employer-based, and transit station-based. Transit station-based programs focus on providing the "last-mile" solution and link transit with commuters' final destinations. Residential-based programs work to substitute entire household based trips. Employer-based programs provide a means for business/day trips for alternative mode commuters and provide a guaranteed ride home option.
- Provide Employer-Sponsored Vanpool/Shuttle
    - This project can implement an employer-sponsored vanpool or shuttle. A vanpool will usually service employees' commute to work while a shuttle will service nearby transit stations and surrounding commercial centers. Employer-sponsored vanpool programs entail an employer purchasing or leasing vans for employee use, and often subsidizing the cost of at least program administration, if not more. The driver usually receives personal use of the van, often for a mileage fee. Scheduling is within the employer's purview, and rider charges are normally set on the basis of vehicle and operating cost.
- Implement Bike-Sharing Program
    - This project can establish a bike-sharing program to reduce VMTs. Stations should be at regular intervals throughout the project site.
        - For example, Paris' bike-share program places a station every few blocks throughout the city (approximately 28 bike stations/square mile).
- Price Workplace Parking
    - The project should implement workplace parking pricing at its employment centers. This may include: explicitly charging for parking for its employees, implementing above market rate pricing, validating parking only for invited guests, not providing employee parking and transportation allowances, and educating employees about available alternatives.
    - Though similar to the Employee Parking "Cash-Out" strategy, this strategy focuses on implementing market rate and above market rate pricing to provide a price signal for employees to consider alternative modes for their work commute.
- Implement Employee Parking "Cash-Out"
    - The project can require employers to offer employee parking "cash-out." The term "cash-out" is used to describe the employer providing employees with a choice of forgoing their current subsidized/free parking for a cash payment equivalent to the cost of the parking space to the employer.

Finally, numerous feasible mitigation measures are available to reduce VOC emissions (also referred to as ROG), including the following, which are routinely identified in other CEQA matters as feasible mitigation measures:

- Use of Zero-VOC Emissions Paint
    - The use of zero-VOC emission paint has been required for numerous projects that have undergone CEQA review.[63] Zero-VOC emission VOC paints are commercially available.[64] Other low-VOC standards should be incorporated into mitigation including use of "supercompliant" paints, defined in Rule 1113 as coating materials with a VOC-content of 10 g/L.
- Use of Material that Do Not Require Paint
    - Using materials that do not require painting is a common mitigation measure where VOC emissions are a concern.[65] Interior and exterior surfaces, such as concrete, can be left unpainted.
- Use of Spray Equipment with Greater Transfer Efficiencies
    - Various coatings and adhesives are required to be applied by specified methods such as electrostatic spray, high-volume, low-pressure (HVLP) spray, roll coater, flow coater, dip coater, etc. in order to maximize the transfer efficiency. Transfer efficiency is typically defined as the ratio of the weight of coating solids adhering to an object to the total weight of coating solids used in the application process, expressed as a percentage. When it comes to spray applications, the rules typically require the use of either electrostatic spray equipment or HVLP spray equipment. The SCAQMD is now able to certify HVLP spray applicators and other application technologies at efficiency rates of 65 percent or greater.[66]

When combined together, these measures offer a cost-effective, feasible way to incorporate lower-emitting design features into the proposed Project, which subsequently, reduces ROG, DPM, and GHG emissions released during Project operation. A DEIR must be prepared to include additional mitigation measures, as well as include an updated GHG and air quality analysis to ensure that the necessary mitigation measures are implemented to reduce operational emissions to below thresholds. The Project Applicant also needs to demonstrate commitment to the implementation of these measures prior to Project approval, to ensure that the Project's operational emissions are reduced to the maximum extent possible.

Sincerely,



[63] http://www.longbeach.gov/pw/eir/specdistregionalgov/03-sdrg-scaqmd-122205.pdf
[64] http://www.benjaminmoore.com/en-us/for-your-home/paint-products/natura-waterborne-interior-paint?lang=en_US&role=H#advs=0&tab=2 and http://www.mlandman.com/gbuildinginfo/lowvocpaints.shtml
[65] http://www.cityofirvine.org/civica/filebank/blobdload.asp?BlobID=16943, p. 3.2-15
[66] http://www.aqmd.gov/home/permits/spray-equipment-transfer-efficiency

Matt Hagemann, P.G., C.Hg.



Hadley Nolan

# GUSD Apartment Site Construction

**Los Angeles-South Coast County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Enclosed Parking with Elevator | 244.00 | Space | 2.20 | 97,600.00 | 0 |
| Other Non-Asphalt Surfaces | 69.17 | 1000sqft | 0.00 | 41,288.00 | 0 |
| Apartments Mid Rise | 198.00 | Dwelling Unit | 1.40 | 176,769.00 | 566 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 33 |
| **Climate Zone** | 11 | | | **Operational Year** | 2022 |
| **Utility Company** | Glendale Water & Power | | | | |
| **CO2 Intensity (lb/MWhr)** | 1115.33 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

GUSD Apartment Site Construction - Los Angeles-South Coast County, Annual

Project Characteristics -

Land Use - per the SCEA's CalEEMod modeling

Construction Phase - per the SCEA construction schedule

Grading - grading export and total acreage per the SCEA's CalEEMod modeling

Demolition -

Trips and VMT - hauling trip length per the SCEA

Vehicle Trips - construction only

Construction Off-road Equipment Mitigation -

Area Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstructionPhase | NumDays | 10.00 | 22.00 |
| tblConstructionPhase | NumDays | 200.00 | 463.00 |
| tblConstructionPhase | NumDays | 4.00 | 60.00 |
| tblConstructionPhase | NumDays | 10.00 | 44.00 |
| tblConstructionPhase | PhaseEndDate | 9/29/2020 | 11/22/2021 |
| tblConstructionPhase | PhaseEndDate | 9/1/2020 | 11/22/2021 |
| tblConstructionPhase | PhaseEndDate | 11/26/2019 | 2/12/2020 |
| tblConstructionPhase | PhaseEndDate | 9/15/2020 | 11/22/2020 |
| tblConstructionPhase | PhaseStartDate | 9/16/2020 | 10/22/2021 |
| tblConstructionPhase | PhaseStartDate | 11/27/2019 | 2/13/2020 |
| tblConstructionPhase | PhaseStartDate | 9/2/2020 | 9/22/2020 |
| tblGrading | AcresOfGrading | 22.50 | 1.80 |
| tblGrading | MaterialExported | 0.00 | 19,004.00 |
| tblLandUse | LandUseSquareFeet | 69,170.00 | 41,288.00 |

| | | | |
|---|---|---|---|
| tblLandUse | LandUseSquareFeet | 198,000.00 | 176,769.00 |
| tblLandUse | LotAcreage | 1.59 | 0.00 |
| tblLandUse | LotAcreage | 5.21 | 1.40 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 13.20 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 13.20 |
| tblVehicleTrips | HO_TL | 8.70 | 0.00 |
| tblVehicleTrips | HS_TL | 5.90 | 0.00 |
| tblVehicleTrips | HW_TL | 14.70 | 0.00 |
| tblVehicleTrips | ST_TR | 6.39 | 0.00 |
| tblVehicleTrips | SU_TR | 5.86 | 0.00 |
| tblVehicleTrips | WD_TR | 6.65 | 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 | | | | | |
| 2019 | 0.0510 | 0.6367 | 0.2962 | 8.5000e-004 | 0.1046 | 0.0250 | 0.1295 | 0.0457 | 0.0232 | 0.0688 | 0.0000 | 79.4709 | 79.4709 | 0.0146 | 0.0000 | 79.8352 |
| 2020 | 0.4710 | 3.4100 | 3.5418 | 9.7000e-003 | 0.5207 | 0.1212 | 0.6419 | 0.1592 | 0.1159 | 0.2752 | 0.0000 | 872.6626 | 872.6626 | 0.0817 | 0.0000 | 874.7054 |
| 2021 | 0.9953 | 2.6427 | 3.0863 | 8.7900e-003 | 0.4413 | 0.0855 | 0.5267 | 0.1186 | 0.0824 | 0.2010 | 0.0000 | 789.8375 | 789.8375 | 0.0621 | 0.0000 | 791.3911 |
| **Maximum** | **0.9953** | **3.4100** | **3.5418** | **9.7000e-003** | **0.5207** | **0.1212** | **0.6419** | **0.1592** | **0.1159** | **0.2752** | **0.0000** | **872.6626** | **872.6626** | **0.0817** | **0.0000** | **874.7054** |

### 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 | | | | | |
| 2019 | 0.0510 | 0.6367 | 0.2962 | 8.5000e-004 | 0.1046 | 0.0250 | 0.1295 | 0.0457 | 0.0232 | 0.0688 | 0.0000 | 79.4709 | 79.4709 | 0.0146 | 0.0000 | 79.8351 |
| 2020 | 0.4710 | 3.4100 | 3.5418 | 9.7000e-003 | 0.5207 | 0.1212 | 0.6419 | 0.1592 | 0.1159 | 0.2752 | 0.0000 | 872.6623 | 872.6623 | 0.0817 | 0.0000 | 874.7051 |
| 2021 | 0.9953 | 2.6427 | 3.0863 | 8.7900e-003 | 0.4413 | 0.0855 | 0.5267 | 0.1186 | 0.0824 | 0.2010 | 0.0000 | 789.8372 | 789.8372 | 0.0621 | 0.0000 | 791.3908 |
| **Maximum** | **0.9953** | **3.4100** | **3.5418** | **9.7000e-003** | **0.5207** | **0.1212** | **0.6419** | **0.1592** | **0.1159** | **0.2752** | **0.0000** | **872.6623** | **872.6623** | **0.0817** | **0.0000** | **874.7051** |

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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** | **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) |
|---|---|---|---|---|
| **1** | **10-22-2019** | **1-21-2020** | 0.8747 | 0.8747 |
| **2** | **1-22-2020** | **4-21-2020** | 0.8970 | 0.8970 |
| **3** | **4-22-2020** | **7-21-2020** | 0.9115 | 0.9115 |
| **4** | **7-22-2020** | **10-21-2020** | 1.0242 | 1.0242 |
| **5** | **10-22-2020** | **1-21-2021** | 1.0198 | 1.0198 |
| **6** | **1-22-2021** | **4-21-2021** | 0.8315 | 0.8315 |
| **7** | **4-22-2021** | **7-21-2021** | 0.8350 | 0.8350 |
| **8** | **7-22-2021** | **9-30-2021** | 0.6515 | 0.6515 |
| | | **Highest** | 1.0242 | 1.0242 |

## 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 | 1.4187 | 0.0750 | 3.3068 | 3.3200e-003 | | 0.2004 | 0.2004 | | 0.2004 | 0.2004 | 21.0314 | 43.7583 | 64.7897 | 0.0660 | 1.4300e-003 | 66.8640 |
| Energy | 9.8400e-003 | 0.0841 | 0.0358 | 5.4000e-004 | | 6.8000e-003 | 6.8000e-003 | | 6.8000e-003 | 6.8000e-003 | 0.0000 | 783.4100 | 783.4100 | 0.0197 | 5.4800e-003 | 785.5345 |
| 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 | 18.4884 | 0.0000 | 18.4884 | 1.0926 | 0.0000 | 45.8043 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 4.0927 | 130.6926 | 134.7853 | 0.4238 | 0.0106 | 148.5467 |
| **Total** | **1.4286** | **0.1591** | **3.3426** | **3.8600e-003** | **0.0000** | **0.2072** | **0.2072** | **0.0000** | **0.2072** | **0.2072** | **43.6125** | **957.8609** | **1,001.4734** | **1.6021** | **0.0175** | **1,046.7494** |

## 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 | 1.4187 | 0.0750 | 3.3068 | 3.3200e-003 | | 0.2004 | 0.2004 | | 0.2004 | 0.2004 | 21.0314 | 43.7583 | 64.7897 | 0.0660 | 1.4300e-003 | 66.8640 |
| Energy | 9.8400e-003 | 0.0841 | 0.0358 | 5.4000e-004 | | 6.8000e-003 | 6.8000e-003 | | 6.8000e-003 | 6.8000e-003 | 0.0000 | 783.4100 | 783.4100 | 0.0197 | 5.4800e-003 | 785.5345 |
| 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 | 18.4884 | 0.0000 | 18.4884 | 1.0926 | 0.0000 | 45.8043 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 4.0927 | 130.6926 | 134.7853 | 0.4238 | 0.0106 | 148.5467 |
| **Total** | **1.4286** | **0.1591** | **3.3426** | **3.8600e-003** | **0.0000** | **0.2072** | **0.2072** | **0.0000** | **0.2072** | **0.2072** | **43.6125** | **957.8609** | **1,001.4734** | **1.6021** | **0.0175** | **1,046.7494** |

| | ROG | NOx | 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**

GUSD Apartment Site Construction - Los Angeles-South Coast County, Annual

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 10/22/2019 | 11/18/2019 | 5 | 20 | |
| 2 | Site Preparation | Site Preparation | 11/19/2019 | 11/20/2019 | 5 | 2 | |
| 3 | Grading | Grading | 11/21/2019 | 2/12/2020 | 5 | 60 | |
| 4 | Building Construction | Building Construction | 2/13/2020 | 11/22/2021 | 5 | 463 | |
| 5 | Paving | Paving | 9/22/2020 | 11/22/2020 | 5 | 44 | |
| 6 | Architectural Coating | Architectural Coating | 10/22/2021 | 11/22/2021 | 5 | 22 | |

**Acres of Grading (Site Preparation Phase): 1**

**Acres of Grading (Grading Phase): 1.8**

**Acres of Paving: 2.2**

**Residential Indoor: 357,957; Residential Outdoor: 119,319; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 21,725 (Architectural Coating – sqft)**

**OffRoad Equipment**

GUSD Apartment Site Construction - Los Angeles-South Coast County, Annual

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Paving | Cement and Mortar Mixers | 1 | 6.00 | 9 | 0.56 |
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Cranes | 1 | 6.00 | 231 | 0.29 |
| Building Construction | Forklifts | 1 | 6.00 | 89 | 0.20 |
| Site Preparation | Graders | 1 | 8.00 | 187 | 0.41 |
| Paving | Pavers | 1 | 6.00 | 130 | 0.42 |
| Paving | Rollers | 1 | 7.00 | 80 | 0.38 |
| Demolition | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Rubber Tired Dozers | 1 | 6.00 | 247 | 0.40 |
| Building Construction | Tractors/Loaders/Backhoes | 1 | 6.00 | 97 | 0.37 |
| Demolition | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |
| Grading | Tractors/Loaders/Backhoes | 1 | 7.00 | 97 | 0.37 |
| Paving | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Site Preparation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Grading | Graders | 1 | 6.00 | 187 | 0.41 |
| Paving | Paving Equipment | 1 | 8.00 | 132 | 0.36 |
| Site Preparation | Rubber Tired Dozers | 1 | 7.00 | 247 | 0.40 |
| Building Construction | Welders | 3 | 8.00 | 46 | 0.45 |

**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 | 5 | 13.00 | 0.00 | 147.00 | 14.70 | 6.90 | 13.20 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 3 | 8.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 3 | 8.00 | 0.00 | 2,376.00 | 14.70 | 6.90 | 13.20 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 7 | 295.00 | 81.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 5 | 13.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 59.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

## 3.2 Demolition - 2019

**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 | | | | | 0.0159 | 0.0000 | 0.0159 | 2.4000e-003 | 0.0000 | 2.4000e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0230 | 0.2268 | 0.1489 | 2.4000e-004 | | 0.0129 | 0.0129 | | 0.0120 | 0.0120 | 0.0000 | 21.4161 | 21.4161 | 5.4500e-003 | 0.0000 | 21.5524 |
| **Total** | **0.0230** | **0.2268** | **0.1489** | **2.4000e-004** | **0.0159** | **0.0129** | **0.0287** | **2.4000e-003** | **0.0120** | **0.0144** | **0.0000** | **21.4161** | **21.4161** | **5.4500e-003** | **0.0000** | **21.5524** |

## 3.2 Demolition - 2019

### 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 | 5.1000e-004 | 0.0178 | 3.6400e-003 | 4.0000e-005 | 8.3000e-004 | 6.0000e-005 | 8.9000e-004 | 2.3000e-004 | 5.0000e-005 | 2.8000e-004 | 0.0000 | 4.0244 | 4.0244 | 3.1000e-004 | 0.0000 | 4.0322 |
| 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 | 6.5000e-004 | 5.4000e-004 | 5.9000e-003 | 2.0000e-005 | 1.4200e-003 | 1.0000e-005 | 1.4400e-003 | 3.8000e-004 | 1.0000e-005 | 3.9000e-004 | 0.0000 | 1.3694 | 1.3694 | 5.0000e-005 | 0.0000 | 1.3705 |
| **Total** | **1.1600e-003** | **0.0183** | **9.5400e-003** | **6.0000e-005** | **2.2500e-003** | **7.0000e-005** | **2.3300e-003** | **6.1000e-004** | **6.0000e-005** | **6.7000e-004** | **0.0000** | **5.3938** | **5.3938** | **3.6000e-004** | **0.0000** | **5.4027** |

### 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 | | | | | 0.0159 | 0.0000 | 0.0159 | 2.4000e-003 | 0.0000 | 2.4000e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0230 | 0.2268 | 0.1489 | 2.4000e-004 | | 0.0129 | 0.0129 | | 0.0120 | 0.0120 | 0.0000 | 21.4161 | 21.4161 | 5.4500e-003 | 0.0000 | 21.5524 |
| **Total** | **0.0230** | **0.2268** | **0.1489** | **2.4000e-004** | **0.0159** | **0.0129** | **0.0287** | **2.4000e-003** | **0.0120** | **0.0144** | **0.0000** | **21.4161** | **21.4161** | **5.4500e-003** | **0.0000** | **21.5524** |

## 3.2 Demolition - 2019

**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 | 5.1000e-004 | 0.0178 | 3.6400e-003 | 4.0000e-005 | 8.3000e-004 | 6.0000e-005 | 8.9000e-004 | 2.3000e-004 | 5.0000e-005 | 2.8000e-004 | 0.0000 | 4.0244 | 4.0244 | 3.1000e-004 | 0.0000 | 4.0322 |
| 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 | 6.5000e-004 | 5.4000e-004 | 5.9000e-003 | 2.0000e-005 | 1.4200e-003 | 1.0000e-005 | 1.4400e-003 | 3.8000e-004 | 1.0000e-005 | 3.9000e-004 | 0.0000 | 1.3694 | 1.3694 | 5.0000e-005 | 0.0000 | 1.3705 |
| **Total** | **1.1600e-003** | **0.0183** | **9.5400e-003** | **6.0000e-005** | **2.2500e-003** | **7.0000e-005** | **2.3300e-003** | **6.1000e-004** | **6.0000e-005** | **6.7000e-004** | **0.0000** | **5.3938** | **5.3938** | **3.6000e-004** | **0.0000** | **5.4027** |

## 3.3 Site Preparation - 2019

**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 | | | | | 5.8000e-003 | 0.0000 | 5.8000e-003 | 2.9500e-003 | 0.0000 | 2.9500e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.7100e-003 | 0.0195 | 7.8900e-003 | 2.0000e-005 | | 8.8000e-004 | 8.8000e-004 | | 8.1000e-004 | 8.1000e-004 | 0.0000 | 1.5467 | 1.5467 | 4.9000e-004 | 0.0000 | 1.5589 |
| **Total** | **1.7100e-003** | **0.0195** | **7.8900e-003** | **2.0000e-005** | **5.8000e-003** | **8.8000e-004** | **6.6800e-003** | **2.9500e-003** | **8.1000e-004** | **3.7600e-003** | **0.0000** | **1.5467** | **1.5467** | **4.9000e-004** | **0.0000** | **1.5589** |

## 3.3 Site Preparation - 2019

### 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 | 4.0000e-005 | 3.0000e-005 | 3.6000e-004 | 0.0000 | 9.0000e-005 | 0.0000 | 9.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0843 | 0.0843 | 0.0000 | 0.0000 | 0.0843 |
| **Total** | **4.0000e-005** | **3.0000e-005** | **3.6000e-004** | **0.0000** | **9.0000e-005** | **0.0000** | **9.0000e-005** | **2.0000e-005** | **0.0000** | **2.0000e-005** | **0.0000** | **0.0843** | **0.0843** | **0.0000** | **0.0000** | **0.0843** |

### 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 | | | | | 5.8000e-003 | 0.0000 | 5.8000e-003 | 2.9500e-003 | 0.0000 | 2.9500e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.7100e-003 | 0.0195 | 7.8900e-003 | 2.0000e-005 | | 8.8000e-004 | 8.8000e-004 | | 8.1000e-004 | 8.1000e-004 | 0.0000 | 1.5467 | 1.5467 | 4.9000e-004 | 0.0000 | 1.5589 |
| **Total** | **1.7100e-003** | **0.0195** | **7.8900e-003** | **2.0000e-005** | **5.8000e-003** | **8.8000e-004** | **6.6800e-003** | **2.9500e-003** | **8.1000e-004** | **3.7600e-003** | **0.0000** | **1.5467** | **1.5467** | **4.9000e-004** | **0.0000** | **1.5589** |

## 3.3 Site Preparation - 2019

**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 | 4.0000e-005 | 3.0000e-005 | 3.6000e-004 | 0.0000 | 9.0000e-005 | 0.0000 | 9.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0843 | 0.0843 | 0.0000 | 0.0000 | 0.0843 |
| **Total** | **4.0000e-005** | **3.0000e-005** | **3.6000e-004** | **0.0000** | **9.0000e-005** | **0.0000** | **9.0000e-005** | **2.0000e-005** | **0.0000** | **2.0000e-005** | **0.0000** | **0.0843** | **0.0843** | **0.0000** | **0.0000** | **0.0843** |

## 3.4 Grading - 2019

**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 | | | | | 0.0675 | 0.0000 | 0.0675 | 0.0363 | 0.0000 | 0.0363 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0206 | 0.2325 | 0.0958 | 2.0000e-004 | | 0.0107 | 0.0107 | | 9.8200e-003 | 9.8200e-003 | 0.0000 | 18.3684 | 18.3684 | 5.8100e-003 | 0.0000 | 18.5137 |
| **Total** | **0.0206** | **0.2325** | **0.0958** | **2.0000e-004** | **0.0675** | **0.0107** | **0.0782** | **0.0363** | **9.8200e-003** | **0.0461** | **0.0000** | **18.3684** | **18.3684** | **5.8100e-003** | **0.0000** | **18.5137** |

## 3.4 Grading - 2019

### 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 | 3.9900e-003 | 0.1391 | 0.0284 | 3.2000e-004 | 0.0118 | 4.4000e-004 | 0.0122 | 3.0700e-003 | 4.2000e-004 | 3.5000e-003 | 0.0000 | 31.4398 | 31.4398 | 2.4100e-003 | 0.0000 | 31.5002 |
| 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 | 5.8000e-004 | 4.8000e-004 | 5.2700e-003 | 1.0000e-005 | 1.2700e-003 | 1.0000e-005 | 1.2800e-003 | 3.4000e-004 | 1.0000e-005 | 3.5000e-004 | 0.0000 | 1.2219 | 1.2219 | 4.0000e-005 | 0.0000 | 1.2229 |
| **Total** | **4.5700e-003** | **0.1396** | **0.0337** | **3.3000e-004** | **0.0130** | **4.5000e-004** | **0.0135** | **3.4100e-003** | **4.3000e-004** | **3.8500e-003** | **0.0000** | **32.6617** | **32.6617** | **2.4500e-003** | **0.0000** | **32.7231** |

### 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 | | | | | 0.0675 | 0.0000 | 0.0675 | 0.0363 | 0.0000 | 0.0363 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0206 | 0.2325 | 0.0958 | 2.0000e-004 | | 0.0107 | 0.0107 | | 9.8200e-003 | 9.8200e-003 | 0.0000 | 18.3684 | 18.3684 | 5.8100e-003 | 0.0000 | 18.5136 |
| **Total** | **0.0206** | **0.2325** | **0.0958** | **2.0000e-004** | **0.0675** | **0.0107** | **0.0782** | **0.0363** | **9.8200e-003** | **0.0461** | **0.0000** | **18.3684** | **18.3684** | **5.8100e-003** | **0.0000** | **18.5136** |

## 3.4 Grading - 2019

**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 | 3.9900e-003 | 0.1391 | 0.0284 | 3.2000e-004 | 0.0118 | 4.4000e-004 | 0.0122 | 3.0700e-003 | 4.2000e-004 | 3.5000e-003 | 0.0000 | 31.4398 | 31.4398 | 2.4100e-003 | 0.0000 | 31.5002 |
| 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 | 5.8000e-004 | 4.8000e-004 | 5.2700e-003 | 1.0000e-005 | 1.2700e-003 | 1.0000e-005 | 1.2800e-003 | 3.4000e-004 | 1.0000e-005 | 3.5000e-004 | 0.0000 | 1.2219 | 1.2219 | 4.0000e-005 | 0.0000 | 1.2229 |
| **Total** | **4.5700e-003** | **0.1396** | **0.0337** | **3.3000e-004** | **0.0130** | **4.5000e-004** | **0.0135** | **3.4100e-003** | **4.3000e-004** | **3.8500e-003** | **0.0000** | **32.6617** | **32.6617** | **2.4500e-003** | **0.0000** | **32.7231** |

## 3.4 Grading - 2020

**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 | | | | | 0.0720 | 0.0000 | 0.0720 | 0.0388 | 0.0000 | 0.0388 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0209 | 0.2338 | 0.1000 | 2.2000e-004 | | 0.0106 | 0.0106 | | 9.7600e-003 | 9.7600e-003 | 0.0000 | 19.2039 | 19.2039 | 6.2100e-003 | 0.0000 | 19.3591 |
| **Total** | **0.0209** | **0.2338** | **0.1000** | **2.2000e-004** | **0.0720** | **0.0106** | **0.0827** | **0.0388** | **9.7600e-003** | **0.0485** | **0.0000** | **19.2039** | **19.2039** | **6.2100e-003** | **0.0000** | **19.3591** |

## 3.4 Grading - 2020

### 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 | 3.9500e-003 | 0.1401 | 0.0295 | 3.4000e-004 | 0.0119 | 3.8000e-004 | 0.0123 | 3.1200e-003 | 3.7000e-004 | 3.4800e-003 | 0.0000 | 33.2907 | 33.2907 | 2.5000e-003 | 0.0000 | 33.3533 |
| 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 | 5.7000e-004 | 4.6000e-004 | 5.1000e-003 | 1.0000e-005 | 1.3600e-003 | 1.0000e-005 | 1.3700e-003 | 3.6000e-004 | 1.0000e-005 | 3.7000e-004 | 0.0000 | 1.2665 | 1.2665 | 4.0000e-005 | 0.0000 | 1.2675 |
| **Total** | **4.5200e-003** | **0.1405** | **0.0346** | **3.5000e-004** | **0.0132** | **3.9000e-004** | **0.0136** | **3.4800e-003** | **3.8000e-004** | **3.8500e-003** | **0.0000** | **34.5572** | **34.5572** | **2.5400e-003** | **0.0000** | **34.6208** |

### 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 | | | | | 0.0720 | 0.0000 | 0.0720 | 0.0388 | 0.0000 | 0.0388 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0209 | 0.2338 | 0.1000 | 2.2000e-004 | | 0.0106 | 0.0106 | | 9.7600e-003 | 9.7600e-003 | 0.0000 | 19.2038 | 19.2038 | 6.2100e-003 | 0.0000 | 19.3591 |
| **Total** | **0.0209** | **0.2338** | **0.1000** | **2.2000e-004** | **0.0720** | **0.0106** | **0.0827** | **0.0388** | **9.7600e-003** | **0.0485** | **0.0000** | **19.2038** | **19.2038** | **6.2100e-003** | **0.0000** | **19.3591** |

## 3.4 Grading - 2020

**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 | 3.9500e-003 | 0.1401 | 0.0295 | 3.4000e-004 | 0.0119 | 3.8000e-004 | 0.0123 | 3.1200e-003 | 3.7000e-004 | 3.4800e-003 | 0.0000 | 33.2907 | 33.2907 | 2.5000e-003 | 0.0000 | 33.3533 |
| 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 | 5.7000e-004 | 4.6000e-004 | 5.1000e-003 | 1.0000e-005 | 1.3600e-003 | 1.0000e-005 | 1.3700e-003 | 3.6000e-004 | 1.0000e-005 | 3.7000e-004 | 0.0000 | 1.2665 | 1.2665 | 4.0000e-005 | 0.0000 | 1.2675 |
| **Total** | **4.5200e-003** | **0.1405** | **0.0346** | **3.5000e-004** | **0.0132** | **3.9000e-004** | **0.0136** | **3.4800e-003** | **3.8000e-004** | **3.8500e-003** | **0.0000** | **34.5572** | **34.5572** | **2.5400e-003** | **0.0000** | **34.6208** |

## 3.5 Building Construction - 2020

**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 | 0.2345 | 1.7080 | 1.5232 | 2.5500e-003 | | 0.0919 | 0.0919 | | 0.0888 | 0.0888 | 0.0000 | 209.6812 | 209.6812 | 0.0389 | 0.0000 | 210.6543 |
| **Total** | **0.2345** | **1.7080** | **1.5232** | **2.5500e-003** | | **0.0919** | **0.0919** | | **0.0888** | **0.0888** | **0.0000** | **209.6812** | **209.6812** | **0.0389** | **0.0000** | **210.6543** |

## 3.5 Building Construction - 2020

### 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 | 0.0339 | 1.0138 | 0.2744 | 2.4000e-003 | 0.0589 | 4.7200e-003 | 0.0636 | 0.0170 | 4.5100e-003 | 0.0215 | 0.0000 | 232.4151 | 232.4151 | 0.0148 | 0.0000 | 232.7843 |
| Worker | 0.1573 | 0.1268 | 1.4025 | 3.8500e-003 | 0.3734 | 3.1800e-003 | 0.3766 | 0.0992 | 2.9300e-003 | 0.1021 | 0.0000 | 347.9997 | 347.9997 | 0.0110 | 0.0000 | 348.2738 |
| **Total** | **0.1912** | **1.1406** | **1.6770** | **6.2500e-003** | **0.4323** | **7.9000e-003** | **0.4402** | **0.1162** | **7.4400e-003** | **0.1236** | **0.0000** | **580.4148** | **580.4148** | **0.0257** | **0.0000** | **581.0582** |

### 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 | 0.2345 | 1.7080 | 1.5232 | 2.5500e-003 | | 0.0919 | 0.0919 | | 0.0888 | 0.0888 | 0.0000 | 209.6809 | 209.6809 | 0.0389 | 0.0000 | 210.6540 |
| **Total** | **0.2345** | **1.7080** | **1.5232** | **2.5500e-003** | | **0.0919** | **0.0919** | | **0.0888** | **0.0888** | **0.0000** | **209.6809** | **209.6809** | **0.0389** | **0.0000** | **210.6540** |

## 3.5 Building Construction - 2020

**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 | 0.0339 | 1.0138 | 0.2744 | 2.4000e-003 | 0.0589 | 4.7200e-003 | 0.0636 | 0.0170 | 4.5100e-003 | 0.0215 | 0.0000 | 232.4151 | 232.4151 | 0.0148 | 0.0000 | 232.7843 |
| Worker | 0.1573 | 0.1268 | 1.4025 | 3.8500e-003 | 0.3734 | 3.1800e-003 | 0.3766 | 0.0992 | 2.9300e-003 | 0.1021 | 0.0000 | 347.9997 | 347.9997 | 0.0110 | 0.0000 | 348.2738 |
| **Total** | **0.1912** | **1.1406** | **1.6770** | **6.2500e-003** | **0.4323** | **7.9000e-003** | **0.4402** | **0.1162** | **7.4400e-003** | **0.1236** | **0.0000** | **580.4148** | **580.4148** | **0.0257** | **0.0000** | **581.0582** |

## 3.5 Building Construction - 2021

**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 | 0.2103 | 1.5818 | 1.4963 | 2.5600e-003 | | 0.0794 | 0.0794 | | 0.0767 | 0.0767 | 0.0000 | 210.5952 | 210.5952 | 0.0376 | 0.0000 | 211.5352 |
| **Total** | **0.2103** | **1.5818** | **1.4963** | **2.5600e-003** | | **0.0794** | **0.0794** | | **0.0767** | **0.0767** | **0.0000** | **210.5952** | **210.5952** | **0.0376** | **0.0000** | **211.5352** |

## 3.5 Building Construction - 2021

### 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 | 0.0292 | 0.9273 | 0.2514 | 2.3900e-003 | 0.0592 | 1.8900e-003 | 0.0611 | 0.0171 | 1.8100e-003 | 0.0189 | 0.0000 | 231.6082 | 231.6082 | 0.0142 | 0.0000 | 231.9634 |
| Worker | 0.1472 | 0.1146 | 1.2941 | 3.7400e-003 | 0.3750 | 3.0900e-003 | 0.3781 | 0.0996 | 2.8500e-003 | 0.1024 | 0.0000 | 338.4074 | 338.4074 | 9.9600e-003 | 0.0000 | 338.6564 |
| **Total** | **0.1764** | **1.0419** | **1.5455** | **6.1300e-003** | **0.4342** | **4.9800e-003** | **0.4392** | **0.1167** | **4.6600e-003** | **0.1213** | **0.0000** | **570.0156** | **570.0156** | **0.0242** | **0.0000** | **570.6197** |

### 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 | 0.2103 | 1.5818 | 1.4963 | 2.5600e-003 | | 0.0794 | 0.0794 | | 0.0767 | 0.0767 | 0.0000 | 210.5950 | 210.5950 | 0.0376 | 0.0000 | 211.5349 |
| **Total** | **0.2103** | **1.5818** | **1.4963** | **2.5600e-003** | | **0.0794** | **0.0794** | | **0.0767** | **0.0767** | **0.0000** | **210.5950** | **210.5950** | **0.0376** | **0.0000** | **211.5349** |

## 3.5 Building Construction - 2021

**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 | 0.0292 | 0.9273 | 0.2514 | 2.3900e-003 | 0.0592 | 1.8900e-003 | 0.0611 | 0.0171 | 1.8100e-003 | 0.0189 | 0.0000 | 231.6082 | 231.6082 | 0.0142 | 0.0000 | 231.9634 |
| Worker | 0.1472 | 0.1146 | 1.2941 | 3.7400e-003 | 0.3750 | 3.0900e-003 | 0.3781 | 0.0996 | 2.8500e-003 | 0.1024 | 0.0000 | 338.4074 | 338.4074 | 9.9600e-003 | 0.0000 | 338.6564 |
| **Total** | **0.1764** | **1.0419** | **1.5455** | **6.1300e-003** | **0.4342** | **4.9800e-003** | **0.4392** | **0.1167** | **4.6600e-003** | **0.1213** | **0.0000** | **570.0156** | **570.0156** | **0.0242** | **0.0000** | **570.6197** |

## 3.6 Paving - 2020

**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 | 0.0185 | 0.1859 | 0.1953 | 3.0000e-004 | | 0.0103 | 0.0103 | | 9.5200e-003 | 9.5200e-003 | 0.0000 | 25.8845 | 25.8845 | 8.2100e-003 | 0.0000 | 26.0897 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0185** | **0.1859** | **0.1953** | **3.0000e-004** | | **0.0103** | **0.0103** | | **9.5200e-003** | **9.5200e-003** | **0.0000** | **25.8845** | **25.8845** | **8.2100e-003** | **0.0000** | **26.0897** |

## 3.6 Paving - 2020

### 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 | 1.3200e-003 | 1.0600e-003 | 0.0118 | 3.0000e-005 | 3.1300e-003 | 3.0000e-005 | 3.1600e-003 | 8.3000e-004 | 2.0000e-005 | 8.6000e-004 | 0.0000 | 2.9211 | 2.9211 | 9.0000e-005 | 0.0000 | 2.9234 |
| **Total** | **1.3200e-003** | **1.0600e-003** | **0.0118** | **3.0000e-005** | **3.1300e-003** | **3.0000e-005** | **3.1600e-003** | **8.3000e-004** | **2.0000e-005** | **8.6000e-004** | **0.0000** | **2.9211** | **2.9211** | **9.0000e-005** | **0.0000** | **2.9234** |

### 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 | 0.0185 | 0.1859 | 0.1953 | 3.0000e-004 | | 0.0103 | 0.0103 | | 9.5200e-003 | 9.5200e-003 | 0.0000 | 25.8845 | 25.8845 | 8.2100e-003 | 0.0000 | 26.0896 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0185** | **0.1859** | **0.1953** | **3.0000e-004** | | **0.0103** | **0.0103** | | **9.5200e-003** | **9.5200e-003** | **0.0000** | **25.8845** | **25.8845** | **8.2100e-003** | **0.0000** | **26.0896** |

## 3.6 Paving - 2020

**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 | 1.3200e-003 | 1.0600e-003 | 0.0118 | 3.0000e-005 | 3.1300e-003 | 3.0000e-005 | 3.1600e-003 | 8.3000e-004 | 2.0000e-005 | 8.6000e-004 | 0.0000 | 2.9211 | 2.9211 | 9.0000e-005 | 0.0000 | 2.9234 |
| **Total** | **1.3200e-003** | **1.0600e-003** | **0.0118** | **3.0000e-005** | **3.1300e-003** | **3.0000e-005** | **3.1600e-003** | **8.3000e-004** | **2.0000e-005** | **8.6000e-004** | **0.0000** | **2.9211** | **2.9211** | **9.0000e-005** | **0.0000** | **2.9234** |

## 3.7 Architectural Coating - 2021

**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 | 0.6034 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.4100e-003 | 0.0168 | 0.0200 | 3.0000e-005 | | 1.0400e-003 | 1.0400e-003 | | 1.0400e-003 | 1.0400e-003 | 0.0000 | 2.8086 | 2.8086 | 1.9000e-004 | 0.0000 | 2.8134 |
| **Total** | **0.6058** | **0.0168** | **0.0200** | **3.0000e-005** | | **1.0400e-003** | **1.0400e-003** | | **1.0400e-003** | **1.0400e-003** | **0.0000** | **2.8086** | **2.8086** | **1.9000e-004** | **0.0000** | **2.8134** |

## 3.7 Architectural Coating - 2021

### 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 | 2.7900e-003 | 2.1700e-003 | 0.0245 | 7.0000e-005 | 7.1100e-003 | 6.0000e-005 | 7.1700e-003 | 1.8900e-003 | 5.0000e-005 | 1.9400e-003 | 0.0000 | 6.4181 | 6.4181 | 1.9000e-004 | 0.0000 | 6.4228 |
| **Total** | **2.7900e-003** | **2.1700e-003** | **0.0245** | **7.0000e-005** | **7.1100e-003** | **6.0000e-005** | **7.1700e-003** | **1.8900e-003** | **5.0000e-005** | **1.9400e-003** | **0.0000** | **6.4181** | **6.4181** | **1.9000e-004** | **0.0000** | **6.4228** |

### 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 | 0.6034 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.4100e-003 | 0.0168 | 0.0200 | 3.0000e-005 | | 1.0400e-003 | 1.0400e-003 | | 1.0400e-003 | 1.0400e-003 | 0.0000 | 2.8086 | 2.8086 | 1.9000e-004 | 0.0000 | 2.8134 |
| **Total** | **0.6058** | **0.0168** | **0.0200** | **3.0000e-005** | | **1.0400e-003** | **1.0400e-003** | | **1.0400e-003** | **1.0400e-003** | **0.0000** | **2.8086** | **2.8086** | **1.9000e-004** | **0.0000** | **2.8134** |

### 3.7 Architectural Coating - 2021

**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 | 2.7900e-003 | 2.1700e-003 | 0.0245 | 7.0000e-005 | 7.1100e-003 | 6.0000e-005 | 7.1700e-003 | 1.8900e-003 | 5.0000e-005 | 1.9400e-003 | 0.0000 | 6.4181 | 6.4181 | 1.9000e-004 | 0.0000 | 6.4228 |
| **Total** | **2.7900e-003** | **2.1700e-003** | **0.0245** | **7.0000e-005** | **7.1100e-003** | **6.0000e-005** | **7.1700e-003** | **1.8900e-003** | **5.0000e-005** | **1.9400e-003** | **0.0000** | **6.4181** | **6.4181** | **1.9000e-004** | **0.0000** | **6.4228** |

## 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 | | |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | | |
| Other Non-Asphalt Surfaces | 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 | 0.00 | 0.00 | 0.00 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| Enclosed Parking with Elevator | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Other Non-Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| Enclosed Parking with Elevator | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| Other Non-Asphalt Surfaces | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |

## 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 | 686.0235 | 686.0235 | 0.0178 | 3.6900e-003 | 687.5692 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 686.0235 | 686.0235 | 0.0178 | 3.6900e-003 | 687.5692 |
| NaturalGas Mitigated | 9.8400e-003 | 0.0841 | 0.0358 | 5.4000e-004 | | 6.8000e-003 | 6.8000e-003 | | 6.8000e-003 | 6.8000e-003 | 0.0000 | 97.3865 | 97.3865 | 1.8700e-003 | 1.7900e-003 | 97.9652 |
| NaturalGas Unmitigated | 9.8400e-003 | 0.0841 | 0.0358 | 5.4000e-004 | | 6.8000e-003 | 6.8000e-003 | | 6.8000e-003 | 6.8000e-003 | 0.0000 | 97.3865 | 97.3865 | 1.8700e-003 | 1.7900e-003 | 97.9652 |

## 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 | 1.82495e+006 | 9.8400e-003 | 0.0841 | 0.0358 | 5.4000e-004 | | 6.8000e-003 | 6.8000e-003 | | 6.8000e-003 | 6.8000e-003 | 0.0000 | 97.3865 | 97.3865 | 1.8700e-003 | 1.7900e-003 | 97.9652 |
| Enclosed Parking with Elevator | 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 |
| Other Non-Asphalt Surfaces | 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** | | **9.8400e-003** | **0.0841** | **0.0358** | **5.4000e-004** | | **6.8000e-003** | **6.8000e-003** | | **6.8000e-003** | **6.8000e-003** | **0.0000** | **97.3865** | **97.3865** | **1.8700e-003** | **1.7900e-003** | **97.9652** |

### 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 | 1.82495e+006 | 9.8400e-003 | 0.0841 | 0.0358 | 5.4000e-004 | | 6.8000e-003 | 6.8000e-003 | | 6.8000e-003 | 6.8000e-003 | 0.0000 | 97.3865 | 97.3865 | 1.8700e-003 | 1.7900e-003 | 97.9652 |
| Enclosed Parking with Elevator | 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 |
| Other Non-Asphalt Surfaces | 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** | | **9.8400e-003** | **0.0841** | **0.0358** | **5.4000e-004** | | **6.8000e-003** | **6.8000e-003** | | **6.8000e-003** | **6.8000e-003** | **0.0000** | **97.3865** | **97.3865** | **1.8700e-003** | **1.7900e-003** | **97.9652** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Mid Rise | 784096 | 396.6782 | 0.0103 | 2.1300e-003 | 397.5719 |
| Enclosed Parking with Elevator | 571936 | 289.3454 | 7.5200e-003 | 1.5600e-003 | 289.9973 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **686.0235** | **0.0178** | **3.6900e-003** | **687.5692** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Mid Rise | 784096 | 396.6782 | 0.0103 | 2.1300e-003 | 397.5719 |
| Enclosed Parking with Elevator | 571936 | 289.3454 | 7.5200e-003 | 1.5600e-003 | 289.9973 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **686.0235** | **0.0178** | **3.6900e-003** | **687.5692** |

## 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 | 1.4187 | 0.0750 | 3.3068 | 3.3200e-003 | | 0.2004 | 0.2004 | | 0.2004 | 0.2004 | 21.0314 | 43.7583 | 64.7897 | 0.0660 | 1.4300e-003 | 66.8640 |
| Unmitigated | 1.4187 | 0.0750 | 3.3068 | 3.3200e-003 | | 0.2004 | 0.2004 | | 0.2004 | 0.2004 | 21.0314 | 43.7583 | 64.7897 | 0.0660 | 1.4300e-003 | 66.8640 |

## 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 | 0.0603 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.6477 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.6485 | 0.0514 | 1.2587 | 3.2100e-003 | | 0.1891 | 0.1891 | | 0.1891 | 0.1891 | 21.0314 | 40.4151 | 61.4465 | 0.0627 | 1.4300e-003 | 63.4398 |
| Landscaping | 0.0621 | 0.0236 | 2.0481 | 1.1000e-004 | | 0.0113 | 0.0113 | | 0.0113 | 0.0113 | 0.0000 | 3.3432 | 3.3432 | 3.2400e-003 | 0.0000 | 3.4242 |
| **Total** | **1.4187** | **0.0750** | **3.3068** | **3.3200e-003** | | **0.2004** | **0.2004** | | **0.2004** | **0.2004** | **21.0314** | **43.7583** | **64.7897** | **0.0660** | **1.4300e-003** | **66.8640** |

## 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 | 0.0603 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.6477 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.6485 | 0.0514 | 1.2587 | 3.2100e-003 | | 0.1891 | 0.1891 | | 0.1891 | 0.1891 | 21.0314 | 40.4151 | 61.4465 | 0.0627 | 1.4300e-003 | 63.4398 |
| Landscaping | 0.0621 | 0.0236 | 2.0481 | 1.1000e-004 | | 0.0113 | 0.0113 | | 0.0113 | 0.0113 | 0.0000 | 3.3432 | 3.3432 | 3.2400e-003 | 0.0000 | 3.4242 |
| **Total** | **1.4187** | **0.0750** | **3.3068** | **3.3200e-003** | | **0.2004** | **0.2004** | | **0.2004** | **0.2004** | **21.0314** | **43.7583** | **64.7897** | **0.0660** | **1.4300e-003** | **66.8640** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 134.7853 | 0.4238 | 0.0106 | 148.5467 |
| Unmitigated | 134.7853 | 0.4238 | 0.0106 | 148.5467 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Mid Rise | 12.9005 / 8.13292 | 134.7853 | 0.4238 | 0.0106 | 148.5467 |
| Enclosed Parking with Elevator | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **134.7853** | **0.4238** | **0.0106** | **148.5467** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Mid Rise | 12.9005 / 8.13292 | 134.7853 | 0.4238 | 0.0106 | 148.5467 |
| Enclosed Parking with Elevator | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **134.7853** | **0.4238** | **0.0106** | **148.5467** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 18.4884 | 1.0926 | 0.0000 | 45.8043 |
| Unmitigated | 18.4884 | 1.0926 | 0.0000 | 45.8043 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Mid Rise | 91.08 | 18.4884 | 1.0926 | 0.0000 | 45.8043 |
| Enclosed Parking with Elevator | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **18.4884** | **1.0926** | **0.0000** | **45.8043** |

### 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Mid Rise | 91.08 | 18.4884 | 1.0926 | 0.0000 | 45.8043 |
| Enclosed Parking with Elevator | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **18.4884** | **1.0926** | **0.0000** | **45.8043** |

## 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

# GUSD Apartment Site Construction

**Los Angeles-South Coast County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Enclosed Parking with Elevator | 244.00 | Space | 2.20 | 97,600.00 | 0 |
| Other Non-Asphalt Surfaces | 69.17 | 1000sqft | 0.00 | 41,288.00 | 0 |
| Apartments Mid Rise | 198.00 | Dwelling Unit | 1.40 | 176,769.00 | 566 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 33 |
| **Climate Zone** | 11 | | | **Operational Year** | 2022 |
| **Utility Company** | Glendale Water & Power | | | | |
| **CO2 Intensity (lb/MWhr)** | 1115.33 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

GUSD Apartment Site Construction - Los Angeles-South Coast County, Summer

Project Characteristics -

Land Use - per the SCEA's CalEEMod modeling

Construction Phase - per the SCEA construction schedule

Grading - grading export and total acreage per the SCEA's CalEEMod modeling

Demolition -

Trips and VMT - hauling trip length per the SCEA

Vehicle Trips - construction only

Construction Off-road Equipment Mitigation -

Area Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstructionPhase | NumDays | 10.00 | 22.00 |
| tblConstructionPhase | NumDays | 200.00 | 463.00 |
| tblConstructionPhase | NumDays | 4.00 | 60.00 |
| tblConstructionPhase | NumDays | 10.00 | 44.00 |
| tblConstructionPhase | PhaseEndDate | 9/29/2020 | 11/22/2021 |
| tblConstructionPhase | PhaseEndDate | 9/1/2020 | 11/22/2021 |
| tblConstructionPhase | PhaseEndDate | 11/26/2019 | 2/12/2020 |
| tblConstructionPhase | PhaseEndDate | 9/15/2020 | 11/22/2020 |
| tblConstructionPhase | PhaseStartDate | 9/16/2020 | 10/22/2021 |
| tblConstructionPhase | PhaseStartDate | 11/27/2019 | 2/13/2020 |
| tblConstructionPhase | PhaseStartDate | 9/2/2020 | 9/22/2020 |
| tblGrading | AcresOfGrading | 22.50 | 1.80 |
| tblGrading | MaterialExported | 0.00 | 19,004.00 |
| tblLandUse | LandUseSquareFeet | 69,170.00 | 41,288.00 |

| | | | |
|---|---|---|---|
| tblLandUse | LandUseSquareFeet | 198,000.00 | 176,769.00 |
| tblLandUse | LotAcreage | 1.59 | 0.00 |
| tblLandUse | LotAcreage | 5.21 | 1.40 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 13.20 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 13.20 |
| tblVehicleTrips | HO_TL | 8.70 | 0.00 |
| tblVehicleTrips | HS_TL | 5.90 | 0.00 |
| tblVehicleTrips | HW_TL | 14.70 | 0.00 |
| tblVehicleTrips | ST_TR | 6.39 | 0.00 |
| tblVehicleTrips | SU_TR | 5.86 | 0.00 |
| tblVehicleTrips | WD_TR | 6.65 | 0.00 |

## 2.0 Emissions Summary

## 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 | | | | | |
| 2019 | 2.4103 | 25.4111 | 15.8701 | 0.0374 | 5.8890 | 1.2932 | 6.7721 | 2.9774 | 1.2083 | 3.7899 | 0.0000 | 3,907.9144 | 3,907.9144 | 0.6399 | 0.0000 | 3,923.5321 |
| 2020 | 4.5762 | 32.8641 | 37.8070 | 0.0930 | 5.4541 | 1.3348 | 6.1638 | 2.7200 | 1.2669 | 3.3738 | 0.0000 | 9,164.4333 | 9,164.4333 | 1.0338 | 0.0000 | 9,190.2774 |
| 2021 | 58.6488 | 24.0702 | 31.0311 | 0.0863 | 4.4755 | 0.8265 | 5.3020 | 1.1987 | 0.7997 | 1.9984 | 0.0000 | 8,540.4464 | 8,540.4464 | 0.6265 | 0.0000 | 8,556.1098 |
| **Maximum** | **58.6488** | **32.8641** | **37.8070** | **0.0930** | **5.8890** | **1.3348** | **6.7721** | **2.9774** | **1.2669** | **3.7899** | **0.0000** | **9,164.4333** | **9,164.4333** | **1.0338** | **0.0000** | **9,190.2774** |

### 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 | | | | | |
| 2019 | 2.4103 | 25.4111 | 15.8701 | 0.0374 | 5.8890 | 1.2932 | 6.7721 | 2.9774 | 1.2083 | 3.7899 | 0.0000 | 3,907.9144 | 3,907.9144 | 0.6399 | 0.0000 | 3,923.5321 |
| 2020 | 4.5762 | 32.8641 | 37.8070 | 0.0930 | 5.4541 | 1.3348 | 6.1638 | 2.7200 | 1.2669 | 3.3738 | 0.0000 | 9,164.4333 | 9,164.4333 | 1.0338 | 0.0000 | 9,190.2774 |
| 2021 | 58.6488 | 24.0702 | 31.0311 | 0.0863 | 4.4755 | 0.8265 | 5.3020 | 1.1987 | 0.7997 | 1.9984 | 0.0000 | 8,540.4464 | 8,540.4464 | 0.6265 | 0.0000 | 8,556.1098 |
| **Maximum** | **58.6488** | **32.8641** | **37.8070** | **0.0930** | **5.8890** | **1.3348** | **6.7721** | **2.9774** | **1.2669** | **3.7899** | **0.0000** | **9,164.4333** | **9,164.4333** | **1.0338** | **0.0000** | **9,190.2774** |

GUSD Apartment Site Construction - Los Angeles-South Coast County, Summer

| | ROG | NOx | 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 |

## 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 | 56.2599 | 4.2971 | 117.0781 | 0.2577 | | 15.2154 | 15.2154 | | 15.2154 | 15.2154 | 1,854.6498 | 3,593.4819 | 5,448.1318 | 5.5595 | 0.1259 | 5,624.6312 |
| Energy | 0.0539 | 0.4608 | 0.1961 | 2.9400e-003 | | 0.0373 | 0.0373 | | 0.0373 | 0.0373 | | 588.2205 | 588.2205 | 0.0113 | 0.0108 | 591.7160 |
| 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 |
| **Total** | **56.3138** | **4.7578** | **117.2742** | **0.2607** | **0.0000** | **15.2526** | **15.2526** | **0.0000** | **15.2526** | **15.2526** | **1,854.6498** | **4,181.7024** | **6,036.3523** | **5.5708** | **0.1367** | **6,216.3472** |

### 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 | 56.2599 | 4.2971 | 117.0781 | 0.2577 | | 15.2154 | 15.2154 | | 15.2154 | 15.2154 | 1,854.6498 | 3,593.4819 | 5,448.1318 | 5.5595 | 0.1259 | 5,624.6312 |
| Energy | 0.0539 | 0.4608 | 0.1961 | 2.9400e-003 | | 0.0373 | 0.0373 | | 0.0373 | 0.0373 | | 588.2205 | 588.2205 | 0.0113 | 0.0108 | 591.7160 |
| 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 |
| **Total** | **56.3138** | **4.7578** | **117.2742** | **0.2607** | **0.0000** | **15.2526** | **15.2526** | **0.0000** | **15.2526** | **15.2526** | **1,854.6498** | **4,181.7024** | **6,036.3523** | **5.5708** | **0.1367** | **6,216.3472** |

| | ROG | NOx | 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 | 10/22/2019 | 11/18/2019 | 5 | 20 | |
| 2 | Site Preparation | Site Preparation | 11/19/2019 | 11/20/2019 | 5 | 2 | |
| 3 | Grading | Grading | 11/21/2019 | 2/12/2020 | 5 | 60 | |
| 4 | Building Construction | Building Construction | 2/13/2020 | 11/22/2021 | 5 | 463 | |
| 5 | Paving | Paving | 9/22/2020 | 11/22/2020 | 5 | 44 | |
| 6 | Architectural Coating | Architectural Coating | 10/22/2021 | 11/22/2021 | 5 | 22 | |

**Acres of Grading (Site Preparation Phase): 1**

**Acres of Grading (Grading Phase): 1.8**

**Acres of Paving: 2.2**

**Residential Indoor: 357,957; Residential Outdoor: 119,319; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 21,725 (Architectural Coating – sqft)**

**OffRoad Equipment**

GUSD Apartment Site Construction - Los Angeles-South Coast County, Summer

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Paving | Cement and Mortar Mixers | 1 | 6.00 | 9 | 0.56 |
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Cranes | 1 | 6.00 | 231 | 0.29 |
| Building Construction | Forklifts | 1 | 6.00 | 89 | 0.20 |
| Site Preparation | Graders | 1 | 8.00 | 187 | 0.41 |
| Paving | Pavers | 1 | 6.00 | 130 | 0.42 |
| Paving | Rollers | 1 | 7.00 | 80 | 0.38 |
| Demolition | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Rubber Tired Dozers | 1 | 6.00 | 247 | 0.40 |
| Building Construction | Tractors/Loaders/Backhoes | 1 | 6.00 | 97 | 0.37 |
| Demolition | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |
| Grading | Tractors/Loaders/Backhoes | 1 | 7.00 | 97 | 0.37 |
| Paving | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Site Preparation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Grading | Graders | 1 | 6.00 | 187 | 0.41 |
| Paving | Paving Equipment | 1 | 8.00 | 132 | 0.36 |
| Site Preparation | Rubber Tired Dozers | 1 | 7.00 | 247 | 0.40 |
| Building Construction | Welders | 3 | 8.00 | 46 | 0.45 |

**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 | 5 | 13.00 | 0.00 | 147.00 | 14.70 | 6.90 | 13.20 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 3 | 8.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 3 | 8.00 | 0.00 | 2,376.00 | 14.70 | 6.90 | 13.20 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 7 | 295.00 | 81.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 5 | 13.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 59.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

## 3.2 Demolition - 2019

**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 | | | | | 1.5864 | 0.0000 | 1.5864 | 0.2402 | 0.0000 | 0.2402 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.2950 | 22.6751 | 14.8943 | 0.0241 | | 1.2863 | 1.2863 | | 1.2017 | 1.2017 | | 2,360.7198 | 2,360.7198 | 0.6011 | | 2,375.7475 |
| **Total** | **2.2950** | **22.6751** | **14.8943** | **0.0241** | **1.5864** | **1.2863** | **2.8727** | **0.2402** | **1.2017** | **1.4419** | | **2,360.7198** | **2,360.7198** | **0.6011** | | **2,375.7475** |

## 3.2 Demolition - 2019

### 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 | 0.0503 | 1.7347 | 0.3489 | 4.1400e-003 | 0.0849 | 5.6100e-003 | 0.0905 | 0.0233 | 5.3700e-003 | 0.0286 | | 448.1435 | 448.1435 | 0.0333 | | 448.9767 |
| 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 |
| Worker | 0.0649 | 0.0477 | 0.6268 | 1.5800e-003 | 0.1453 | 1.2500e-003 | 0.1466 | 0.0385 | 1.1500e-003 | 0.0397 | | 157.6839 | 157.6839 | 5.4200e-003 | | 157.8193 |
| **Total** | **0.1153** | **1.7824** | **0.9757** | **5.7200e-003** | **0.2302** | **6.8600e-003** | **0.2370** | **0.0618** | **6.5200e-003** | **0.0683** | | **605.8273** | **605.8273** | **0.0388** | | **606.7960** |

### 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 | | | | | 1.5864 | 0.0000 | 1.5864 | 0.2402 | 0.0000 | 0.2402 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.2950 | 22.6751 | 14.8943 | 0.0241 | | 1.2863 | 1.2863 | | 1.2017 | 1.2017 | 0.0000 | 2,360.7197 | 2,360.7197 | 0.6011 | | 2,375.7475 |
| **Total** | **2.2950** | **22.6751** | **14.8943** | **0.0241** | **1.5864** | **1.2863** | **2.8727** | **0.2402** | **1.2017** | **1.4419** | **0.0000** | **2,360.7197** | **2,360.7197** | **0.6011** | | **2,375.7475** |

## 3.2 Demolition - 2019

**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 | 0.0503 | 1.7347 | 0.3489 | 4.1400e-003 | 0.0849 | 5.6100e-003 | 0.0905 | 0.0233 | 5.3700e-003 | 0.0286 | | 448.1435 | 448.1435 | 0.0333 | | 448.9767 |
| 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 |
| Worker | 0.0649 | 0.0477 | 0.6268 | 1.5800e-003 | 0.1453 | 1.2500e-003 | 0.1466 | 0.0385 | 1.1500e-003 | 0.0397 | | 157.6839 | 157.6839 | 5.4200e-003 | | 157.8193 |
| **Total** | **0.1153** | **1.7824** | **0.9757** | **5.7200e-003** | **0.2302** | **6.8600e-003** | **0.2370** | **0.0618** | **6.5200e-003** | **0.0683** | | **605.8273** | **605.8273** | **0.0388** | | **606.7960** |

## 3.3 Site Preparation - 2019

**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 | | | | | 5.7996 | 0.0000 | 5.7996 | 2.9537 | 0.0000 | 2.9537 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.7123 | 19.4821 | 7.8893 | 0.0172 | | 0.8824 | 0.8824 | | 0.8118 | 0.8118 | | 1,704.9189 | 1,704.9189 | 0.5394 | | 1,718.4044 |
| **Total** | **1.7123** | **19.4821** | **7.8893** | **0.0172** | **5.7996** | **0.8824** | **6.6819** | **2.9537** | **0.8118** | **3.7655** | | **1,704.9189** | **1,704.9189** | **0.5394** | | **1,718.4044** |

## 3.3 Site Preparation - 2019

### 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 |
| 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 |
| Worker | 0.0400 | 0.0294 | 0.3857 | 9.7000e-004 | 0.0894 | 7.7000e-004 | 0.0902 | 0.0237 | 7.1000e-004 | 0.0244 | | 97.0362 | 97.0362 | 3.3300e-003 | | 97.1196 |
| **Total** | **0.0400** | **0.0294** | **0.3857** | **9.7000e-004** | **0.0894** | **7.7000e-004** | **0.0902** | **0.0237** | **7.1000e-004** | **0.0244** | | **97.0362** | **97.0362** | **3.3300e-003** | | **97.1196** |

### 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 | | | | | 5.7996 | 0.0000 | 5.7996 | 2.9537 | 0.0000 | 2.9537 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.7123 | 19.4821 | 7.8893 | 0.0172 | | 0.8824 | 0.8824 | | 0.8118 | 0.8118 | 0.0000 | 1,704.9189 | 1,704.9189 | 0.5394 | | 1,718.4044 |
| **Total** | **1.7123** | **19.4821** | **7.8893** | **0.0172** | **5.7996** | **0.8824** | **6.6819** | **2.9537** | **0.8118** | **3.7655** | **0.0000** | **1,704.9189** | **1,704.9189** | **0.5394** | | **1,718.4044** |

## 3.3 Site Preparation - 2019

**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 |
| 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 |
| Worker | 0.0400 | 0.0294 | 0.3857 | 9.7000e-004 | 0.0894 | 7.7000e-004 | 0.0902 | 0.0237 | 7.1000e-004 | 0.0244 | | 97.0362 | 97.0362 | 3.3300e-003 | | 97.1196 |
| **Total** | **0.0400** | **0.0294** | **0.3857** | **9.7000e-004** | **0.0894** | **7.7000e-004** | **0.0902** | **0.0237** | **7.1000e-004** | **0.0244** | | **97.0362** | **97.0362** | **3.3300e-003** | | **97.1196** |

## 3.4 Grading - 2019

**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 | | | | | 4.5842 | 0.0000 | 4.5842 | 2.4915 | 0.0000 | 2.4915 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.4197 | 16.0357 | 6.6065 | 0.0141 | | 0.7365 | 0.7365 | | 0.6775 | 0.6775 | | 1,396.3909 | 1,396.3909 | 0.4418 | | 1,407.4359 |
| **Total** | **1.4197** | **16.0357** | **6.6065** | **0.0141** | **4.5842** | **0.7365** | **5.3207** | **2.4915** | **0.6775** | **3.1691** | | **1,396.3909** | **1,396.3909** | **0.4418** | | **1,407.4359** |

## 3.4 Grading - 2019

### 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 | 0.2711 | 9.3460 | 1.8798 | 0.0223 | 0.8266 | 0.0302 | 0.8569 | 0.2160 | 0.0289 | 0.2450 | | 2,414.4873 | 2,414.4873 | 0.1796 | | 2,418.9766 |
| 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 |
| Worker | 0.0400 | 0.0294 | 0.3857 | 9.7000e-004 | 0.0894 | 7.7000e-004 | 0.0902 | 0.0237 | 7.1000e-004 | 0.0244 | | 97.0362 | 97.0362 | 3.3300e-003 | | 97.1196 |
| **Total** | **0.3110** | **9.3754** | **2.2655** | **0.0233** | **0.9160** | **0.0310** | **0.9470** | **0.2397** | **0.0296** | **0.2694** | | **2,511.5235** | **2,511.5235** | **0.1829** | | **2,516.0962** |

### 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 | | | | | 4.5842 | 0.0000 | 4.5842 | 2.4915 | 0.0000 | 2.4915 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.4197 | 16.0357 | 6.6065 | 0.0141 | | 0.7365 | 0.7365 | | 0.6775 | 0.6775 | 0.0000 | 1,396.3909 | 1,396.3909 | 0.4418 | | 1,407.4359 |
| **Total** | **1.4197** | **16.0357** | **6.6065** | **0.0141** | **4.5842** | **0.7365** | **5.3207** | **2.4915** | **0.6775** | **3.1691** | **0.0000** | **1,396.3909** | **1,396.3909** | **0.4418** | | **1,407.4359** |

## 3.4 Grading - 2019

**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 | 0.2711 | 9.3460 | 1.8798 | 0.0223 | 0.8266 | 0.0302 | 0.8569 | 0.2160 | 0.0289 | 0.2450 | | 2,414.4873 | 2,414.4873 | 0.1796 | | 2,418.9766 |
| 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 |
| Worker | 0.0400 | 0.0294 | 0.3857 | 9.7000e-004 | 0.0894 | 7.7000e-004 | 0.0902 | 0.0237 | 7.1000e-004 | 0.0244 | | 97.0362 | 97.0362 | 3.3300e-003 | | 97.1196 |
| **Total** | **0.3110** | **9.3754** | **2.2655** | **0.0233** | **0.9160** | **0.0310** | **0.9470** | **0.2397** | **0.0296** | **0.2694** | | **2,511.5235** | **2,511.5235** | **0.1829** | | **2,516.0962** |

## 3.4 Grading - 2020

**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 | | | | | 4.5842 | 0.0000 | 4.5842 | 2.4915 | 0.0000 | 2.4915 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.3498 | 15.0854 | 6.4543 | 0.0141 | | 0.6844 | 0.6844 | | 0.6296 | 0.6296 | | 1,365.7183 | 1,365.7183 | 0.4417 | | 1,376.7609 |
| **Total** | **1.3498** | **15.0854** | **6.4543** | **0.0141** | **4.5842** | **0.6844** | **5.2686** | **2.4915** | **0.6296** | **3.1212** | | **1,365.7183** | **1,365.7183** | **0.4417** | | **1,376.7609** |

## 3.4 Grading - 2020

### 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 | 0.2510 | 8.8102 | 1.8269 | 0.0221 | 0.7805 | 0.0246 | 0.8051 | 0.2047 | 0.0235 | 0.2282 | | 2,392.0419 | 2,392.0419 | 0.1744 | | 2,396.4014 |
| 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 |
| Worker | 0.0368 | 0.0262 | 0.3503 | 9.4000e-004 | 0.0894 | 7.5000e-004 | 0.0902 | 0.0237 | 6.9000e-004 | 0.0244 | | 94.0890 | 94.0890 | 2.9700e-003 | | 94.1632 |
| **Total** | **0.2879** | **8.8364** | **2.1772** | **0.0230** | **0.8699** | **0.0253** | **0.8952** | **0.2284** | **0.0242** | **0.2526** | | **2,486.1309** | **2,486.1309** | **0.1774** | | **2,490.5646** |

### 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 | | | | | 4.5842 | 0.0000 | 4.5842 | 2.4915 | 0.0000 | 2.4915 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.3498 | 15.0854 | 6.4543 | 0.0141 | | 0.6844 | 0.6844 | | 0.6296 | 0.6296 | 0.0000 | 1,365.7183 | 1,365.7183 | 0.4417 | | 1,376.7609 |
| **Total** | **1.3498** | **15.0854** | **6.4543** | **0.0141** | **4.5842** | **0.6844** | **5.2686** | **2.4915** | **0.6296** | **3.1212** | **0.0000** | **1,365.7183** | **1,365.7183** | **0.4417** | | **1,376.7609** |

## 3.4 Grading - 2020

**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 | 0.2510 | 8.8102 | 1.8269 | 0.0221 | 0.7805 | 0.0246 | 0.8051 | 0.2047 | 0.0235 | 0.2282 | | 2,392.0419 | 2,392.0419 | 0.1744 | | 2,396.4014 |
| 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 |
| Worker | 0.0368 | 0.0262 | 0.3503 | 9.4000e-004 | 0.0894 | 7.5000e-004 | 0.0902 | 0.0237 | 6.9000e-004 | 0.0244 | | 94.0890 | 94.0890 | 2.9700e-003 | | 94.1632 |
| **Total** | **0.2879** | **8.8364** | **2.1772** | **0.0230** | **0.8699** | **0.0253** | **0.8952** | **0.2284** | **0.0242** | **0.2526** | | **2,486.1309** | **2,486.1309** | **0.1774** | | **2,490.5646** |

## 3.5 Building Construction - 2020

**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 | | | | | |
| Off-Road | 2.0305 | 14.7882 | 13.1881 | 0.0220 | | 0.7960 | 0.7960 | | 0.7688 | 0.7688 | | 2,001.1595 | 2,001.1595 | 0.3715 | | 2,010.4467 |
| **Total** | **2.0305** | **14.7882** | **13.1881** | **0.0220** | | **0.7960** | **0.7960** | | **0.7688** | **0.7688** | | **2,001.1595** | **2,001.1595** | **0.3715** | | **2,010.4467** |

## 3.5 Building Construction - 2020

### 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 |
| Vendor | 0.2881 | 8.6162 | 2.2575 | 0.0210 | 0.5186 | 0.0406 | 0.5591 | 0.1493 | 0.0388 | 0.1881 | | 2,243.9000 | 2,243.9000 | 0.1369 | | 2,247.3233 |
| Worker | 1.3576 | 0.9658 | 12.9164 | 0.0348 | 3.2974 | 0.0276 | 3.3250 | 0.8745 | 0.0254 | 0.8999 | | 3,469.5330 | 3,469.5330 | 0.1094 | | 3,472.2676 |
| **Total** | **1.6457** | **9.5820** | **15.1739** | **0.0559** | **3.8160** | **0.0681** | **3.8841** | **1.0238** | **0.0642** | **1.0880** | | **5,713.4330** | **5,713.4330** | **0.2463** | | **5,719.5909** |

### 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 | | | | | |
| Off-Road | 2.0305 | 14.7882 | 13.1881 | 0.0220 | | 0.7960 | 0.7960 | | 0.7688 | 0.7688 | 0.0000 | 2,001.1595 | 2,001.1595 | 0.3715 | | 2,010.4467 |
| **Total** | **2.0305** | **14.7882** | **13.1881** | **0.0220** | | **0.7960** | **0.7960** | | **0.7688** | **0.7688** | **0.0000** | **2,001.1595** | **2,001.1595** | **0.3715** | | **2,010.4467** |

## 3.5 Building Construction - 2020

**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 |
| Vendor | 0.2881 | 8.6162 | 2.2575 | 0.0210 | 0.5186 | 0.0406 | 0.5591 | 0.1493 | 0.0388 | 0.1881 | | 2,243.9000 | 2,243.9000 | 0.1369 | | 2,247.3233 |
| Worker | 1.3576 | 0.9658 | 12.9164 | 0.0348 | 3.2974 | 0.0276 | 3.3250 | 0.8745 | 0.0254 | 0.8999 | | 3,469.5330 | 3,469.5330 | 0.1094 | | 3,472.2676 |
| **Total** | **1.6457** | **9.5820** | **15.1739** | **0.0559** | **3.8160** | **0.0681** | **3.8841** | **1.0238** | **0.0642** | **1.0880** | | **5,713.4330** | **5,713.4330** | **0.2463** | | **5,719.5909** |

## 3.5 Building Construction - 2021

**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 | | | | | |
| Off-Road | 1.8125 | 13.6361 | 12.8994 | 0.0221 | | 0.6843 | 0.6843 | | 0.6608 | 0.6608 | | 2,001.2200 | 2,001.2200 | 0.3573 | | 2,010.1517 |
| **Total** | **1.8125** | **13.6361** | **12.8994** | **0.0221** | | **0.6843** | **0.6843** | | **0.6608** | **0.6608** | | **2,001.2200** | **2,001.2200** | **0.3573** | | **2,010.1517** |

## 3.5 Building Construction - 2021

### 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 |
| Vendor | 0.2462 | 7.8643 | 2.0559 | 0.0208 | 0.5186 | 0.0161 | 0.5347 | 0.1493 | 0.0154 | 0.1647 | | 2,226.5331 | 2,226.5331 | 0.1312 | | 2,229.8124 |
| Worker | 1.2645 | 0.8692 | 11.8818 | 0.0337 | 3.2974 | 0.0266 | 3.3241 | 0.8745 | 0.0245 | 0.8990 | | 3,359.3711 | 3,359.3711 | 0.0990 | | 3,361.8457 |
| **Total** | **1.5108** | **8.7334** | **13.9378** | **0.0546** | **3.8160** | **0.0427** | **3.8587** | **1.0238** | **0.0399** | **1.0637** | | **5,585.9042** | **5,585.9042** | **0.2302** | | **5,591.6581** |

### 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 | | | | | |
| Off-Road | 1.8125 | 13.6361 | 12.8994 | 0.0221 | | 0.6843 | 0.6843 | | 0.6608 | 0.6608 | 0.0000 | 2,001.2200 | 2,001.2200 | 0.3573 | | 2,010.1517 |
| **Total** | **1.8125** | **13.6361** | **12.8994** | **0.0221** | | **0.6843** | **0.6843** | | **0.6608** | **0.6608** | **0.0000** | **2,001.2200** | **2,001.2200** | **0.3573** | | **2,010.1517** |

## 3.5 Building Construction - 2021

**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 |
| Vendor | 0.2462 | 7.8643 | 2.0559 | 0.0208 | 0.5186 | 0.0161 | 0.5347 | 0.1493 | 0.0154 | 0.1647 | | 2,226.5331 | 2,226.5331 | 0.1312 | | 2,229.8124 |
| Worker | 1.2645 | 0.8692 | 11.8818 | 0.0337 | 3.2974 | 0.0266 | 3.3241 | 0.8745 | 0.0245 | 0.8990 | | 3,359.3711 | 3,359.3711 | 0.0990 | | 3,361.8457 |
| **Total** | **1.5108** | **8.7334** | **13.9378** | **0.0546** | **3.8160** | **0.0427** | **3.8587** | **1.0238** | **0.0399** | **1.0637** | | **5,585.9042** | **5,585.9042** | **0.2302** | | **5,591.6581** |

## 3.6 Paving - 2020

**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 | | | | | |
| Off-Road | 0.8402 | 8.4514 | 8.8758 | 0.0135 | | 0.4695 | 0.4695 | | 0.4328 | 0.4328 | | 1,296.9461 | 1,296.9461 | 0.4111 | | 1,307.2246 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.8402** | **8.4514** | **8.8758** | **0.0135** | | **0.4695** | **0.4695** | | **0.4328** | **0.4328** | | **1,296.9461** | **1,296.9461** | **0.4111** | | **1,307.2246** |

## 3.6 Paving - 2020

### 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 |
| 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 |
| Worker | 0.0598 | 0.0426 | 0.5692 | 1.5400e-003 | 0.1453 | 1.2100e-003 | 0.1465 | 0.0385 | 1.1200e-003 | 0.0397 | | 152.8947 | 152.8947 | 4.8200e-003 | | 153.0152 |
| **Total** | **0.0598** | **0.0426** | **0.5692** | **1.5400e-003** | **0.1453** | **1.2100e-003** | **0.1465** | **0.0385** | **1.1200e-003** | **0.0397** | | **152.8947** | **152.8947** | **4.8200e-003** | | **153.0152** |

### 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 | | | | | |
| Off-Road | 0.8402 | 8.4514 | 8.8758 | 0.0135 | | 0.4695 | 0.4695 | | 0.4328 | 0.4328 | 0.0000 | 1,296.9461 | 1,296.9461 | 0.4111 | | 1,307.2246 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.8402** | **8.4514** | **8.8758** | **0.0135** | | **0.4695** | **0.4695** | | **0.4328** | **0.4328** | **0.0000** | **1,296.9461** | **1,296.9461** | **0.4111** | | **1,307.2246** |

## 3.6 Paving - 2020

**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 |
| 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 |
| Worker | 0.0598 | 0.0426 | 0.5692 | 1.5400e-003 | 0.1453 | 1.2100e-003 | 0.1465 | 0.0385 | 1.1200e-003 | 0.0397 | | 152.8947 | 152.8947 | 4.8200e-003 | | 153.0152 |
| **Total** | **0.0598** | **0.0426** | **0.5692** | **1.5400e-003** | **0.1453** | **1.2100e-003** | **0.1465** | **0.0385** | **1.1200e-003** | **0.0397** | | **152.8947** | **152.8947** | **4.8200e-003** | | **153.0152** |

## 3.7 Architectural Coating - 2021

**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 | 54.8538 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.2189 | 1.5268 | 1.8176 | 2.9700e-003 | | 0.0941 | 0.0941 | | 0.0941 | 0.0941 | | 281.4481 | 281.4481 | 0.0193 | | 281.9309 |
| **Total** | **55.0727** | **1.5268** | **1.8176** | **2.9700e-003** | | **0.0941** | **0.0941** | | **0.0941** | **0.0941** | | **281.4481** | **281.4481** | **0.0193** | | **281.9309** |

## 3.7 Architectural Coating - 2021

### 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 |
| 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 |
| Worker | 0.2529 | 0.1738 | 2.3764 | 6.7400e-003 | 0.6595 | 5.3300e-003 | 0.6648 | 0.1749 | 4.9100e-003 | 0.1798 | | 671.8742 | 671.8742 | 0.0198 | | 672.3691 |
| **Total** | **0.2529** | **0.1738** | **2.3764** | **6.7400e-003** | **0.6595** | **5.3300e-003** | **0.6648** | **0.1749** | **4.9100e-003** | **0.1798** | | **671.8742** | **671.8742** | **0.0198** | | **672.3691** |

### 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 | 54.8538 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.2189 | 1.5268 | 1.8176 | 2.9700e-003 | | 0.0941 | 0.0941 | | 0.0941 | 0.0941 | 0.0000 | 281.4481 | 281.4481 | 0.0193 | | 281.9309 |
| **Total** | **55.0727** | **1.5268** | **1.8176** | **2.9700e-003** | | **0.0941** | **0.0941** | | **0.0941** | **0.0941** | **0.0000** | **281.4481** | **281.4481** | **0.0193** | | **281.9309** |

### 3.7 Architectural Coating - 2021

**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 |
| 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 |
| Worker | 0.2529 | 0.1738 | 2.3764 | 6.7400e-003 | 0.6595 | 5.3300e-003 | 0.6648 | 0.1749 | 4.9100e-003 | 0.1798 | | 671.8742 | 671.8742 | 0.0198 | | 672.3691 |
| **Total** | **0.2529** | **0.1738** | **2.3764** | **6.7400e-003** | **0.6595** | **5.3300e-003** | **0.6648** | **0.1749** | **4.9100e-003** | **0.1798** | | **671.8742** | **671.8742** | **0.0198** | | **672.3691** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |

## 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 | | |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | | |
| Other Non-Asphalt Surfaces | 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 | 0.00 | 0.00 | 0.00 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| Enclosed Parking with Elevator | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Other Non-Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| Enclosed Parking with Elevator | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| Other Non-Asphalt Surfaces | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |

## 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 | 0.0539 | 0.4608 | 0.1961 | 2.9400e-003 | | 0.0373 | 0.0373 | | 0.0373 | 0.0373 | | 588.2205 | 588.2205 | 0.0113 | 0.0108 | 591.7160 |
| NaturalGas Unmitigated | 0.0539 | 0.4608 | 0.1961 | 2.9400e-003 | | 0.0373 | 0.0373 | | 0.0373 | 0.0373 | | 588.2205 | 588.2205 | 0.0113 | 0.0108 | 591.7160 |

## 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 | 4999.87 | 0.0539 | 0.4608 | 0.1961 | 2.9400e-003 | | 0.0373 | 0.0373 | | 0.0373 | 0.0373 | | 588.2205 | 588.2205 | 0.0113 | 0.0108 | 591.7160 |
| Enclosed Parking with Elevator | 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 |
| Other Non-Asphalt Surfaces | 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 |
| **Total** | | **0.0539** | **0.4608** | **0.1961** | **2.9400e-003** | | **0.0373** | **0.0373** | | **0.0373** | **0.0373** | | **588.2205** | **588.2205** | **0.0113** | **0.0108** | **591.7160** |

**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 | 4.99987 | 0.0539 | 0.4608 | 0.1961 | 2.9400e-003 | | 0.0373 | 0.0373 | | 0.0373 | 0.0373 | | 588.2205 | 588.2205 | 0.0113 | 0.0108 | 591.7160 |
| Enclosed Parking with Elevator | 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 |
| Other Non-Asphalt Surfaces | 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 |
| **Total** | | **0.0539** | **0.4608** | **0.1961** | **2.9400e-003** | | **0.0373** | **0.0373** | | **0.0373** | **0.0373** | | **588.2205** | **588.2205** | **0.0113** | **0.0108** | **591.7160** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 56.2599 | 4.2971 | 117.0781 | 0.2577 | | 15.2154 | 15.2154 | | 15.2154 | 15.2154 | 1,854.6498 | 3,593.4819 | 5,448.1318 | 5.5595 | 0.1259 | 5,624.6312 |
| Unmitigated | 56.2599 | 4.2971 | 117.0781 | 0.2577 | | 15.2154 | 15.2154 | | 15.2154 | 15.2154 | 1,854.6498 | 3,593.4819 | 5,448.1318 | 5.5595 | 0.1259 | 5,624.6312 |

## 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 | 0.3306 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 3.5492 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 51.8831 | 4.1082 | 100.6933 | 0.2569 | | 15.1249 | 15.1249 | | 15.1249 | 15.1249 | 1,854.6498 | 3,564.0000 | 5,418.6498 | 5.5309 | 0.1259 | 5,594.4353 |
| Landscaping | 0.4969 | 0.1889 | 16.3849 | 8.6000e-004 | | 0.0905 | 0.0905 | | 0.0905 | 0.0905 | | 29.4819 | 29.4819 | 0.0286 | | 30.1958 |
| **Total** | **56.2599** | **4.2971** | **117.0781** | **0.2577** | | **15.2154** | **15.2154** | | **15.2154** | **15.2154** | **1,854.6498** | **3,593.4819** | **5,448.1318** | **5.5595** | **0.1259** | **5,624.6312** |

### 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 | 0.3306 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 3.5492 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 51.8831 | 4.1082 | 100.6933 | 0.2569 | | 15.1249 | 15.1249 | | 15.1249 | 15.1249 | 1,854.6498 | 3,564.0000 | 5,418.6498 | 5.5309 | 0.1259 | 5,594.4353 |
| Landscaping | 0.4969 | 0.1889 | 16.3849 | 8.6000e-004 | | 0.0905 | 0.0905 | | 0.0905 | 0.0905 | | 29.4819 | 29.4819 | 0.0286 | | 30.1958 |
| **Total** | **56.2599** | **4.2971** | **117.0781** | **0.2577** | | **15.2154** | **15.2154** | | **15.2154** | **15.2154** | **1,854.6498** | **3,593.4819** | **5,448.1318** | **5.5595** | **0.1259** | **5,624.6312** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 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

# GUSD Apartment Site Construction

**Los Angeles-South Coast County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Enclosed Parking with Elevator | 244.00 | Space | 2.20 | 97,600.00 | 0 |
| Other Non-Asphalt Surfaces | 69.17 | 1000sqft | 0.00 | 41,288.00 | 0 |
| Apartments Mid Rise | 198.00 | Dwelling Unit | 1.40 | 176,769.00 | 566 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 33 |
| **Climate Zone** | 11 | | | **Operational Year** | 2022 |
| **Utility Company** | Glendale Water & Power | | | | |
| **CO2 Intensity (lb/MWhr)** | 1115.33 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

GUSD Apartment Site Construction - Los Angeles-South Coast County, Winter

Project Characteristics -

Land Use - per the SCEA's CalEEMod modeling

Construction Phase - per the SCEA construction schedule

Grading - grading export and total acreage per the SCEA's CalEEMod modeling

Demolition -

Trips and VMT - hauling trip length per the SCEA

Vehicle Trips - construction only

Construction Off-road Equipment Mitigation -

Area Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstructionPhase | NumDays | 10.00 | 22.00 |
| tblConstructionPhase | NumDays | 200.00 | 463.00 |
| tblConstructionPhase | NumDays | 4.00 | 60.00 |
| tblConstructionPhase | NumDays | 10.00 | 44.00 |
| tblConstructionPhase | PhaseEndDate | 9/29/2020 | 11/22/2021 |
| tblConstructionPhase | PhaseEndDate | 9/1/2020 | 11/22/2021 |
| tblConstructionPhase | PhaseEndDate | 11/26/2019 | 2/12/2020 |
| tblConstructionPhase | PhaseEndDate | 9/15/2020 | 11/22/2020 |
| tblConstructionPhase | PhaseStartDate | 9/16/2020 | 10/22/2021 |
| tblConstructionPhase | PhaseStartDate | 11/27/2019 | 2/13/2020 |
| tblConstructionPhase | PhaseStartDate | 9/2/2020 | 9/22/2020 |
| tblGrading | AcresOfGrading | 22.50 | 1.80 |
| tblGrading | MaterialExported | 0.00 | 19,004.00 |
| tblLandUse | LandUseSquareFeet | 69,170.00 | 41,288.00 |

| | | | |
|---|---|---|---|
| tblLandUse | LandUseSquareFeet | 198,000.00 | 176,769.00 |
| tblLandUse | LotAcreage | 1.59 | 0.00 |
| tblLandUse | LotAcreage | 5.21 | 1.40 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 13.20 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 13.20 |
| tblVehicleTrips | HO_TL | 8.70 | 0.00 |
| tblVehicleTrips | HS_TL | 5.90 | 0.00 |
| tblVehicleTrips | HW_TL | 14.70 | 0.00 |
| tblVehicleTrips | ST_TR | 6.39 | 0.00 |
| tblVehicleTrips | SU_TR | 5.86 | 0.00 |
| tblVehicleTrips | WD_TR | 6.65 | 0.00 |

## 2.0 Emissions Summary

## 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 | | | | | |
| 2019 | 2.4191 | 25.4674 | 15.8518 | 0.0368 | 5.8890 | 1.2933 | 6.7721 | 2.9774 | 1.2084 | 3.7899 | 0.0000 | 3,844.1868 | 3,844.1868 | 0.6412 | 0.0000 | 3,860.0253 |
| 2020 | 4.7458 | 32.9704 | 36.9049 | 0.0903 | 5.4541 | 1.3354 | 6.1644 | 2.7200 | 1.2676 | 3.3743 | 0.0000 | 8,891.4978 | 8,891.4978 | 1.0361 | 0.0000 | 8,917.3998 |
| 2021 | 58.8316 | 24.1655 | 30.0274 | 0.0834 | 4.4755 | 0.8270 | 5.3025 | 1.1987 | 0.8002 | 1.9989 | 0.0000 | 8,243.9357 | 8,243.9357 | 0.6281 | 0.0000 | 8,259.6375 |
| **Maximum** | **58.8316** | **32.9704** | **36.9049** | **0.0903** | **5.8890** | **1.3354** | **6.7721** | **2.9774** | **1.2676** | **3.7899** | **0.0000** | **8,891.4978** | **8,891.4978** | **1.0361** | **0.0000** | **8,917.3998** |

### 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 | | | | | |
| 2019 | 2.4191 | 25.4674 | 15.8518 | 0.0368 | 5.8890 | 1.2933 | 6.7721 | 2.9774 | 1.2084 | 3.7899 | 0.0000 | 3,844.1868 | 3,844.1868 | 0.6412 | 0.0000 | 3,860.0253 |
| 2020 | 4.7458 | 32.9704 | 36.9049 | 0.0903 | 5.4541 | 1.3354 | 6.1644 | 2.7200 | 1.2676 | 3.3743 | 0.0000 | 8,891.4978 | 8,891.4978 | 1.0361 | 0.0000 | 8,917.3998 |
| 2021 | 58.8316 | 24.1655 | 30.0274 | 0.0834 | 4.4755 | 0.8270 | 5.3025 | 1.1987 | 0.8002 | 1.9989 | 0.0000 | 8,243.9357 | 8,243.9357 | 0.6281 | 0.0000 | 8,259.6375 |
| **Maximum** | **58.8316** | **32.9704** | **36.9049** | **0.0903** | **5.8890** | **1.3354** | **6.7721** | **2.9774** | **1.2676** | **3.7899** | **0.0000** | **8,891.4978** | **8,891.4978** | **1.0361** | **0.0000** | **8,917.3998** |

GUSD Apartment Site Construction - Los Angeles-South Coast County, Winter

| | ROG | NOx | 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 |

## 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 | 56.2599 | 4.2971 | 117.0781 | 0.2577 | | 15.2154 | 15.2154 | | 15.2154 | 15.2154 | 1,854.6498 | 3,593.4819 | 5,448.1318 | 5.5595 | 0.1259 | 5,624.6312 |
| Energy | 0.0539 | 0.4608 | 0.1961 | 2.9400e-003 | | 0.0373 | 0.0373 | | 0.0373 | 0.0373 | | 588.2205 | 588.2205 | 0.0113 | 0.0108 | 591.7160 |
| 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 |
| **Total** | **56.3138** | **4.7578** | **117.2742** | **0.2607** | **0.0000** | **15.2526** | **15.2526** | **0.0000** | **15.2526** | **15.2526** | **1,854.6498** | **4,181.7024** | **6,036.3523** | **5.5708** | **0.1367** | **6,216.3472** |

### 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 | 56.2599 | 4.2971 | 117.0781 | 0.2577 | | 15.2154 | 15.2154 | | 15.2154 | 15.2154 | 1,854.6498 | 3,593.4819 | 5,448.1318 | 5.5595 | 0.1259 | 5,624.6312 |
| Energy | 0.0539 | 0.4608 | 0.1961 | 2.9400e-003 | | 0.0373 | 0.0373 | | 0.0373 | 0.0373 | | 588.2205 | 588.2205 | 0.0113 | 0.0108 | 591.7160 |
| 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 |
| **Total** | **56.3138** | **4.7578** | **117.2742** | **0.2607** | **0.0000** | **15.2526** | **15.2526** | **0.0000** | **15.2526** | **15.2526** | **1,854.6498** | **4,181.7024** | **6,036.3523** | **5.5708** | **0.1367** | **6,216.3472** |

| | ROG | NOx | 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 | 10/22/2019 | 11/18/2019 | 5 | 20 | |
| 2 | Site Preparation | Site Preparation | 11/19/2019 | 11/20/2019 | 5 | 2 | |
| 3 | Grading | Grading | 11/21/2019 | 2/12/2020 | 5 | 60 | |
| 4 | Building Construction | Building Construction | 2/13/2020 | 11/22/2021 | 5 | 463 | |
| 5 | Paving | Paving | 9/22/2020 | 11/22/2020 | 5 | 44 | |
| 6 | Architectural Coating | Architectural Coating | 10/22/2021 | 11/22/2021 | 5 | 22 | |

**Acres of Grading (Site Preparation Phase): 1**

**Acres of Grading (Grading Phase): 1.8**

**Acres of Paving: 2.2**

**Residential Indoor: 357,957; Residential Outdoor: 119,319; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 21,725 (Architectural Coating – sqft)**

**OffRoad Equipment**

GUSD Apartment Site Construction - Los Angeles-South Coast County, Winter

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Paving | Cement and Mortar Mixers | 1 | 6.00 | 9 | 0.56 |
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Cranes | 1 | 6.00 | 231 | 0.29 |
| Building Construction | Forklifts | 1 | 6.00 | 89 | 0.20 |
| Site Preparation | Graders | 1 | 8.00 | 187 | 0.41 |
| Paving | Pavers | 1 | 6.00 | 130 | 0.42 |
| Paving | Rollers | 1 | 7.00 | 80 | 0.38 |
| Demolition | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Rubber Tired Dozers | 1 | 6.00 | 247 | 0.40 |
| Building Construction | Tractors/Loaders/Backhoes | 1 | 6.00 | 97 | 0.37 |
| Demolition | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |
| Grading | Tractors/Loaders/Backhoes | 1 | 7.00 | 97 | 0.37 |
| Paving | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Site Preparation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Grading | Graders | 1 | 6.00 | 187 | 0.41 |
| Paving | Paving Equipment | 1 | 8.00 | 132 | 0.36 |
| Site Preparation | Rubber Tired Dozers | 1 | 7.00 | 247 | 0.40 |
| Building Construction | Welders | 3 | 8.00 | 46 | 0.45 |

**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 | 5 | 13.00 | 0.00 | 147.00 | 14.70 | 6.90 | 13.20 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 3 | 8.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 3 | 8.00 | 0.00 | 2,376.00 | 14.70 | 6.90 | 13.20 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 7 | 295.00 | 81.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 5 | 13.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 59.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

## 3.2 Demolition - 2019

**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 | | | | | 1.5864 | 0.0000 | 1.5864 | 0.2402 | 0.0000 | 0.2402 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.2950 | 22.6751 | 14.8943 | 0.0241 | | 1.2863 | 1.2863 | | 1.2017 | 1.2017 | | 2,360.7198 | 2,360.7198 | 0.6011 | | 2,375.7475 |
| **Total** | **2.2950** | **22.6751** | **14.8943** | **0.0241** | **1.5864** | **1.2863** | **2.8727** | **0.2402** | **1.2017** | **1.4419** | | **2,360.7198** | **2,360.7198** | **0.6011** | | **2,375.7475** |

## 3.2 Demolition - 2019

### 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 | 0.0521 | 1.7445 | 0.3823 | 4.0400e-003 | 0.0849 | 5.7700e-003 | 0.0906 | 0.0233 | 5.5200e-003 | 0.0288 | | 437.3669 | 437.3669 | 0.0350 | | 438.2420 |
| 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 |
| Worker | 0.0720 | 0.0529 | 0.5752 | 1.4900e-003 | 0.1453 | 1.2500e-003 | 0.1466 | 0.0385 | 1.1500e-003 | 0.0397 | | 148.4770 | 148.4770 | 5.1100e-003 | | 148.6047 |
| **Total** | **0.1240** | **1.7974** | **0.9575** | **5.5300e-003** | **0.2302** | **7.0200e-003** | **0.2372** | **0.0618** | **6.6700e-003** | **0.0685** | | **585.8439** | **585.8439** | **0.0401** | | **586.8467** |

### 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 | | | | | 1.5864 | 0.0000 | 1.5864 | 0.2402 | 0.0000 | 0.2402 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.2950 | 22.6751 | 14.8943 | 0.0241 | | 1.2863 | 1.2863 | | 1.2017 | 1.2017 | 0.0000 | 2,360.7197 | 2,360.7197 | 0.6011 | | 2,375.7475 |
| **Total** | **2.2950** | **22.6751** | **14.8943** | **0.0241** | **1.5864** | **1.2863** | **2.8727** | **0.2402** | **1.2017** | **1.4419** | **0.0000** | **2,360.7197** | **2,360.7197** | **0.6011** | | **2,375.7475** |

## 3.2 Demolition - 2019

**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 | 0.0521 | 1.7445 | 0.3823 | 4.0400e-003 | 0.0849 | 5.7700e-003 | 0.0906 | 0.0233 | 5.5200e-003 | 0.0288 | | 437.3669 | 437.3669 | 0.0350 | | 438.2420 |
| 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 |
| Worker | 0.0720 | 0.0529 | 0.5752 | 1.4900e-003 | 0.1453 | 1.2500e-003 | 0.1466 | 0.0385 | 1.1500e-003 | 0.0397 | | 148.4770 | 148.4770 | 5.1100e-003 | | 148.6047 |
| **Total** | **0.1240** | **1.7974** | **0.9575** | **5.5300e-003** | **0.2302** | **7.0200e-003** | **0.2372** | **0.0618** | **6.6700e-003** | **0.0685** | | **585.8439** | **585.8439** | **0.0401** | | **586.8467** |

## 3.3 Site Preparation - 2019

**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 | | | | | 5.7996 | 0.0000 | 5.7996 | 2.9537 | 0.0000 | 2.9537 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.7123 | 19.4821 | 7.8893 | 0.0172 | | 0.8824 | 0.8824 | | 0.8118 | 0.8118 | | 1,704.9189 | 1,704.9189 | 0.5394 | | 1,718.4044 |
| **Total** | **1.7123** | **19.4821** | **7.8893** | **0.0172** | **5.7996** | **0.8824** | **6.6819** | **2.9537** | **0.8118** | **3.7655** | | **1,704.9189** | **1,704.9189** | **0.5394** | | **1,718.4044** |

## 3.3 Site Preparation - 2019

### 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 |
| 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 |
| Worker | 0.0443 | 0.0325 | 0.3540 | 9.2000e-004 | 0.0894 | 7.7000e-004 | 0.0902 | 0.0237 | 7.1000e-004 | 0.0244 | | 91.3705 | 91.3705 | 3.1400e-003 | | 91.4491 |
| **Total** | **0.0443** | **0.0325** | **0.3540** | **9.2000e-004** | **0.0894** | **7.7000e-004** | **0.0902** | **0.0237** | **7.1000e-004** | **0.0244** | | **91.3705** | **91.3705** | **3.1400e-003** | | **91.4491** |

### 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 | | | | | 5.7996 | 0.0000 | 5.7996 | 2.9537 | 0.0000 | 2.9537 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.7123 | 19.4821 | 7.8893 | 0.0172 | | 0.8824 | 0.8824 | | 0.8118 | 0.8118 | 0.0000 | 1,704.9189 | 1,704.9189 | 0.5394 | | 1,718.4044 |
| **Total** | **1.7123** | **19.4821** | **7.8893** | **0.0172** | **5.7996** | **0.8824** | **6.6819** | **2.9537** | **0.8118** | **3.7655** | **0.0000** | **1,704.9189** | **1,704.9189** | **0.5394** | | **1,718.4044** |

## 3.3 Site Preparation - 2019

**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 |
| 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 |
| Worker | 0.0443 | 0.0325 | 0.3540 | 9.2000e-004 | 0.0894 | 7.7000e-004 | 0.0902 | 0.0237 | 7.1000e-004 | 0.0244 | | 91.3705 | 91.3705 | 3.1400e-003 | | 91.4491 |
| **Total** | **0.0443** | **0.0325** | **0.3540** | **9.2000e-004** | **0.0894** | **7.7000e-004** | **0.0902** | **0.0237** | **7.1000e-004** | **0.0244** | | **91.3705** | **91.3705** | **3.1400e-003** | | **91.4491** |

## 3.4 Grading - 2019

**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 | | | | | 4.5842 | 0.0000 | 4.5842 | 2.4915 | 0.0000 | 2.4915 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.4197 | 16.0357 | 6.6065 | 0.0141 | | 0.7365 | 0.7365 | | 0.6775 | 0.6775 | | 1,396.3909 | 1,396.3909 | 0.4418 | | 1,407.4359 |
| **Total** | **1.4197** | **16.0357** | **6.6065** | **0.0141** | **4.5842** | **0.7365** | **5.3207** | **2.4915** | **0.6775** | **3.1691** | | **1,396.3909** | **1,396.3909** | **0.4418** | | **1,407.4359** |

## 3.4 Grading - 2019

### 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 | 0.2804 | 9.3992 | 2.0595 | 0.0218 | 0.8266 | 0.0311 | 0.8577 | 0.2160 | 0.0297 | 0.2458 | | 2,356.4255 | 2,356.4255 | 0.1886 | | 2,361.1403 |
| 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 |
| Worker | 0.0443 | 0.0325 | 0.3540 | 9.2000e-004 | 0.0894 | 7.7000e-004 | 0.0902 | 0.0237 | 7.1000e-004 | 0.0244 | | 91.3705 | 91.3705 | 3.1400e-003 | | 91.4491 |
| **Total** | **0.3247** | **9.4317** | **2.4135** | **0.0227** | **0.9160** | **0.0318** | **0.9479** | **0.2397** | **0.0304** | **0.2702** | | **2,447.7960** | **2,447.7960** | **0.1917** | | **2,452.5893** |

### 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 | | | | | 4.5842 | 0.0000 | 4.5842 | 2.4915 | 0.0000 | 2.4915 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.4197 | 16.0357 | 6.6065 | 0.0141 | | 0.7365 | 0.7365 | | 0.6775 | 0.6775 | 0.0000 | 1,396.3909 | 1,396.3909 | 0.4418 | | 1,407.4359 |
| **Total** | **1.4197** | **16.0357** | **6.6065** | **0.0141** | **4.5842** | **0.7365** | **5.3207** | **2.4915** | **0.6775** | **3.1691** | **0.0000** | **1,396.3909** | **1,396.3909** | **0.4418** | | **1,407.4359** |

## 3.4 Grading - 2019

**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 | 0.2804 | 9.3992 | 2.0595 | 0.0218 | 0.8266 | 0.0311 | 0.8577 | 0.2160 | 0.0297 | 0.2458 | | 2,356.4255 | 2,356.4255 | 0.1886 | | 2,361.1403 |
| 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 |
| Worker | 0.0443 | 0.0325 | 0.3540 | 9.2000e-004 | 0.0894 | 7.7000e-004 | 0.0902 | 0.0237 | 7.1000e-004 | 0.0244 | | 91.3705 | 91.3705 | 3.1400e-003 | | 91.4491 |
| **Total** | **0.3247** | **9.4317** | **2.4135** | **0.0227** | **0.9160** | **0.0318** | **0.9479** | **0.2397** | **0.0304** | **0.2702** | | **2,447.7960** | **2,447.7960** | **0.1917** | | **2,452.5893** |

## 3.4 Grading - 2020

**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 | | | | | 4.5842 | 0.0000 | 4.5842 | 2.4915 | 0.0000 | 2.4915 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.3498 | 15.0854 | 6.4543 | 0.0141 | | 0.6844 | 0.6844 | | 0.6296 | 0.6296 | | 1,365.7183 | 1,365.7183 | 0.4417 | | 1,376.7609 |
| **Total** | **1.3498** | **15.0854** | **6.4543** | **0.0141** | **4.5842** | **0.6844** | **5.2686** | **2.4915** | **0.6296** | **3.1212** | | **1,365.7183** | **1,365.7183** | **0.4417** | | **1,376.7609** |

## 3.4 Grading - 2020

### 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 | 0.2595 | 8.8569 | 1.9902 | 0.0215 | 0.7805 | 0.0251 | 0.8056 | 0.2047 | 0.0240 | 0.2287 | | 2,333.6804 | 2,333.6804 | 0.1828 | | 2,338.2503 |
| 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 |
| Worker | 0.0409 | 0.0290 | 0.3208 | 8.9000e-004 | 0.0894 | 7.5000e-004 | 0.0902 | 0.0237 | 6.9000e-004 | 0.0244 | | 88.5936 | 88.5936 | 2.7900e-003 | | 88.6634 |
| **Total** | **0.3004** | **8.8859** | **2.3111** | **0.0224** | **0.8699** | **0.0259** | **0.8958** | **0.2284** | **0.0247** | **0.2531** | | **2,422.2740** | **2,422.2740** | **0.1856** | | **2,426.9138** |

### 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 | | | | | 4.5842 | 0.0000 | 4.5842 | 2.4915 | 0.0000 | 2.4915 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.3498 | 15.0854 | 6.4543 | 0.0141 | | 0.6844 | 0.6844 | | 0.6296 | 0.6296 | 0.0000 | 1,365.7183 | 1,365.7183 | 0.4417 | | 1,376.7609 |
| **Total** | **1.3498** | **15.0854** | **6.4543** | **0.0141** | **4.5842** | **0.6844** | **5.2686** | **2.4915** | **0.6296** | **3.1212** | **0.0000** | **1,365.7183** | **1,365.7183** | **0.4417** | | **1,376.7609** |

## 3.4 Grading - 2020

**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 | 0.2595 | 8.8569 | 1.9902 | 0.0215 | 0.7805 | 0.0251 | 0.8056 | 0.2047 | 0.0240 | 0.2287 | | 2,333.6804 | 2,333.6804 | 0.1828 | | 2,338.2503 |
| 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 |
| Worker | 0.0409 | 0.0290 | 0.3208 | 8.9000e-004 | 0.0894 | 7.5000e-004 | 0.0902 | 0.0237 | 6.9000e-004 | 0.0244 | | 88.5936 | 88.5936 | 2.7900e-003 | | 88.6634 |
| **Total** | **0.3004** | **8.8859** | **2.3111** | **0.0224** | **0.8699** | **0.0259** | **0.8958** | **0.2284** | **0.0247** | **0.2531** | | **2,422.2740** | **2,422.2740** | **0.1856** | | **2,426.9138** |

## 3.5 Building Construction - 2020

**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 | | | | | |
| Off-Road | 2.0305 | 14.7882 | 13.1881 | 0.0220 | | 0.7960 | 0.7960 | | 0.7688 | 0.7688 | | 2,001.1595 | 2,001.1595 | 0.3715 | | 2,010.4467 |
| **Total** | **2.0305** | **14.7882** | **13.1881** | **0.0220** | | **0.7960** | **0.7960** | | **0.7688** | **0.7688** | | **2,001.1595** | **2,001.1595** | **0.3715** | | **2,010.4467** |

## 3.5 Building Construction - 2020

### 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 |
| Vendor | 0.3012 | 8.6144 | 2.4898 | 0.0205 | 0.5186 | 0.0412 | 0.5598 | 0.1493 | 0.0394 | 0.1887 | | 2,182.5374 | 2,182.5374 | 0.1459 | | 2,186.1860 |
| Worker | 1.5075 | 1.0693 | 11.8298 | 0.0328 | 3.2974 | 0.0276 | 3.3250 | 0.8745 | 0.0254 | 0.8999 | | 3,266.8901 | 3,266.8901 | 0.1030 | | 3,269.4644 |
| **Total** | **1.8087** | **9.6837** | **14.3196** | **0.0533** | **3.8160** | **0.0688** | **3.8847** | **1.0238** | **0.0648** | **1.0886** | | **5,449.4276** | **5,449.4276** | **0.2489** | | **5,455.6504** |

### 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 | | | | | |
| Off-Road | 2.0305 | 14.7882 | 13.1881 | 0.0220 | | 0.7960 | 0.7960 | | 0.7688 | 0.7688 | 0.0000 | 2,001.1595 | 2,001.1595 | 0.3715 | | 2,010.4467 |
| **Total** | **2.0305** | **14.7882** | **13.1881** | **0.0220** | | **0.7960** | **0.7960** | | **0.7688** | **0.7688** | **0.0000** | **2,001.1595** | **2,001.1595** | **0.3715** | | **2,010.4467** |

## 3.5 Building Construction - 2020

**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 |
| Vendor | 0.3012 | 8.6144 | 2.4898 | 0.0205 | 0.5186 | 0.0412 | 0.5598 | 0.1493 | 0.0394 | 0.1887 | | 2,182.5374 | 2,182.5374 | 0.1459 | | 2,186.1860 |
| Worker | 1.5075 | 1.0693 | 11.8298 | 0.0328 | 3.2974 | 0.0276 | 3.3250 | 0.8745 | 0.0254 | 0.8999 | | 3,266.8901 | 3,266.8901 | 0.1030 | | 3,269.4644 |
| **Total** | **1.8087** | **9.6837** | **14.3196** | **0.0533** | **3.8160** | **0.0688** | **3.8847** | **1.0238** | **0.0648** | **1.0886** | | **5,449.4276** | **5,449.4276** | **0.2489** | | **5,455.6504** |

## 3.5 Building Construction - 2021

**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 | | | | | |
| Off-Road | 1.8125 | 13.6361 | 12.8994 | 0.0221 | | 0.6843 | 0.6843 | | 0.6608 | 0.6608 | | 2,001.2200 | 2,001.2200 | 0.3573 | | 2,010.1517 |
| **Total** | **1.8125** | **13.6361** | **12.8994** | **0.0221** | | **0.6843** | **0.6843** | | **0.6608** | **0.6608** | | **2,001.2200** | **2,001.2200** | **0.3573** | | **2,010.1517** |

## 3.5 Building Construction - 2021

### 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 |
| Vendor | 0.2585 | 7.8480 | 2.2742 | 0.0203 | 0.5186 | 0.0166 | 0.5352 | 0.1493 | 0.0159 | 0.1652 | | 2,165.4988 | 2,165.4988 | 0.1398 | | 2,168.9937 |
| Worker | 1.4066 | 0.9621 | 10.8635 | 0.0318 | 3.2974 | 0.0266 | 3.3241 | 0.8745 | 0.0245 | 0.8990 | | 3,163.1407 | 3,163.1407 | 0.0931 | | 3,165.4677 |
| **Total** | **1.6651** | **8.8101** | **13.1378** | **0.0520** | **3.8160** | **0.0432** | **3.8592** | **1.0238** | **0.0404** | **1.0642** | | **5,328.6395** | **5,328.6395** | **0.2329** | | **5,334.4614** |

### 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 | | | | | |
| Off-Road | 1.8125 | 13.6361 | 12.8994 | 0.0221 | | 0.6843 | 0.6843 | | 0.6608 | 0.6608 | 0.0000 | 2,001.2200 | 2,001.2200 | 0.3573 | | 2,010.1517 |
| **Total** | **1.8125** | **13.6361** | **12.8994** | **0.0221** | | **0.6843** | **0.6843** | | **0.6608** | **0.6608** | **0.0000** | **2,001.2200** | **2,001.2200** | **0.3573** | | **2,010.1517** |

## 3.5 Building Construction - 2021

**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 |
| Vendor | 0.2585 | 7.8480 | 2.2742 | 0.0203 | 0.5186 | 0.0166 | 0.5352 | 0.1493 | 0.0159 | 0.1652 | | 2,165.4988 | 2,165.4988 | 0.1398 | | 2,168.9937 |
| Worker | 1.4066 | 0.9621 | 10.8635 | 0.0318 | 3.2974 | 0.0266 | 3.3241 | 0.8745 | 0.0245 | 0.8990 | | 3,163.1407 | 3,163.1407 | 0.0931 | | 3,165.4677 |
| **Total** | **1.6651** | **8.8101** | **13.1378** | **0.0520** | **3.8160** | **0.0432** | **3.8592** | **1.0238** | **0.0404** | **1.0642** | | **5,328.6395** | **5,328.6395** | **0.2329** | | **5,334.4614** |

## 3.6 Paving - 2020

**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 | | | | | |
| Off-Road | 0.8402 | 8.4514 | 8.8758 | 0.0135 | | 0.4695 | 0.4695 | | 0.4328 | 0.4328 | | 1,296.9461 | 1,296.9461 | 0.4111 | | 1,307.2246 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.8402** | **8.4514** | **8.8758** | **0.0135** | | **0.4695** | **0.4695** | | **0.4328** | **0.4328** | | **1,296.9461** | **1,296.9461** | **0.4111** | | **1,307.2246** |

## 3.6 Paving - 2020

### 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 |
| 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 |
| Worker | 0.0664 | 0.0471 | 0.5213 | 1.4500e-003 | 0.1453 | 1.2100e-003 | 0.1465 | 0.0385 | 1.1200e-003 | 0.0397 | | 143.9647 | 143.9647 | 4.5400e-003 | | 144.0781 |
| **Total** | **0.0664** | **0.0471** | **0.5213** | **1.4500e-003** | **0.1453** | **1.2100e-003** | **0.1465** | **0.0385** | **1.1200e-003** | **0.0397** | | **143.9647** | **143.9647** | **4.5400e-003** | | **144.0781** |

### 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 | | | | | |
| Off-Road | 0.8402 | 8.4514 | 8.8758 | 0.0135 | | 0.4695 | 0.4695 | | 0.4328 | 0.4328 | 0.0000 | 1,296.9461 | 1,296.9461 | 0.4111 | | 1,307.2246 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.8402** | **8.4514** | **8.8758** | **0.0135** | | **0.4695** | **0.4695** | | **0.4328** | **0.4328** | **0.0000** | **1,296.9461** | **1,296.9461** | **0.4111** | | **1,307.2246** |

## 3.6 Paving - 2020

**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 |
| 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 |
| Worker | 0.0664 | 0.0471 | 0.5213 | 1.4500e-003 | 0.1453 | 1.2100e-003 | 0.1465 | 0.0385 | 1.1200e-003 | 0.0397 | | 143.9647 | 143.9647 | 4.5400e-003 | | 144.0781 |
| **Total** | **0.0664** | **0.0471** | **0.5213** | **1.4500e-003** | **0.1453** | **1.2100e-003** | **0.1465** | **0.0385** | **1.1200e-003** | **0.0397** | | **143.9647** | **143.9647** | **4.5400e-003** | | **144.0781** |

## 3.7 Architectural Coating - 2021

**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 | 54.8538 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.2189 | 1.5268 | 1.8176 | 2.9700e-003 | | 0.0941 | 0.0941 | | 0.0941 | 0.0941 | | 281.4481 | 281.4481 | 0.0193 | | 281.9309 |
| **Total** | **55.0727** | **1.5268** | **1.8176** | **2.9700e-003** | | **0.0941** | **0.0941** | | **0.0941** | **0.0941** | | **281.4481** | **281.4481** | **0.0193** | | **281.9309** |

## 3.7 Architectural Coating - 2021

### 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 |
| 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 |
| Worker | 0.2813 | 0.1924 | 2.1727 | 6.3500e-003 | 0.6595 | 5.3300e-003 | 0.6648 | 0.1749 | 4.9100e-003 | 0.1798 | | 632.6281 | 632.6281 | 0.0186 | | 633.0935 |
| **Total** | **0.2813** | **0.1924** | **2.1727** | **6.3500e-003** | **0.6595** | **5.3300e-003** | **0.6648** | **0.1749** | **4.9100e-003** | **0.1798** | | **632.6281** | **632.6281** | **0.0186** | | **633.0935** |

### 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 | 54.8538 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.2189 | 1.5268 | 1.8176 | 2.9700e-003 | | 0.0941 | 0.0941 | | 0.0941 | 0.0941 | 0.0000 | 281.4481 | 281.4481 | 0.0193 | | 281.9309 |
| **Total** | **55.0727** | **1.5268** | **1.8176** | **2.9700e-003** | | **0.0941** | **0.0941** | | **0.0941** | **0.0941** | **0.0000** | **281.4481** | **281.4481** | **0.0193** | | **281.9309** |

### 3.7 Architectural Coating - 2021

**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 |
| 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 |
| Worker | 0.2813 | 0.1924 | 2.1727 | 6.3500e-003 | 0.6595 | 5.3300e-003 | 0.6648 | 0.1749 | 4.9100e-003 | 0.1798 | | 632.6281 | 632.6281 | 0.0186 | | 633.0935 |
| **Total** | **0.2813** | **0.1924** | **2.1727** | **6.3500e-003** | **0.6595** | **5.3300e-003** | **0.6648** | **0.1749** | **4.9100e-003** | **0.1798** | | **632.6281** | **632.6281** | **0.0186** | | **633.0935** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |

## 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 | | |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | | |
| Other Non-Asphalt Surfaces | 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 | 0.00 | 0.00 | 0.00 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| Enclosed Parking with Elevator | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Other Non-Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| Enclosed Parking with Elevator | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| Other Non-Asphalt Surfaces | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |

## 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 | 0.0539 | 0.4608 | 0.1961 | 2.9400e-003 | | 0.0373 | 0.0373 | | 0.0373 | 0.0373 | | 588.2205 | 588.2205 | 0.0113 | 0.0108 | 591.7160 |
| NaturalGas Unmitigated | 0.0539 | 0.4608 | 0.1961 | 2.9400e-003 | | 0.0373 | 0.0373 | | 0.0373 | 0.0373 | | 588.2205 | 588.2205 | 0.0113 | 0.0108 | 591.7160 |

## 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 | 4999.87 | 0.0539 | 0.4608 | 0.1961 | 2.9400e-003 | | 0.0373 | 0.0373 | | 0.0373 | 0.0373 | | 588.2205 | 588.2205 | 0.0113 | 0.0108 | 591.7160 |
| Enclosed Parking with Elevator | 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 |
| Other Non-Asphalt Surfaces | 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 |
| **Total** | | **0.0539** | **0.4608** | **0.1961** | **2.9400e-003** | | **0.0373** | **0.0373** | | **0.0373** | **0.0373** | | **588.2205** | **588.2205** | **0.0113** | **0.0108** | **591.7160** |

**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 | 4.99987 | 0.0539 | 0.4608 | 0.1961 | 2.9400e-003 | | 0.0373 | 0.0373 | | 0.0373 | 0.0373 | | 588.2205 | 588.2205 | 0.0113 | 0.0108 | 591.7160 |
| Enclosed Parking with Elevator | 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 |
| Other Non-Asphalt Surfaces | 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 |
| **Total** | | **0.0539** | **0.4608** | **0.1961** | **2.9400e-003** | | **0.0373** | **0.0373** | | **0.0373** | **0.0373** | | **588.2205** | **588.2205** | **0.0113** | **0.0108** | **591.7160** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 56.2599 | 4.2971 | 117.0781 | 0.2577 | | 15.2154 | 15.2154 | | 15.2154 | 15.2154 | 1,854.6498 | 3,593.4819 | 5,448.1318 | 5.5595 | 0.1259 | 5,624.6312 |
| Unmitigated | 56.2599 | 4.2971 | 117.0781 | 0.2577 | | 15.2154 | 15.2154 | | 15.2154 | 15.2154 | 1,854.6498 | 3,593.4819 | 5,448.1318 | 5.5595 | 0.1259 | 5,624.6312 |

## 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 | 0.3306 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 3.5492 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 51.8831 | 4.1082 | 100.6933 | 0.2569 | | 15.1249 | 15.1249 | | 15.1249 | 15.1249 | 1,854.6498 | 3,564.0000 | 5,418.6498 | 5.5309 | 0.1259 | 5,594.4353 |
| Landscaping | 0.4969 | 0.1889 | 16.3849 | 8.6000e-004 | | 0.0905 | 0.0905 | | 0.0905 | 0.0905 | | 29.4819 | 29.4819 | 0.0286 | | 30.1958 |
| **Total** | **56.2599** | **4.2971** | **117.0781** | **0.2577** | | **15.2154** | **15.2154** | | **15.2154** | **15.2154** | **1,854.6498** | **3,593.4819** | **5,448.1318** | **5.5595** | **0.1259** | **5,624.6312** |

### 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 | 0.3306 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 3.5492 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 51.8831 | 4.1082 | 100.6933 | 0.2569 | | 15.1249 | 15.1249 | | 15.1249 | 15.1249 | 1,854.6498 | 3,564.0000 | 5,418.6498 | 5.5309 | 0.1259 | 5,594.4353 |
| Landscaping | 0.4969 | 0.1889 | 16.3849 | 8.6000e-004 | | 0.0905 | 0.0905 | | 0.0905 | 0.0905 | | 29.4819 | 29.4819 | 0.0286 | | 30.1958 |
| **Total** | **56.2599** | **4.2971** | **117.0781** | **0.2577** | | **15.2154** | **15.2154** | | **15.2154** | **15.2154** | **1,854.6498** | **3,593.4819** | **5,448.1318** | **5.5595** | **0.1259** | **5,624.6312** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 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

# GUSD Apartment Site Operation

**Los Angeles-South Coast County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Enclosed Parking with Elevator | 244.00 | Space | 0.40 | 97,600.00 | 0 |
| Other Non-Asphalt Surfaces | 69.17 | 1000sqft | 0.00 | 41,288.00 | 0 |
| Apartments Mid Rise | 207.00 | Dwelling Unit | 1.99 | 207,000.00 | 592 |
| High School | 227.00 | Student | 0.69 | 30,114.04 | 0 |
| Parking Lot | 8.90 | 1000sqft | 0.20 | 8,900.00 | 0 |
| General Office Building | 14.30 | 1000sqft | 0.33 | 14,300.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 33 |
| **Climate Zone** | 11 | | | **Operational Year** | 2022 |
| **Utility Company** | Glendale Water & Power | | | | |
| **CO2 Intensity (lb/MWhr)** | 1115.33 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

GUSD Apartment Site Operation - Los Angeles-South Coast County, Annual

Project Characteristics -

Land Use - parking lot size estimated from Google Earth; high school size based on 2018 enrollement; Size of office building estimated assuming that the 6 residential units would be approximately 1,000 sf/each

Construction Phase - operation only

Grading - grading export and total acreage per the SCEA's CalEEMod modeling

Demolition -

Trips and VMT - operation only

Vehicle Trips - apartments trip rate based on the TIA

Construction Off-road Equipment Mitigation -

Area Mitigation -

Off-road Equipment - operation only

Woodstoves - per the SCEA's CalEEMod modeling

Water Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstructionPhase | NumDays | 5.00 | 1.00 |
| tblConstructionPhase | PhaseEndDate | 11/25/2019 | 11/19/2019 |
| tblLandUse | LandUseSquareFeet | 69,170.00 | 41,288.00 |
| tblLandUse | LotAcreage | 2.20 | 0.40 |
| tblLandUse | LotAcreage | 1.59 | 0.00 |
| tblLandUse | LotAcreage | 5.45 | 1.99 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 4.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 0.00 | 18.00 |

# 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 | | | | | |
| 2019 | 5.0000e-005 | 4.0000e-005 | 4.1000e-004 | 0.0000 | 1.0000e-004 | 0.0000 | 1.0000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.0948 | 0.0948 | 0.0000 | 0.0000 | 0.0949 |
| **Maximum** | **5.0000e-005** | **4.0000e-005** | **4.1000e-004** | **0.0000** | **1.0000e-004** | **0.0000** | **1.0000e-004** | **3.0000e-005** | **0.0000** | **3.0000e-005** | **0.0000** | **0.0948** | **0.0948** | **0.0000** | **0.0000** | **0.0949** |

### 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 | | | | | |
| 2019 | 5.0000e-005 | 4.0000e-005 | 4.1000e-004 | 0.0000 | 1.0000e-004 | 0.0000 | 1.0000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.0948 | 0.0948 | 0.0000 | 0.0000 | 0.0949 |
| **Maximum** | **5.0000e-005** | **4.0000e-005** | **4.1000e-004** | **0.0000** | **1.0000e-004** | **0.0000** | **1.0000e-004** | **3.0000e-005** | **0.0000** | **3.0000e-005** | **0.0000** | **0.0948** | **0.0948** | **0.0000** | **0.0000** | **0.0949** |

| | ROG | NOx | 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 | 1.7487 | 0.0784 | 3.4601 | 3.4700e-003 | | 0.2095 | 0.2095 | | 0.2095 | 0.2095 | 21.9874 | 45.7531 | 67.7405 | 0.0690 | 1.4900e-003 | 69.9095 |
| Energy | 0.0128 | 0.1106 | 0.0564 | 7.0000e-004 | | 8.8300e-003 | 8.8300e-003 | | 8.8300e-003 | 8.8300e-003 | 0.0000 | 1,016.2658 | 1,016.2658 | 0.0256 | 7.1100e-003 | 1,019.0222 |
| Mobile | 0.5615 | 2.9723 | 7.8565 | 0.0288 | 2.3862 | 0.0241 | 2.4103 | 0.6396 | 0.0224 | 0.6621 | 0.0000 | 2,660.8195 | 2,660.8195 | 0.1363 | 0.0000 | 2,664.2268 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 30.4385 | 0.0000 | 30.4385 | 1.7989 | 0.0000 | 75.4101 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 5.4023 | 183.1699 | 188.5723 | 0.5596 | 0.0141 | 206.7611 |
| **Total** | **2.3230** | **3.1612** | **11.3730** | **0.0330** | **2.3862** | **0.2424** | **2.6286** | **0.6396** | **0.2408** | **0.8804** | **57.8282** | **3,906.0085** | **3,963.8366** | **2.5893** | **0.0227** | **4,035.3297** |

## 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 | 1.7487 | 0.0784 | 3.4601 | 3.4700e-003 | | 0.2095 | 0.2095 | | 0.2095 | 0.2095 | 21.9874 | 45.7531 | 67.7405 | 0.0690 | 1.4900e-003 | 69.9095 |
| Energy | 0.0128 | 0.1106 | 0.0564 | 7.0000e-004 | | 8.8300e-003 | 8.8300e-003 | | 8.8300e-003 | 8.8300e-003 | 0.0000 | 1,016.2658 | 1,016.2658 | 0.0256 | 7.1100e-003 | 1,019.0222 |
| Mobile | 0.5615 | 2.9723 | 7.8565 | 0.0288 | 2.3862 | 0.0241 | 2.4103 | 0.6396 | 0.0224 | 0.6621 | 0.0000 | 2,660.8195 | 2,660.8195 | 0.1363 | 0.0000 | 2,664.2268 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 30.4385 | 0.0000 | 30.4385 | 1.7989 | 0.0000 | 75.4101 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 4.3219 | 156.4046 | 160.7264 | 0.4480 | 0.0113 | 175.2997 |
| **Total** | **2.3230** | **3.1612** | **11.3730** | **0.0330** | **2.3862** | **0.2424** | **2.6286** | **0.6396** | **0.2408** | **0.8804** | **56.7477** | **3,879.2431** | **3,935.9908** | **2.4776** | **0.0199** | **4,003.8683** |

| | ROG | NOx | 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** | **1.87** | **0.69** | **0.70** | **4.31** | **12.21** | **0.78** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 11/19/2019 | 11/19/2019 | 5 | 1 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0.6**

**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 |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 0 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 0 | 8.00 | 97 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 0 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

## 3.2 Site Preparation - 2019

### 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 | 0.0000 | 0.0000 | 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** |

### 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 | 5.0000e-005 | 4.0000e-005 | 4.1000e-004 | 0.0000 | 1.0000e-004 | 0.0000 | 1.0000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.0948 | 0.0948 | 0.0000 | 0.0000 | 0.0949 |
| **Total** | **5.0000e-005** | **4.0000e-005** | **4.1000e-004** | **0.0000** | **1.0000e-004** | **0.0000** | **1.0000e-004** | **3.0000e-005** | **0.0000** | **3.0000e-005** | **0.0000** | **0.0948** | **0.0948** | **0.0000** | **0.0000** | **0.0949** |

### 3.2 Site Preparation - 2019

**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 | 0.0000 | 0.0000 | 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 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 | 5.0000e-005 | 4.0000e-005 | 4.1000e-004 | 0.0000 | 1.0000e-004 | 0.0000 | 1.0000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.0948 | 0.0948 | 0.0000 | 0.0000 | 0.0949 |
| **Total** | **5.0000e-005** | **4.0000e-005** | **4.1000e-004** | **0.0000** | **1.0000e-004** | **0.0000** | **1.0000e-004** | **3.0000e-005** | **0.0000** | **3.0000e-005** | **0.0000** | **0.0948** | **0.0948** | **0.0000** | **0.0000** | **0.0949** |

## 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 | 0.5615 | 2.9723 | 7.8565 | 0.0288 | 2.3862 | 0.0241 | 2.4103 | 0.6396 | 0.0224 | 0.6621 | 0.0000 | 2,660.8195 | 2,660.8195 | 0.1363 | 0.0000 | 2,664.2268 |
| Unmitigated | 0.5615 | 2.9723 | 7.8565 | 0.0288 | 2.3862 | 0.0241 | 2.4103 | 0.6396 | 0.0224 | 0.6621 | 0.0000 | 2,660.8195 | 2,660.8195 | 0.1363 | 0.0000 | 2,664.2268 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Mid Rise | 1,376.55 | 1,322.73 | 1213.02 | 4,597,778 | 4,597,778 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | | |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| General Office Building | 157.73 | 35.18 | 15.02 | 386,041 | 386,041 |
| High School | 388.17 | 138.47 | 56.75 | 1,303,241 | 1,303,241 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 1,922.45 | 1,496.38 | 1,284.79 | 6,287,060 | 6,287,060 |

## 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 | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| Enclosed Parking with Elevator | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Other Non-Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| General Office Building | 16.60 | 8.40 | 6.90 | 33.00 | 48.00 | 19.00 | 77 | 19 | 4 |
| High School | 16.60 | 8.40 | 6.90 | 77.80 | 17.20 | 5.00 | 75 | 19 | 6 |
| Parking Lot | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| Enclosed Parking with Elevator | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| Other Non-Asphalt Surfaces | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| General Office Building | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| High School | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| Parking Lot | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

GUSD Apartment Site Operation - Los Angeles-South Coast County, Annual

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 889.7960 | 889.7960 | 0.0231 | 4.7900e-003 | 891.8008 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 889.7960 | 889.7960 | 0.0231 | 4.7900e-003 | 891.8008 |
| NaturalGas Mitigated | 0.0128 | 0.1106 | 0.0564 | 7.0000e-004 | | 8.8300e-003 | 8.8300e-003 | | 8.8300e-003 | 8.8300e-003 | 0.0000 | 126.4699 | 126.4699 | 2.4200e-003 | 2.3200e-003 | 127.2214 |
| NaturalGas Unmitigated | 0.0128 | 0.1106 | 0.0564 | 7.0000e-004 | | 8.8300e-003 | 8.8300e-003 | | 8.8300e-003 | 8.8300e-003 | 0.0000 | 126.4699 | 126.4699 | 2.4200e-003 | 2.3200e-003 | 127.2214 |

## 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 | 1.90791e+006 | 0.0103 | 0.0879 | 0.0374 | 5.6000e-004 | | 7.1100e-003 | 7.1100e-003 | | 7.1100e-003 | 7.1100e-003 | 0.0000 | 101.8132 | 101.8132 | 1.9500e-003 | 1.8700e-003 | 102.4182 |
| Enclosed Parking with Elevator | 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 |
| General Office Building | 148863 | 8.0000e-004 | 7.3000e-003 | 6.1300e-003 | 4.0000e-005 | | 5.5000e-004 | 5.5000e-004 | | 5.5000e-004 | 5.5000e-004 | 0.0000 | 7.9439 | 7.9439 | 1.5000e-004 | 1.5000e-004 | 7.9911 |
| High School | 313186 | 1.6900e-003 | 0.0154 | 0.0129 | 9.0000e-005 | | 1.1700e-003 | 1.1700e-003 | | 1.1700e-003 | 1.1700e-003 | 0.0000 | 16.7128 | 16.7128 | 3.2000e-004 | 3.1000e-004 | 16.8121 |
| Other Non-Asphalt Surfaces | 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 |
| Parking Lot | 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** | | **0.0128** | **0.1106** | **0.0564** | **6.9000e-004** | | **8.8300e-003** | **8.8300e-003** | | **8.8300e-003** | **8.8300e-003** | **0.0000** | **126.4699** | **126.4699** | **2.4200e-003** | **2.3300e-003** | **127.2214** |

## 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 | 1.90791e+006 | 0.0103 | 0.0879 | 0.0374 | 5.6000e-004 | | 7.1100e-003 | 7.1100e-003 | | 7.1100e-003 | 7.1100e-003 | 0.0000 | 101.8132 | 101.8132 | 1.9500e-003 | 1.8700e-003 | 102.4182 |
| Enclosed Parking with Elevator | 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 |
| General Office Building | 148863 | 8.0000e-004 | 7.3000e-003 | 6.1300e-003 | 4.0000e-005 | | 5.5000e-004 | 5.5000e-004 | | 5.5000e-004 | 5.5000e-004 | 0.0000 | 7.9439 | 7.9439 | 1.5000e-004 | 1.5000e-004 | 7.9911 |
| High School | 313186 | 1.6900e-003 | 0.0154 | 0.0129 | 9.0000e-005 | | 1.1700e-003 | 1.1700e-003 | | 1.1700e-003 | 1.1700e-003 | 0.0000 | 16.7128 | 16.7128 | 3.2000e-004 | 3.1000e-004 | 16.8121 |
| Other Non-Asphalt Surfaces | 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 |
| Parking Lot | 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** | | **0.0128** | **0.1106** | **0.0564** | **6.9000e-004** | | **8.8300e-003** | **8.8300e-003** | | **8.8300e-003** | **8.8300e-003** | **0.0000** | **126.4699** | **126.4699** | **2.4200e-003** | **2.3300e-003** | **127.2214** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Mid Rise | 819737 | 414.7090 | 0.0108 | 2.2300e-003 | 415.6434 |
| Enclosed Parking with Elevator | 571936 | 289.3454 | 7.5200e-003 | 1.5600e-003 | 289.9973 |
| General Office Building | 185757 | 93.9754 | 2.4400e-003 | 5.1000e-004 | 94.1872 |
| High School | 178275 | 90.1903 | 2.3500e-003 | 4.9000e-004 | 90.3935 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 3115 | 1.5759 | 4.0000e-005 | 1.0000e-005 | 1.5795 |
| **Total** | | **889.7960** | **0.0231** | **4.8000e-003** | **891.8008** |

### 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Mid Rise | 819737 | 414.7090 | 0.0108 | 2.2300e-003 | 415.6434 |
| Enclosed Parking with Elevator | 571936 | 289.3454 | 7.5200e-003 | 1.5600e-003 | 289.9973 |
| General Office Building | 185757 | 93.9754 | 2.4400e-003 | 5.1000e-004 | 94.1872 |
| High School | 178275 | 90.1903 | 2.3500e-003 | 4.9000e-004 | 90.3935 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 3115 | 1.5759 | 4.0000e-005 | 1.0000e-005 | 1.5795 |
| **Total** | | **889.7960** | **0.0231** | **4.8000e-003** | **891.8008** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 1.7487 | 0.0784 | 3.4601 | 3.4700e-003 | | 0.2095 | 0.2095 | | 0.2095 | 0.2095 | 21.9874 | 45.7531 | 67.7405 | 0.0690 | 1.4900e-003 | 69.9095 |
| Unmitigated | 1.7487 | 0.0784 | 3.4601 | 3.4700e-003 | | 0.2095 | 0.2095 | | 0.2095 | 0.2095 | 21.9874 | 45.7531 | 67.7405 | 0.0690 | 1.4900e-003 | 69.9095 |

## 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 | 0.0874 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.9180 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.6780 | 0.0537 | 1.3159 | 3.3600e-003 | | 0.1977 | 0.1977 | | 0.1977 | 0.1977 | 21.9874 | 42.2521 | 64.2395 | 0.0656 | 1.4900e-003 | 66.3235 |
| Landscaping | 0.0652 | 0.0247 | 2.1442 | 1.1000e-004 | | 0.0118 | 0.0118 | | 0.0118 | 0.0118 | 0.0000 | 3.5010 | 3.5010 | 3.4000e-003 | 0.0000 | 3.5860 |
| **Total** | **1.7487** | **0.0784** | **3.4601** | **3.4700e-003** | | **0.2095** | **0.2095** | | **0.2095** | **0.2095** | **21.9874** | **45.7531** | **67.7405** | **0.0690** | **1.4900e-003** | **69.9095** |

### 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 | 0.0874 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.9180 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.6780 | 0.0537 | 1.3159 | 3.3600e-003 | | 0.1977 | 0.1977 | | 0.1977 | 0.1977 | 21.9874 | 42.2521 | 64.2395 | 0.0656 | 1.4900e-003 | 66.3235 |
| Landscaping | 0.0652 | 0.0247 | 2.1442 | 1.1000e-004 | | 0.0118 | 0.0118 | | 0.0118 | 0.0118 | 0.0000 | 3.5010 | 3.5010 | 3.4000e-003 | 0.0000 | 3.5860 |
| **Total** | **1.7487** | **0.0784** | **3.4601** | **3.4700e-003** | | **0.2095** | **0.2095** | | **0.2095** | **0.2095** | **21.9874** | **45.7531** | **67.7405** | **0.0690** | **1.4900e-003** | **69.9095** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

GUSD Apartment Site Operation - Los Angeles-South Coast County, Annual

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 160.7264 | 0.4480 | 0.0113 | 175.2997 |
| Unmitigated | 188.5723 | 0.5596 | 0.0141 | 206.7611 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Mid Rise | 13.4869 / 8.5026 | 140.9119 | 0.4430 | 0.0111 | 155.2988 |
| Enclosed Parking with Elevator | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| General Office Building | 2.54159 / 1.55775 | 26.3043 | 0.0835 | 2.0900e-003 | 29.0149 |
| High School | 0.999926 / 2.57124 | 21.3561 | 0.0331 | 8.8000e-004 | 22.4473 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **188.5723** | **0.5596** | **0.0141** | **206.7610** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Mid Rise | 10.7895 / 7.98394 | 119.3723 | 0.3546 | 8.9300e-003 | 130.8968 |
| Enclosed Parking with Elevator | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| General Office Building | 2.03327 / 1.46273 | 22.2605 | 0.0668 | 1.6800e-003 | 24.4317 |
| High School | 0.799941 / 2.41439 | 19.0937 | 0.0266 | 7.2000e-004 | 19.9712 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **160.7264** | **0.4480** | **0.0113** | **175.2997** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 30.4385 | 1.7989 | 0.0000 | 75.4101 |
| Unmitigated | 30.4385 | 1.7989 | 0.0000 | 75.4101 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Mid Rise | 95.22 | 19.3288 | 1.1423 | 0.0000 | 47.8863 |
| Enclosed Parking with Elevator | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| General Office Building | 13.3 | 2.6998 | 0.1596 | 0.0000 | 6.6886 |
| High School | 41.43 | 8.4099 | 0.4970 | 0.0000 | 20.8352 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **30.4385** | **1.7989** | **0.0000** | **75.4101** |

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Mid Rise | 95.22 | 19.3288 | 1.1423 | 0.0000 | 47.8863 |
| Enclosed Parking with Elevator | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| General Office Building | 13.3 | 2.6998 | 0.1596 | 0.0000 | 6.6886 |
| High School | 41.43 | 8.4099 | 0.4970 | 0.0000 | 20.8352 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **30.4385** | **1.7989** | **0.0000** | **75.4101** |

## 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

# GUSD Apartment Site Operation

**Los Angeles-South Coast County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Enclosed Parking with Elevator | 244.00 | Space | 0.40 | 97,600.00 | 0 |
| Other Non-Asphalt Surfaces | 69.17 | 1000sqft | 0.00 | 41,288.00 | 0 |
| Apartments Mid Rise | 207.00 | Dwelling Unit | 1.99 | 207,000.00 | 592 |
| High School | 227.00 | Student | 0.69 | 30,114.04 | 0 |
| Parking Lot | 8.90 | 1000sqft | 0.20 | 8,900.00 | 0 |
| General Office Building | 14.30 | 1000sqft | 0.33 | 14,300.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 33 |
| **Climate Zone** | 11 | | | **Operational Year** | 2022 |
| **Utility Company** | Glendale Water & Power | | | | |
| **CO2 Intensity (lb/MWhr)** | 1115.33 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

GUSD Apartment Site Operation - Los Angeles-South Coast County, Summer

Project Characteristics -

Land Use - parking lot size estimated from Google Earth; high school size based on 2018 enrollement; Size of office building estimated assuming that the 6 residential units would be approximately 1,000 sf/each

Construction Phase - operation only

Grading - grading export and total acreage per the SCEA's CalEEMod modeling

Demolition -

Trips and VMT - operation only

Vehicle Trips - apartments trip rate based on the TIA

Construction Off-road Equipment Mitigation -

Area Mitigation -

Off-road Equipment - operation only

Woodstoves - per the SCEA's CalEEMod modeling

Water Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstructionPhase | NumDays | 5.00 | 1.00 |
| tblConstructionPhase | PhaseEndDate | 11/25/2019 | 11/19/2019 |
| tblLandUse | LandUseSquareFeet | 69,170.00 | 41,288.00 |
| tblLandUse | LotAcreage | 2.20 | 0.40 |
| tblLandUse | LotAcreage | 1.59 | 0.00 |
| tblLandUse | LotAcreage | 5.45 | 1.99 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 4.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 0.00 | 18.00 |

# 2.0 Emissions Summary

## 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 | | | | | |
| 2019 | 0.0899 | 0.0661 | 0.8679 | 2.1900e-003 | 0.2012 | 1.7300e-003 | 0.2029 | 0.0534 | 1.6000e-003 | 0.0550 | 0.0000 | 218.3315 | 218.3315 | 7.5000e-003 | 0.0000 | 218.5190 |
| **Maximum** | **0.0899** | **0.0661** | **0.8679** | **2.1900e-003** | **0.2012** | **1.7300e-003** | **0.2029** | **0.0534** | **1.6000e-003** | **0.0550** | **0.0000** | **218.3315** | **218.3315** | **7.5000e-003** | **0.0000** | **218.5190** |

### 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 | | | | | |
| 2019 | 0.0899 | 0.0661 | 0.8679 | 2.1900e-003 | 0.2012 | 1.7300e-003 | 0.2029 | 0.0534 | 1.6000e-003 | 0.0550 | 0.0000 | 218.3315 | 218.3315 | 7.5000e-003 | 0.0000 | 218.5190 |
| **Maximum** | **0.0899** | **0.0661** | **0.8679** | **2.1900e-003** | **0.2012** | **1.7300e-003** | **0.2029** | **0.0534** | **1.6000e-003** | **0.0550** | **0.0000** | **218.3315** | **218.3315** | **7.5000e-003** | **0.0000** | **218.5190** |

GUSD Apartment Site Operation - Los Angeles-South Coast County, Summer

| | ROG | NOx | 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 |

## 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 | 60.2725 | 4.4926 | 122.4240 | 0.2695 | | 15.9071 | 15.9071 | | 15.9071 | 15.9071 | 1,938.9521 | 3,756.8736 | 5,695.8258 | 5.8123 | 0.1316 | 5,880.3513 |
| Energy | 0.0700 | 0.6058 | 0.3092 | 3.8200e-003 | | 0.0484 | 0.0484 | | 0.0484 | 0.0484 | | 763.8858 | 763.8858 | 0.0146 | 0.0140 | 768.4252 |
| Mobile | 3.5389 | 17.0422 | 49.0720 | 0.1792 | 14.6082 | 0.1443 | 14.7525 | 3.9094 | 0.1346 | 4.0440 | | 18,237.6943 | 18,237.6943 | 0.9083 | | 18,260.4006 |
| **Total** | **63.8814** | **22.1406** | **171.8053** | **0.4525** | **14.6082** | **16.0997** | **30.7079** | **3.9094** | **16.0900** | **19.9994** | **1,938.9521** | **22,758.4537** | **24,697.4058** | **6.7352** | **0.1456** | **24,909.1770** |

### 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 | 60.2725 | 4.4926 | 122.4240 | 0.2695 | | 15.9071 | 15.9071 | | 15.9071 | 15.9071 | 1,938.9521 | 3,756.8736 | 5,695.8258 | 5.8123 | 0.1316 | 5,880.3513 |
| Energy | 0.0700 | 0.6058 | 0.3092 | 3.8200e-003 | | 0.0484 | 0.0484 | | 0.0484 | 0.0484 | | 763.8858 | 763.8858 | 0.0146 | 0.0140 | 768.4252 |
| Mobile | 3.5389 | 17.0422 | 49.0720 | 0.1792 | 14.6082 | 0.1443 | 14.7525 | 3.9094 | 0.1346 | 4.0440 | | 18,237.6943 | 18,237.6943 | 0.9083 | | 18,260.4006 |
| **Total** | **63.8814** | **22.1406** | **171.8053** | **0.4525** | **14.6082** | **16.0997** | **30.7079** | **3.9094** | **16.0900** | **19.9994** | **1,938.9521** | **22,758.4537** | **24,697.4058** | **6.7352** | **0.1456** | **24,909.1770** |

| | ROG | NOx | 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 | Site Preparation | Site Preparation | 11/19/2019 | 11/19/2019 | 5 | 1 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0.6**

**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 |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 0 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 0 | 8.00 | 97 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 0 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

### 3.2 Site Preparation - 2019

**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 |
| Off-Road | 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** |

## 3.2 Site Preparation - 2019

### 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 |
| 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 |
| Worker | 0.0899 | 0.0661 | 0.8679 | 2.1900e-003 | 0.2012 | 1.7300e-003 | 0.2029 | 0.0534 | 1.6000e-003 | 0.0550 | | 218.3315 | 218.3315 | 7.5000e-003 | | 218.5190 |
| **Total** | **0.0899** | **0.0661** | **0.8679** | **2.1900e-003** | **0.2012** | **1.7300e-003** | **0.2029** | **0.0534** | **1.6000e-003** | **0.0550** | | **218.3315** | **218.3315** | **7.5000e-003** | | **218.5190** |

### 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 |
| Off-Road | 0.0000 | 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** |

### 3.2 Site Preparation - 2019

**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 |
| 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 |
| Worker | 0.0899 | 0.0661 | 0.8679 | 2.1900e-003 | 0.2012 | 1.7300e-003 | 0.2029 | 0.0534 | 1.6000e-003 | 0.0550 | | 218.3315 | 218.3315 | 7.5000e-003 | | 218.5190 |
| **Total** | **0.0899** | **0.0661** | **0.8679** | **2.1900e-003** | **0.2012** | **1.7300e-003** | **0.2029** | **0.0534** | **1.6000e-003** | **0.0550** | | **218.3315** | **218.3315** | **7.5000e-003** | | **218.5190** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 3.5389 | 17.0422 | 49.0720 | 0.1792 | 14.6082 | 0.1443 | 14.7525 | 3.9094 | 0.1346 | 4.0440 | | 18,237.6943 | 18,237.6943 | 0.9083 | | 18,260.4006 |
| Unmitigated | 3.5389 | 17.0422 | 49.0720 | 0.1792 | 14.6082 | 0.1443 | 14.7525 | 3.9094 | 0.1346 | 4.0440 | | 18,237.6943 | 18,237.6943 | 0.9083 | | 18,260.4006 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Mid Rise | 1,376.55 | 1,322.73 | 1213.02 | 4,597,778 | 4,597,778 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | | |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| General Office Building | 157.73 | 35.18 | 15.02 | 386,041 | 386,041 |
| High School | 388.17 | 138.47 | 56.75 | 1,303,241 | 1,303,241 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 1,922.45 | 1,496.38 | 1,284.79 | 6,287,060 | 6,287,060 |

## 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 | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| Enclosed Parking with Elevator | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Other Non-Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| General Office Building | 16.60 | 8.40 | 6.90 | 33.00 | 48.00 | 19.00 | 77 | 19 | 4 |
| High School | 16.60 | 8.40 | 6.90 | 77.80 | 17.20 | 5.00 | 75 | 19 | 6 |
| Parking Lot | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| Enclosed Parking with Elevator | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| Other Non-Asphalt Surfaces | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| General Office Building | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| High School | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| Parking Lot | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

GUSD Apartment Site Operation - Los Angeles-South Coast County, Summer

| | ROG | NOx | CO | SO2 | Fugitive 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 | 0.0700 | 0.6058 | 0.3092 | 3.8200e-003 | | 0.0484 | 0.0484 | | 0.0484 | 0.0484 | | 763.8858 | 763.8858 | 0.0146 | 0.0140 | 768.4252 |
| NaturalGas Unmitigated | 0.0700 | 0.6058 | 0.3092 | 3.8200e-003 | | 0.0484 | 0.0484 | | 0.0484 | 0.0484 | | 763.8858 | 763.8858 | 0.0146 | 0.0140 | 768.4252 |

## 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 | 5227.14 | 0.0564 | 0.4817 | 0.2050 | 3.0700e-003 | | 0.0390 | 0.0390 | | 0.0390 | 0.0390 | | 614.9578 | 614.9578 | 0.0118 | 0.0113 | 618.6122 |
| Enclosed Parking with Elevator | 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 |
| General Office Building | 407.844 | 4.4000e-003 | 0.0400 | 0.0336 | 2.4000e-004 | | 3.0400e-003 | 3.0400e-003 | | 3.0400e-003 | 3.0400e-003 | | 47.9816 | 47.9816 | 9.2000e-004 | 8.8000e-004 | 48.2668 |
| High School | 858.044 | 9.2500e-003 | 0.0841 | 0.0707 | 5.0000e-004 | | 6.3900e-003 | 6.3900e-003 | | 6.3900e-003 | 6.3900e-003 | | 100.9463 | 100.9463 | 1.9300e-003 | 1.8500e-003 | 101.5462 |
| Other Non-Asphalt Surfaces | 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 |
| Parking Lot | 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 |
| **Total** | | **0.0700** | **0.6058** | **0.3092** | **3.8100e-003** | | **0.0484** | **0.0484** | | **0.0484** | **0.0484** | | **763.8858** | **763.8858** | **0.0146** | **0.0140** | **768.4252** |

### 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 | 5.22714 | 0.0564 | 0.4817 | 0.2050 | 3.0700e-003 | | 0.0390 | 0.0390 | | 0.0390 | 0.0390 | | 614.9578 | 614.9578 | 0.0118 | 0.0113 | 618.6122 |
| Enclosed Parking with Elevator | 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 |
| General Office Building | 0.407844 | 4.4000e-003 | 0.0400 | 0.0336 | 2.4000e-004 | | 3.0400e-003 | 3.0400e-003 | | 3.0400e-003 | 3.0400e-003 | | 47.9816 | 47.9816 | 9.2000e-004 | 8.8000e-004 | 48.2668 |
| High School | 0.858044 | 9.2500e-003 | 0.0841 | 0.0707 | 5.0000e-004 | | 6.3900e-003 | 6.3900e-003 | | 6.3900e-003 | 6.3900e-003 | | 100.9463 | 100.9463 | 1.9300e-003 | 1.8500e-003 | 101.5462 |
| Other Non-Asphalt Surfaces | 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 |
| Parking Lot | 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 |
| **Total** | | **0.0700** | **0.6058** | **0.3092** | **3.8100e-003** | | **0.0484** | **0.0484** | | **0.0484** | **0.0484** | | **763.8858** | **763.8858** | **0.0146** | **0.0140** | **768.4252** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive 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 | 60.2725 | 4.4926 | 122.4240 | 0.2695 | | 15.9071 | 15.9071 | | 15.9071 | 15.9071 | 1,938.9521 | 3,756.8736 | 5,695.8258 | 5.8123 | 0.1316 | 5,880.3513 |
| Unmitigated | 60.2725 | 4.4926 | 122.4240 | 0.2695 | | 15.9071 | 15.9071 | | 15.9071 | 15.9071 | 1,938.9521 | 3,756.8736 | 5,695.8258 | 5.8123 | 0.1316 | 5,880.3513 |

## 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 | 0.4789 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 5.0303 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 54.2415 | 4.2949 | 105.2702 | 0.2686 | | 15.8124 | 15.8124 | | 15.8124 | 15.8124 | 1,938.9521 | 3,726.0000 | 5,664.9521 | 5.7823 | 0.1316 | 5,848.7278 |
| Landscaping | 0.5217 | 0.1977 | 17.1538 | 9.1000e-004 | | 0.0947 | 0.0947 | | 0.0947 | 0.0947 | | 30.8736 | 30.8736 | 0.0300 | | 31.6234 |
| **Total** | **60.2724** | **4.4926** | **122.4240** | **0.2695** | | **15.9071** | **15.9071** | | **15.9071** | **15.9071** | **1,938.9521** | **3,756.8736** | **5,695.8258** | **5.8123** | **0.1316** | **5,880.3513** |

### 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 | 0.4789 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 5.0303 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 54.2415 | 4.2949 | 105.2702 | 0.2686 | | 15.8124 | 15.8124 | | 15.8124 | 15.8124 | 1,938.9521 | 3,726.0000 | 5,664.9521 | 5.7823 | 0.1316 | 5,848.7278 |
| Landscaping | 0.5217 | 0.1977 | 17.1538 | 9.1000e-004 | | 0.0947 | 0.0947 | | 0.0947 | 0.0947 | | 30.8736 | 30.8736 | 0.0300 | | 31.6234 |
| **Total** | **60.2724** | **4.4926** | **122.4240** | **0.2695** | | **15.9071** | **15.9071** | | **15.9071** | **15.9071** | **1,938.9521** | **3,756.8736** | **5,695.8258** | **5.8123** | **0.1316** | **5,880.3513** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

## 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

# GUSD Apartment Site Operation

**Los Angeles-South Coast County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Enclosed Parking with Elevator | 244.00 | Space | 0.40 | 97,600.00 | 0 |
| Other Non-Asphalt Surfaces | 69.17 | 1000sqft | 0.00 | 41,288.00 | 0 |
| Apartments Mid Rise | 207.00 | Dwelling Unit | 1.99 | 207,000.00 | 592 |
| High School | 227.00 | Student | 0.69 | 30,114.04 | 0 |
| Parking Lot | 8.90 | 1000sqft | 0.20 | 8,900.00 | 0 |
| General Office Building | 14.30 | 1000sqft | 0.33 | 14,300.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 33 |
| **Climate Zone** | 11 | | | **Operational Year** | 2022 |
| **Utility Company** | Glendale Water & Power | | | | |
| **CO2 Intensity (lb/MWhr)** | 1115.33 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

GUSD Apartment Site Operation - Los Angeles-South Coast County, Winter

Project Characteristics -

Land Use - parking lot size estimated from Google Earth; high school size based on 2018 enrollement; Size of office building estimated assuming that the 6 residential units would be approximately 1,000 sf/each

Construction Phase - operation only

Grading - grading export and total acreage per the SCEA's CalEEMod modeling

Demolition -

Trips and VMT - operation only

Vehicle Trips - apartments trip rate based on the TIA

Construction Off-road Equipment Mitigation -

Area Mitigation -

Off-road Equipment - operation only

Woodstoves - per the SCEA's CalEEMod modeling

Water Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstructionPhase | NumDays | 5.00 | 1.00 |
| tblConstructionPhase | PhaseEndDate | 11/25/2019 | 11/19/2019 |
| tblLandUse | LandUseSquareFeet | 69,170.00 | 41,288.00 |
| tblLandUse | LotAcreage | 2.20 | 0.40 |
| tblLandUse | LotAcreage | 1.59 | 0.00 |
| tblLandUse | LotAcreage | 5.45 | 1.99 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 4.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 0.00 | 18.00 |

# 2.0 Emissions Summary

## 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 | | | | | |
| 2019 | 0.0997 | 0.0732 | 0.7965 | 2.0700e-003 | 0.2012 | 1.7300e-003 | 0.2029 | 0.0534 | 1.6000e-003 | 0.0550 | 0.0000 | 205.5836 | 205.5836 | 7.0700e-003 | 0.0000 | 205.7604 |
| **Maximum** | **0.0997** | **0.0732** | **0.7965** | **2.0700e-003** | **0.2012** | **1.7300e-003** | **0.2029** | **0.0534** | **1.6000e-003** | **0.0550** | **0.0000** | **205.5836** | **205.5836** | **7.0700e-003** | **0.0000** | **205.7604** |

### 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 | | | | | |
| 2019 | 0.0997 | 0.0732 | 0.7965 | 2.0700e-003 | 0.2012 | 1.7300e-003 | 0.2029 | 0.0534 | 1.6000e-003 | 0.0550 | 0.0000 | 205.5836 | 205.5836 | 7.0700e-003 | 0.0000 | 205.7604 |
| **Maximum** | **0.0997** | **0.0732** | **0.7965** | **2.0700e-003** | **0.2012** | **1.7300e-003** | **0.2029** | **0.0534** | **1.6000e-003** | **0.0550** | **0.0000** | **205.5836** | **205.5836** | **7.0700e-003** | **0.0000** | **205.7604** |

GUSD Apartment Site Operation - Los Angeles-South Coast County, Winter

| | ROG | NOx | 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 |

## 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 | 60.2725 | 4.4926 | 122.4240 | 0.2695 | | 15.9071 | 15.9071 | | 15.9071 | 15.9071 | 1,938.9521 | 3,756.8736 | 5,695.8258 | 5.8123 | 0.1316 | 5,880.3513 |
| Energy | 0.0700 | 0.6058 | 0.3092 | 3.8200e-003 | | 0.0484 | 0.0484 | | 0.0484 | 0.0484 | | 763.8858 | 763.8858 | 0.0146 | 0.0140 | 768.4252 |
| Mobile | 3.4351 | 17.4759 | 46.4151 | 0.1705 | 14.6082 | 0.1449 | 14.7532 | 3.9094 | 0.1352 | 4.0446 | | 17,362.3482 | 17,362.3482 | 0.9043 | | 17,384.9567 |
| **Total** | **63.7775** | **22.5743** | **169.1483** | **0.4438** | **14.6082** | **16.1004** | **30.7086** | **3.9094** | **16.0906** | **20.0001** | **1,938.9521** | **21,883.1076** | **23,822.0597** | **6.7313** | **0.1456** | **24,033.7331** |

### 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 | 60.2725 | 4.4926 | 122.4240 | 0.2695 | | 15.9071 | 15.9071 | | 15.9071 | 15.9071 | 1,938.9521 | 3,756.8736 | 5,695.8258 | 5.8123 | 0.1316 | 5,880.3513 |
| Energy | 0.0700 | 0.6058 | 0.3092 | 3.8200e-003 | | 0.0484 | 0.0484 | | 0.0484 | 0.0484 | | 763.8858 | 763.8858 | 0.0146 | 0.0140 | 768.4252 |
| Mobile | 3.4351 | 17.4759 | 46.4151 | 0.1705 | 14.6082 | 0.1449 | 14.7532 | 3.9094 | 0.1352 | 4.0446 | | 17,362.3482 | 17,362.3482 | 0.9043 | | 17,384.9567 |
| **Total** | **63.7775** | **22.5743** | **169.1483** | **0.4438** | **14.6082** | **16.1004** | **30.7086** | **3.9094** | **16.0906** | **20.0001** | **1,938.9521** | **21,883.1076** | **23,822.0597** | **6.7313** | **0.1456** | **24,033.7331** |

| | ROG | NOx | 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 | Site Preparation | Site Preparation | 11/19/2019 | 11/19/2019 | 5 | 1 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0.6**

**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 |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 0 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 0 | 8.00 | 97 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 0 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

## 3.2 Site Preparation - 2019

**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 |
| Off-Road | 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** |

## 3.2 Site Preparation - 2019

### 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 |
| 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 |
| Worker | 0.0997 | 0.0732 | 0.7965 | 2.0700e-003 | 0.2012 | 1.7300e-003 | 0.2029 | 0.0534 | 1.6000e-003 | 0.0550 | | 205.5836 | 205.5836 | 7.0700e-003 | | 205.7604 |
| **Total** | **0.0997** | **0.0732** | **0.7965** | **2.0700e-003** | **0.2012** | **1.7300e-003** | **0.2029** | **0.0534** | **1.6000e-003** | **0.0550** | | **205.5836** | **205.5836** | **7.0700e-003** | | **205.7604** |

### 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 |
| Off-Road | 0.0000 | 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** |

### 3.2 Site Preparation - 2019

**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 |
| 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 |
| Worker | 0.0997 | 0.0732 | 0.7965 | 2.0700e-003 | 0.2012 | 1.7300e-003 | 0.2029 | 0.0534 | 1.6000e-003 | 0.0550 | | 205.5836 | 205.5836 | 7.0700e-003 | | 205.7604 |
| **Total** | **0.0997** | **0.0732** | **0.7965** | **2.0700e-003** | **0.2012** | **1.7300e-003** | **0.2029** | **0.0534** | **1.6000e-003** | **0.0550** | | **205.5836** | **205.5836** | **7.0700e-003** | | **205.7604** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 3.4351 | 17.4759 | 46.4151 | 0.1705 | 14.6082 | 0.1449 | 14.7532 | 3.9094 | 0.1352 | 4.0446 | | 17,362.3482 | 17,362.3482 | 0.9043 | | 17,384.9567 |
| Unmitigated | 3.4351 | 17.4759 | 46.4151 | 0.1705 | 14.6082 | 0.1449 | 14.7532 | 3.9094 | 0.1352 | 4.0446 | | 17,362.3482 | 17,362.3482 | 0.9043 | | 17,384.9567 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Mid Rise | 1,376.55 | 1,322.73 | 1213.02 | 4,597,778 | 4,597,778 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | | |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| General Office Building | 157.73 | 35.18 | 15.02 | 386,041 | 386,041 |
| High School | 388.17 | 138.47 | 56.75 | 1,303,241 | 1,303,241 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 1,922.45 | 1,496.38 | 1,284.79 | 6,287,060 | 6,287,060 |

## 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 | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |
| Enclosed Parking with Elevator | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Other Non-Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| General Office Building | 16.60 | 8.40 | 6.90 | 33.00 | 48.00 | 19.00 | 77 | 19 | 4 |
| High School | 16.60 | 8.40 | 6.90 | 77.80 | 17.20 | 5.00 | 75 | 19 | 6 |
| Parking Lot | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| Enclosed Parking with Elevator | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| Other Non-Asphalt Surfaces | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| General Office Building | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| High School | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |
| Parking Lot | 0.546501 | 0.044961 | 0.204016 | 0.120355 | 0.015740 | 0.006196 | 0.020131 | 0.030678 | 0.002515 | 0.002201 | 0.005142 | 0.000687 | 0.000876 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

GUSD Apartment Site Operation - Los Angeles-South Coast County, Winter

| | ROG | NOx | CO | SO2 | Fugitive 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 | 0.0700 | 0.6058 | 0.3092 | 3.8200e-003 | | 0.0484 | 0.0484 | | 0.0484 | 0.0484 | | 763.8858 | 763.8858 | 0.0146 | 0.0140 | 768.4252 |
| NaturalGas Unmitigated | 0.0700 | 0.6058 | 0.3092 | 3.8200e-003 | | 0.0484 | 0.0484 | | 0.0484 | 0.0484 | | 763.8858 | 763.8858 | 0.0146 | 0.0140 | 768.4252 |

## 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 | 5227.14 | 0.0564 | 0.4817 | 0.2050 | 3.0700e-003 | | 0.0390 | 0.0390 | | 0.0390 | 0.0390 | | 614.9578 | 614.9578 | 0.0118 | 0.0113 | 618.6122 |
| Enclosed Parking with Elevator | 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 |
| General Office Building | 407.844 | 4.4000e-003 | 0.0400 | 0.0336 | 2.4000e-004 | | 3.0400e-003 | 3.0400e-003 | | 3.0400e-003 | 3.0400e-003 | | 47.9816 | 47.9816 | 9.2000e-004 | 8.8000e-004 | 48.2668 |
| High School | 858.044 | 9.2500e-003 | 0.0841 | 0.0707 | 5.0000e-004 | | 6.3900e-003 | 6.3900e-003 | | 6.3900e-003 | 6.3900e-003 | | 100.9463 | 100.9463 | 1.9300e-003 | 1.8500e-003 | 101.5462 |
| Other Non-Asphalt Surfaces | 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 |
| Parking Lot | 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 |
| **Total** | | **0.0700** | **0.6058** | **0.3092** | **3.8100e-003** | | **0.0484** | **0.0484** | | **0.0484** | **0.0484** | | **763.8858** | **763.8858** | **0.0146** | **0.0140** | **768.4252** |

### 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 | 5.22714 | 0.0564 | 0.4817 | 0.2050 | 3.0700e-003 | | 0.0390 | 0.0390 | | 0.0390 | 0.0390 | | 614.9578 | 614.9578 | 0.0118 | 0.0113 | 618.6122 |
| Enclosed Parking with Elevator | 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 |
| General Office Building | 0.407844 | 4.4000e-003 | 0.0400 | 0.0336 | 2.4000e-004 | | 3.0400e-003 | 3.0400e-003 | | 3.0400e-003 | 3.0400e-003 | | 47.9816 | 47.9816 | 9.2000e-004 | 8.8000e-004 | 48.2668 |
| High School | 0.858044 | 9.2500e-003 | 0.0841 | 0.0707 | 5.0000e-004 | | 6.3900e-003 | 6.3900e-003 | | 6.3900e-003 | 6.3900e-003 | | 100.9463 | 100.9463 | 1.9300e-003 | 1.8500e-003 | 101.5462 |
| Other Non-Asphalt Surfaces | 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 |
| Parking Lot | 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 |
| **Total** | | **0.0700** | **0.6058** | **0.3092** | **3.8100e-003** | | **0.0484** | **0.0484** | | **0.0484** | **0.0484** | | **763.8858** | **763.8858** | **0.0146** | **0.0140** | **768.4252** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive 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 | 60.2725 | 4.4926 | 122.4240 | 0.2695 | | 15.9071 | 15.9071 | | 15.9071 | 15.9071 | 1,938.9521 | 3,756.8736 | 5,695.8258 | 5.8123 | 0.1316 | 5,880.3513 |
| Unmitigated | 60.2725 | 4.4926 | 122.4240 | 0.2695 | | 15.9071 | 15.9071 | | 15.9071 | 15.9071 | 1,938.9521 | 3,756.8736 | 5,695.8258 | 5.8123 | 0.1316 | 5,880.3513 |

## 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 | 0.4789 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 5.0303 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 54.2415 | 4.2949 | 105.2702 | 0.2686 | | 15.8124 | 15.8124 | | 15.8124 | 15.8124 | 1,938.9521 | 3,726.0000 | 5,664.9521 | 5.7823 | 0.1316 | 5,848.7278 |
| Landscaping | 0.5217 | 0.1977 | 17.1538 | 9.1000e-004 | | 0.0947 | 0.0947 | | 0.0947 | 0.0947 | | 30.8736 | 30.8736 | 0.0300 | | 31.6234 |
| **Total** | **60.2724** | **4.4926** | **122.4240** | **0.2695** | | **15.9071** | **15.9071** | | **15.9071** | **15.9071** | **1,938.9521** | **3,756.8736** | **5,695.8258** | **5.8123** | **0.1316** | **5,880.3513** |

### 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 | 0.4789 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 5.0303 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 54.2415 | 4.2949 | 105.2702 | 0.2686 | | 15.8124 | 15.8124 | | 15.8124 | 15.8124 | 1,938.9521 | 3,726.0000 | 5,664.9521 | 5.7823 | 0.1316 | 5,848.7278 |
| Landscaping | 0.5217 | 0.1977 | 17.1538 | 9.1000e-004 | | 0.0947 | 0.0947 | | 0.0947 | 0.0947 | | 30.8736 | 30.8736 | 0.0300 | | 31.6234 |
| **Total** | **60.2724** | **4.4926** | **122.4240** | **0.2695** | | **15.9071** | **15.9071** | | **15.9071** | **15.9071** | **1,938.9521** | **3,756.8736** | **5,695.8258** | **5.8123** | **0.1316** | **5,880.3513** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

## 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

Start date and time  11/28/18 14:15:12

AERSCREEN 16216

GUSD Apartment Project Construction

GUSD Apartment Project Construction

---------- DATA ENTRY VALIDATION ----------

| | METRIC | ENGLISH |
|---|---|---|
| ** AREADATA ** | ---------- | ---------- |
| Emission Rate: | 0.167E-02 g/s | 0.133E-01 lb/hr |
| Area Height: | 3.00 meters | 9.84 feet |
| Area Source Length: | 108.00 meters | 354.33 feet |
| Area Source Width: | 90.00 meters | 295.28 feet |
| Vertical Dimension: | 1.50 meters | 4.92 feet |
| Model Mode: | URBAN | |
| Population: | 203054 | |
| Dist to Ambient Air: | 1.0 meters | 3. feet |

** BUILDING DATA **

No Building Downwash Parameters

** TERRAIN DATA **

No Terrain Elevations

Source Base Elevation:  0.0 meters  0.0  feet

Probe distance:  5000. meters  16404. feet

No flagpole receptors

No discrete receptors used

** FUMIGATION DATA **

No fumigation requested

** METEOROLOGY DATA **

Min/Max Temperature:  250.0 / 310.0 K  -9.7 /  98.3 Deg F

Minimum Wind Speed:  0.5 m/s

Anemometer Height:  10.000 meters

Dominant Surface Profile: Urban
Dominant Climate Type:  Average Moisture

Surface friction velocity (u*): not adjusted

DEBUG OPTION OFF

AERSCREEN output file:

*** AERSCREEN Run is Ready to Begin

No terrain used, AERMAP will not be run

**********

SURFACE CHARACTERISTICS & MAKEMET

Obtaining surface characteristics...

Using AERMET seasonal surface characteristics for Urban with Average Moisture

| Season | Albedo | Bo | zo |
|---|---|---|---|
| Winter | 0.35 | 1.50 | 1.000 |
| Spring | 0.14 | 1.00 | 1.000 |
| Summer | 0.16 | 2.00 | 1.000 |
| Autumn | 0.18 | 2.00 | 1.000 |

Creating met files aerscreen_01_01.sfc & aerscreen_01_01.pfl

Creating met files aerscreen_02_01.sfc & aerscreen_02_01.pfl

Creating met files aerscreen_03_01.sfc & aerscreen_03_01.pfl

Creating met files aerscreen_04_01.sfc & aerscreen_04_01.pfl

Buildings and/or terrain present or rectangular area source, skipping probe

FLOWSECTOR started 11/28/18 14:16:06

**********

```
  Running AERMOD
 Processing Winter

Processing surface roughness sector  1

**************************************************
Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   0

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   5

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  10

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
```

```
Processing wind flow sector   4

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  15

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   5

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  20

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   6

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  25

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   7

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  30

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
```

```
Processing wind flow sector   8

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  35

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   9

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  40

    ********   WARNING MESSAGES   ********
               ***  NONE  ***
 ****************************************

  Running AERMOD
 Processing Spring

Processing surface roughness sector  1

**************************************************
Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector   0

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   2
```

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 5

******** WARNING MESSAGES ********

*** NONE ***

**********

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 10

******** WARNING MESSAGES ********

*** NONE ***

**********

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 15

******** WARNING MESSAGES ********

*** NONE ***

**********

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 20

******** WARNING MESSAGES ********

*** NONE ***

**********

Processing wind flow sector 6

```
 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  25

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   7

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  30

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   8

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  35

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   9

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  40

    ********   WARNING MESSAGES   ********
               ***  NONE  ***
 ****************************************
```

```
  Running AERMOD
 Processing Summer

Processing surface roughness sector  1

**************************************************
Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   0

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   5

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  10

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   4
```

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  15

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************

Processing wind flow sector   5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  20

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************

Processing wind flow sector   6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  25

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************

Processing wind flow sector   7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  30

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************

Processing wind flow sector   8

```
 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  35

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   9

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  40

    ********   WARNING MESSAGES   ********
               ***  NONE  ***
 ******************************************

  Running AERMOD
 Processing Autumn

Processing surface roughness sector  1

**************************************************
Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   0

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   5
```

```
    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  10

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   4

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  15

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   5

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  20

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   6
```

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  25

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   7

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  30

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   8

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  35

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   9

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  40

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

FLOWSECTOR   ended 11/28/18 14:16:27

REFINE       started 11/28/18 14:16:27

```
 AERMOD Finishes Successfully for REFINE stage 3 Winter sector   0

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

REFINE       ended 11/28/18 14:16:29

 ********************************************
 AERSCREEN Finished Successfully
 With no errors or warnings
 Check log file for details
 ********************************************

 Ending date and time  11/28/18 14:16:29
```

| Concentration | Distance | Elevation | Diag | Season/Month | Zo sector | Date |
|---|---|---|---|---|---|---|
| H0 U* W* DT/DZ ZICNV ZIMCH M-O LEN Z0 BOWEN ALBEDO REF WS HT REF TA HT | | | | | | |
| 0.32156E+01 | 1.00 | 0.00 | 30.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.38337E+01 | 25.00 | 0.00 | 0.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.43478E+01 | 50.00 | 0.00 | 10.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| * 0.44401E+01 | 56.00 | 0.00 | 10.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.39646E+01 | 75.00 | 0.00 | 40.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.24724E+01 | 100.00 | 0.00 | 40.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.17891E+01 | 125.00 | 0.00 | 35.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.14058E+01 | 150.00 | 0.00 | 30.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.11548E+01 | 175.00 | 0.00 | 25.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.97605E+00 | 200.00 | 0.00 | 5.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.84097E+00 | 225.00 | 0.00 | 0.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.73490E+00 | 250.00 | 0.00 | 0.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.64973E+00 | 275.00 | 0.00 | 0.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.58026E+00 | 300.00 | 0.00 | 0.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.52273E+00 | 325.00 | 0.00 | 5.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.47450E+00 | 350.00 | 0.00 | 0.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.43311E+00 | 375.00 | 0.00 | 5.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.39776E+00 | 400.00 | 0.00 | 5.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.36715E+00 | 425.00 | 0.00 | 0.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.34024E+00 | 450.00 | 0.00 | 0.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |

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   0.31667E+00       475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.29569E+00       500.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.27708E+00       525.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.26035E+00       550.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.24531E+00       575.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.23169E+00       600.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.21932E+00       625.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.20812E+00       650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.19786E+00       675.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.18841E+00       700.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.17973E+00       725.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.17165E+00       750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.16419E+00       775.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.15730E+00       800.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.15091E+00       825.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.14493E+00       850.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.13935E+00       875.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.13412E+00       900.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.12925E+00       925.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.12467E+00       950.01      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.12038E+00       975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
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   0.11634E+00      1000.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.11252E+00      1025.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.10891E+00      1050.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.10549E+00      1075.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.10224E+00      1100.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.99159E-01      1125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.96240E-01      1150.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.93466E-01      1175.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.90834E-01      1200.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.88331E-01      1225.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.85952E-01      1250.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.83678E-01      1275.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.81502E-01      1300.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.79416E-01      1325.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.77421E-01      1350.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.75511E-01      1375.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.73679E-01      1400.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.71924E-01      1425.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.70246E-01      1450.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.68635E-01      1475.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.67084E-01      1500.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
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   0.65593E-01      1525.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.64159E-01      1550.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.63303E-01      1575.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.61951E-01      1600.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.60648E-01      1625.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.59392E-01      1650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.58180E-01      1675.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.57011E-01      1700.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.55881E-01      1725.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.54790E-01      1750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.53735E-01      1775.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.52715E-01      1800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.51728E-01      1825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.50772E-01      1850.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.49847E-01      1875.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.48950E-01      1900.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.48081E-01      1924.99      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.47239E-01      1950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.46421E-01      1975.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.45628E-01      2000.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.44858E-01      2025.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
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   0.44110E-01      2050.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.43384E-01      2075.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.42678E-01      2100.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.41992E-01      2125.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.41324E-01      2150.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.40675E-01      2175.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.40043E-01      2200.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.39428E-01      2224.99      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.38830E-01      2250.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.38246E-01      2275.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.37678E-01      2300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.37124E-01      2325.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.36585E-01      2350.00      0.00  25.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.36058E-01      2375.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.35545E-01      2399.99      0.00  35.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.35044E-01      2425.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.34555E-01      2449.99      0.00  25.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.34078E-01      2475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.33612E-01      2500.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.33157E-01      2525.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.32713E-01      2550.00      0.00  25.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
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   0.32279E-01      2575.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.31855E-01      2600.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.31440E-01      2625.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.31035E-01      2650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.30638E-01      2675.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.30251E-01      2700.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.29871E-01      2725.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.29500E-01      2750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.29137E-01      2775.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.28781E-01      2800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.28433E-01      2825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.28092E-01      2850.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.27758E-01      2875.00      0.00  25.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.27431E-01      2900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.27111E-01      2925.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.26797E-01      2950.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.26489E-01      2975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.26187E-01      3000.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.25892E-01      3025.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.25602E-01      3050.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.25317E-01      3075.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
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   0.25038E-01      3100.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.24764E-01      3125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.24496E-01      3150.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.24232E-01      3174.99      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.23974E-01      3199.99      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.23720E-01      3225.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.23470E-01      3250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.23225E-01      3275.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.22985E-01      3300.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.22749E-01      3325.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.22517E-01      3350.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.22289E-01      3375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.22065E-01      3400.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.21845E-01      3425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.21628E-01      3450.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.21415E-01      3475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.21207E-01      3500.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.21001E-01      3525.00      0.00  25.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.20799E-01      3550.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.20600E-01      3575.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.20405E-01      3600.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
```

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   0.20212E-01      3625.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.20023E-01      3650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.19837E-01      3675.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.19654E-01      3700.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.19474E-01      3724.99      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.19296E-01      3750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.19121E-01      3775.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.18949E-01      3800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.18780E-01      3825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.18614E-01      3849.99      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.18449E-01      3875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.18288E-01      3900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.18129E-01      3925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.17972E-01      3950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.17817E-01      3975.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.17665E-01      4000.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.17515E-01      4025.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.17368E-01      4050.00      0.00  30.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.17222E-01      4075.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.17078E-01      4100.00      0.00  35.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.16937E-01      4125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
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   0.16797E-01      4150.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.16660E-01      4175.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.16524E-01      4200.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.16391E-01      4225.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.16259E-01      4250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.16129E-01      4275.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.16001E-01      4300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.15875E-01      4325.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.15750E-01      4350.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.15627E-01      4375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.15506E-01      4400.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.15386E-01      4425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.15268E-01      4450.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.15151E-01      4475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.15036E-01      4500.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.14923E-01      4525.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.14811E-01      4550.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.14700E-01      4575.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.14591E-01      4600.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.14483E-01      4625.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.14377E-01      4650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
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   0.14272E-01      4675.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.14168E-01      4700.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.14065E-01      4725.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.13964E-01      4750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.13864E-01      4775.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.13766E-01      4800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.13668E-01      4825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.13572E-01      4850.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.13477E-01      4875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.13383E-01      4900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.13290E-01      4925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.13198E-01      4950.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.13108E-01      4975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.13018E-01      5000.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
```

Start date and time  11/29/18 11:55:40

AERSCREEN 16216

GUSD APARTMENT PROJECT OPERATION

---------- DATA ENTRY VALIDATION ----------

| | METRIC | ENGLISH |
|---|---|---|
| ** AREADATA ** | ---------- | ---------- |
| Emission Rate: | 0.697E-02 g/s | 0.553E-01 lb/hr |
| Area Height: | 3.00 meters | 9.84 feet |
| Area Source Length: | 128.00 meters | 419.95 feet |
| Area Source Width: | 108.00 meters | 354.33 feet |
| Vertical Dimension: | 1.50 meters | 4.92 feet |
| Model Mode: | URBAN | |
| Population: | 203054 | |
| Dist to Ambient Air: | 1.0 meters | 3. feet |

** BUILDING DATA **

No Building Downwash Parameters

** TERRAIN DATA **

No Terrain Elevations

Source Base Elevation:  0.0 meters  0.0  feet

Probe distance:  5000. meters  16404. feet

No flagpole receptors

No discrete receptors used

** FUMIGATION DATA **

No fumigation requested

** METEOROLOGY DATA **

Min/Max Temperature:  250.0 / 310.0 K   -9.7 /  98.3 Deg F

Minimum Wind Speed:     0.5 m/s

Anemometer Height:   10.000 meters

Dominant Surface Profile: Urban
Dominant Climate Type:    Average Moisture

Surface friction velocity (u*): not adjusted

DEBUG OPTION OFF

AERSCREEN output file:
GUSDOPERATION.OUT

*** AERSCREEN Run is Ready to Begin

No terrain used, AERMAP will not be run
**********

SURFACE CHARACTERISTICS & MAKEMET

Obtaining surface characteristics...

Using AERMET seasonal surface characteristics for Urban with Average Moisture

| Season | Albedo | Bo | zo |
|---|---|---|---|
| Winter | 0.35 | 1.50 | 1.000 |
| Spring | 0.14 | 1.00 | 1.000 |
| Summer | 0.16 | 2.00 | 1.000 |
| Autumn | 0.18 | 2.00 | 1.000 |

Creating met files aerscreen_01_01.sfc & aerscreen_01_01.pfl

Creating met files aerscreen_02_01.sfc & aerscreen_02_01.pfl

Creating met files aerscreen_03_01.sfc & aerscreen_03_01.pfl

Creating met files aerscreen_04_01.sfc & aerscreen_04_01.pfl

Buildings and/or terrain present or rectangular area source, skipping probe

FLOWSECTOR started 11/29/18 11:56:01
**********

Running AERMOD

```
 Processing Winter

Processing surface roughness sector  1

****************************************************
Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   0

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

****************************************************
Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   5

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

****************************************************
Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  10

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

****************************************************
Processing wind flow sector   4
```

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  15

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   5

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  20

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   6

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  25

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   7

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  30

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   8

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  35

******** WARNING MESSAGES ********

*** NONE ***

**********

Processing wind flow sector  9

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  40

******** WARNING MESSAGES ********

*** NONE ***

**********

Processing wind flow sector  10

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  45

******** WARNING MESSAGES ********

*** NONE ***

**********

Running AERMOD

Processing Spring

Processing surface roughness sector  1

**********

Processing wind flow sector  1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  0

```
    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector   5

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  10

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   4

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  15

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   5

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  20
```

```
    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   6

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  25

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   7

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  30

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   8

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  35

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   9
```

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  40

******** WARNING MESSAGES ********

*** NONE ***

**************************************************

Processing wind flow sector  10

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  45

******** WARNING MESSAGES ********

*** NONE ***

**********

Running AERMOD

Processing Summer

Processing surface roughness sector  1

**************************************************

Processing wind flow sector  1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  0

******** WARNING MESSAGES ********

*** NONE ***

**************************************************

Processing wind flow sector  2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  5

```
    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  10

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   4

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  15

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   5

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  20

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   6

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  25
```

```
    ********   WARNING MESSAGES   ********
               ***  NONE  ***

*****************************************************
Processing wind flow sector   7

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  30

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

*****************************************************
Processing wind flow sector   8

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  35

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

*****************************************************
Processing wind flow sector   9

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  40

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

*****************************************************
Processing wind flow sector  10

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  45
```

```
    ********   WARNING MESSAGES   ********
               ***  NONE  ***
 *****************************************

  Running AERMOD
 Processing Autumn

Processing surface roughness sector  1

***************************************************
Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   0

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

***************************************************
Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   5

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

***************************************************
Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  10
```

******** WARNING MESSAGES ********

*** NONE ***

**********

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 15

******** WARNING MESSAGES ********

*** NONE ***

**********

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 20

******** WARNING MESSAGES ********

*** NONE ***

**********

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 25

******** WARNING MESSAGES ********

*** NONE ***

**********

Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 30

```
    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   8

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  35

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   9

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  40

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector  10

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  45

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

FLOWSECTOR   ended 11/29/18 11:56:25

REFINE       started 11/29/18 11:56:25
```

AERMOD Finishes Successfully for REFINE stage 3 Winter sector   0

   ********   WARNING MESSAGES   ********

              ***  NONE  ***

REFINE       ended 11/29/18 11:56:27

 ********************************************

 AERSCREEN Finished Successfully

 With no errors or warnings

 Check log file for details

 ********************************************

 Ending date and time  11/29/18 11:56:27

| Concentration | Distance | Elevation | Diag | Season/Month | Zo sector | Date |
|---|---|---|---|---|---|---|
| H0 U* W* DT/DZ ZICNV ZIMCH M-O LEN Z0 BOWEN ALBEDO REF WS HT REF TA HT | | | | | | |
| 0.10461E+02 | 1.00 | 0.00 | 35.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.12047E+02 | 25.00 | 0.00 | 30.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.13500E+02 | 50.00 | 0.00 | 5.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.14587E+02 | 75.00 | 0.00 | 35.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| * 0.14719E+02 | 78.00 | 0.00 | 35.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.10337E+02 | 100.01 | 0.00 | 35.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.72670E+01 | 125.00 | 0.00 | 40.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.56295E+01 | 150.00 | 0.00 | 35.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.46077E+01 | 175.00 | 0.00 | 35.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.38948E+01 | 200.00 | 0.00 | 30.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.33641E+01 | 225.00 | 0.00 | 25.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.29543E+01 | 250.00 | 0.00 | 0.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.26223E+01 | 275.00 | 0.00 | 0.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.23507E+01 | 300.00 | 0.00 | 0.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.21235E+01 | 325.00 | 0.00 | 0.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.19313E+01 | 350.00 | 0.00 | 5.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.17682E+01 | 375.00 | 0.00 | 0.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.16262E+01 | 400.00 | 0.00 | 5.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.15028E+01 | 425.00 | 0.00 | 5.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |
| 0.13954E+01 | 450.00 | 0.00 | 0.0 | Winter | 0-360 | 10011001 |
| -1.30 0.043 -9.000 0.020 -999. 21. 6.0 1.000 1.50 0.35 0.50 10.0 310.0 2.0 | | | | | | |

```
   0.13000E+01       475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.12153E+01       500.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.11398E+01       525.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.10721E+01       550.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.10108E+01       575.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.95539E+00       600.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.90515E+00       625.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.85913E+00       650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.81714E+00       675.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.77853E+00       700.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.74278E+00       725.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.70995E+00       750.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.67951E+00       775.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.65120E+00       800.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.62499E+00       825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.60064E+00       850.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.57783E+00       875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.55640E+00       900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.53634E+00       925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.51741E+00       950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.49952E+00       975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
```

```
   0.48273E+00      1000.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.46693E+00      1025.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.45205E+00      1050.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.43793E+00      1075.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.42451E+00      1100.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.41179E+00      1125.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.39973E+00      1150.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.38826E+00      1175.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.37739E+00      1200.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.36702E+00      1225.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.35715E+00      1250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.34775E+00      1275.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.33878E+00      1300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.33021E+00      1325.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.32196E+00      1350.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.31407E+00      1375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.30650E+00      1400.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.29921E+00      1425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.29221E+00      1450.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.28550E+00      1475.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.27907E+00      1500.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
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   0.27286E+00      1525.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.26692E+00      1550.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.26120E+00      1575.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.25570E+00      1600.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.25041E+00      1625.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.24529E+00      1650.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.24035E+00      1675.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.23556E+00      1700.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.23093E+00      1725.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.22646E+00      1750.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.22213E+00      1775.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.21794E+00      1800.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.21389E+00      1824.99      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.20996E+00      1850.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.20814E+00      1875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.20440E+00      1900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.20077E+00      1925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.19725E+00      1950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.19384E+00      1975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.19052E+00      2000.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.18731E+00      2025.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
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   0.18419E+00      2050.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.18115E+00      2075.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.17821E+00      2100.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.17534E+00      2125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.17255E+00      2150.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.16984E+00      2175.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.16721E+00      2200.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.16464E+00      2225.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.16214E+00      2250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.15970E+00      2275.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.15733E+00      2300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.15502E+00      2325.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.15276E+00      2350.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.15056E+00      2375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.14842E+00      2400.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.14633E+00      2425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.14429E+00      2450.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.14230E+00      2475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.14035E+00      2500.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.13845E+00      2525.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.13660E+00      2550.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
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   0.13478E+00      2575.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.13301E+00      2600.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.13128E+00      2625.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.12959E+00      2650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.12793E+00      2675.00      0.00  25.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.12631E+00      2700.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.12473E+00      2725.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.12318E+00      2750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.12166E+00      2775.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.12018E+00      2800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.11873E+00      2825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.11730E+00      2850.00      0.00  35.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.11591E+00      2875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.11454E+00      2900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.11321E+00      2925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.11189E+00      2950.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.11061E+00      2975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.10935E+00      3000.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.10811E+00      3025.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.10690E+00      3050.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.10571E+00      3075.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
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   0.10455E+00      3100.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.10341E+00      3125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.10228E+00      3150.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.10118E+00      3175.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.10010E+00      3200.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.99043E-01      3225.00      0.00  10.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.98002E-01      3249.99      0.00  35.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.96979E-01      3274.99      0.00  45.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.95975E-01      3300.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.94989E-01      3325.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.94020E-01      3350.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.93068E-01      3375.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.92133E-01      3400.00      0.00  45.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.91214E-01      3425.00      0.00  25.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.90311E-01      3450.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.89423E-01      3475.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.88550E-01      3500.00      0.00  20.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.87692E-01      3525.00      0.00  25.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.86848E-01      3550.00      0.00  25.0        Winter       0-360   10011001
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310.0    2.0
   0.86018E-01      3575.00      0.00  15.0        Winter       0-360   10011001
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310.0    2.0
   0.85201E-01      3599.99      0.00  45.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
```

```
   0.84398E-01      3625.00      0.00  40.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.83608E-01      3650.00      0.00  40.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.82831E-01      3675.00      0.00  30.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.82066E-01      3699.99      0.00  40.0        Winter       0-360   10011001
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310.0    2.0
   0.81313E-01      3724.99      0.00  20.0        Winter       0-360   10011001
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310.0    2.0
   0.80573E-01      3750.00      0.00  25.0        Winter       0-360   10011001
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310.0    2.0
   0.79843E-01      3775.00      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.79125E-01      3800.00      0.00   0.0        Winter       0-360   10011001
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310.0    2.0
   0.78419E-01      3825.00      0.00   5.0        Winter       0-360   10011001
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310.0    2.0
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310.0    2.0
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310.0    2.0
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310.0    2.0
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-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.74398E-01      3975.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.73763E-01      4000.00      0.00   0.0        Winter       0-360   10011001
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310.0    2.0
   0.73137E-01      4024.99      0.00  45.0        Winter       0-360   10011001
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310.0    2.0
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310.0    2.0
   0.71912E-01      4075.00      0.00   5.0        Winter       0-360   10011001
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310.0    2.0
   0.71313E-01      4100.00      0.00  35.0        Winter       0-360   10011001
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310.0    2.0
   0.70722E-01      4125.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
```

```
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310.0    2.0
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310.0    2.0
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310.0    2.0
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310.0    2.0
   0.67892E-01      4250.00      0.00  10.0        Winter       0-360   10011001
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310.0    2.0
   0.67349E-01      4275.00      0.00   5.0        Winter       0-360   10011001
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310.0    2.0
   0.66814E-01      4300.00      0.00  10.0        Winter       0-360   10011001
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310.0    2.0
   0.66286E-01      4325.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.65766E-01      4349.99      0.00  45.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.65252E-01      4375.00      0.00   0.0        Winter       0-360   10011001
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310.0    2.0
   0.64745E-01      4400.00      0.00  10.0        Winter       0-360   10011001
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310.0    2.0
   0.64245E-01      4425.00      0.00   5.0        Winter       0-360   10011001
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310.0    2.0
   0.63752E-01      4449.99      0.00  10.0        Winter       0-360   10011001
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310.0    2.0
   0.63266E-01      4475.00      0.00  20.0        Winter       0-360   10011001
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310.0    2.0
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310.0    2.0
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310.0    2.0
   0.61843E-01      4550.00      0.00   0.0        Winter       0-360   10011001
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310.0    2.0
   0.61381E-01      4575.00      0.00  20.0        Winter       0-360   10011001
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310.0    2.0
   0.60926E-01      4599.99      0.00  40.0        Winter       0-360   10011001
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310.0    2.0
   0.60475E-01      4625.00      0.00  25.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.60031E-01      4650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
```

```
   0.59593E-01      4675.00      0.00  20.0        Winter       0-360   10011001
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310.0    2.0
   0.59159E-01      4700.00      0.00  35.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.58732E-01      4725.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.58309E-01      4750.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.57892E-01      4774.99      0.00  45.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.57480E-01      4800.00      0.00   5.0        Winter       0-360   10011001
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310.0    2.0
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310.0    2.0
   0.56671E-01      4850.00      0.00   5.0        Winter       0-360   10011001
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310.0    2.0
   0.56274E-01      4875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.55881E-01      4900.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.55494E-01      4924.99      0.00  15.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.55111E-01      4950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.54732E-01      4975.00      0.00  35.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
   0.54358E-01      5000.00      0.00   5.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50   10.0
310.0    2.0
```

**EXHIBIT P**



# Guide to Off-Road Vehicle & Equipment Regulations

CALIFORNIA AIR RESOURCES BOARD

OFF-ROAD ZONE

The California Air Resources Board (CARB) is actively enforcing off-road diesel and large spark-ignition engine vehicle and equipment regulations in support of California's clean air goals. Enforcement of clean off-road vehicle rules provides a level playing field for those who have already done their part and are in compliance. If your fleet does not meet state clean air laws, you could be subject to fines.

This booklet provides basic information and resources to help take the guesswork out of California's clean off-road vehicle and equipment requirements. This booklet is not comprehensive of all CARB regulations that an off-road fleet may be subject to, but provides basic information specific to the following:

- Regulation for In-Use Off-Road Diesel-Fueled Fleets
- Large Spark-Ignition Engine Fleet Requirements Regulation
- Portable Equipment Registration Program

# DISCLAIMER

While this booklet is intended to assist vehicle owners with their compliance efforts, it is the sole responsibility of fleets to ensure compliance with applicable regulations.

For more information or assistance with compliance options, visit arb.ca.gov/offroadzone, call the toll-free hotline at (877) 59DOORS (877-593-6677), or email at *doors@arb.ca.gov*.

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## What off-road vehicle and equipment rules may apply to you?

Check all that apply:

- [ ] Are your off-road vehicles or equipment self-propelled and have diesel engines?

  See the Regulation for In-Use Off-Road Diesel-Fueled Fleets: Page 2

- [ ] Do you operate a diesel off-road fleet with a combined horsepower (hp) of 500 or less?

  See the Optional Compliance Schedule overview: Page 7

- [ ] Do you operate forklifts, sweeper/scrubbers or airport ground support equipment?

  See the Large Spark-Ignition Engine Fleet Requirements Regulation: Page 8

- [ ] Does a vehicle pull your equipment?

  See the Portable Equipment Registration Program: Page 12

- [ ] Do you own or operate two-engine cranes, water-well drilling rigs, or other two-engine diesel vehicles?

  See the Two-Engine Vehicle overview: Page 14

## Regulation for In-Use Off-Road Diesel-Fueled Fleets

All self-propelled off-road diesel vehicles 25 horsepower (hp) or greater used in California and most two-engine vehicles (except on-road two-engine sweepers) are subject to the Regulation for In-Use Off-Road Diesel-Fueled Fleets (Off-Road Diesel Regulation). This includes rented and leased vehicles. The overall purpose of the Off-Road Diesel Regulation is to reduce emissions of oxides of nitrogen ($NO_X$) and particulate matter (PM) from off-road diesel vehicles operating within California. The Off-Road Diesel Regulation does the following:

- Requires all vehicles be reported to CARB (online reporting tool, DOORS) and labeled.
- Restricts the adding of older vehicles into fleets starting on January 1, 2014.
- Requires fleet owners to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (VDECS) i.e., exhaust retrofits.
- Imposes limits on idling and requires a written idling policy, and
- Requires a disclosure when selling vehicles.

### Table 1: Fleet Size

| Category | Description |
|---|---|
| Small | < 2,500 hp |
| Medium | 2,501 to 5,000 hp |
| Large | > 5,000 hp |

The requirements and compliance dates of the Off-Road Diesel Regulation vary by fleet size. For a fleet owner to determine their fleet size, it must add up all of the off-road diesel horsepower under common ownership or control in the fleet.

## Basic Reporting

### Reporting – Initial & Annual

Fleet owners must report the vehicle and engine information for all vehicles within their fleets operating in California. Fleet owners must also report owner information. Fleet owners should report using DOORS, which is CARB's free online reporting tool. For more information on how to report and what information is required, visit *arb.ca.gov/offroadzone*.

New California fleet owners must report their vehicle and engine information within 30 days of the date of purchase or bringing the vehicles into the state. Fleet owners must report new vehicles, sold vehicles, and retired vehicles within 30 days.

All fleet owners must review and update their information by March 1st of each year. For each annual reporting date, a fleet owner must report any changes to the fleet, hour meter readings (for low-use vehicles and vehicles used a majority of the time, but not solely, for agricultural operations), and submit the Responsible Official Affirmation of Reporting (ROAR) form. Fleet owners submit this information using DOORS or forms available on CARB's website.

### Labeling

After fleet owners report vehicles to CARB, a unique Equipment Identification Number (EIN) is assigned to each vehicle. The fleet owner must label their vehicles within 30 days of receiving EINs. CARB does not issue EIN labels; it is the fleet owner's responsibility to follow CARB's label specification and to make or purchase the labels or placards, or paint the EINs on their vehicles. Off-road diesel vehicles must have two labels, one on each side of the vehicle.



## Emission Performance Compliance Options

By each annual compliance deadline, a fleet owner must demonstrate that their fleet has met the fleet average target for that year, or completed the Best Available Control Technology (BACT) requirements.

## Meeting the Fleet Average Target

The fleet average index is an indicator of a fleet's overall emissions rate determined by the horsepower and model year of each engine in the fleet. If the fleet average index is equal to or less than the fleet average target for a given year, the fleet owner is not required to take further action to reduce emissions from their vehicles.

## Complying with BACT Requirements

If a fleet owner cannot, or chooses not to, meet the fleet average target in a given year, it may instead comply with the BACT requirements. A fleet owner may meet the BACT requirements each year by turning over or installing VDECS on a certain percentage (referred to as the BACT rate) of the fleet's total horsepower.

### Table 2: Compliance Dates for Annual Reporting and Emission Performance Requirements by Fleet Size

| Fleet Size | Annual Reporting[1] | Fleet Average Target or BACT Dates[2] |
|---|---|---|
| Large | 2012 - 2023 | 2014 - 2023 |
| Medium | 2016 - 2023 | 2017 - 2023 |
| Small | 2018 - 2028 | 2019 - 2028 |

1 A fleet using BACT to comply may have requirements beyond these dates if the fleet average target is not achieved.

2 A fleet using BACT to comply may have requirements beyond these dates if the fleet average target is not achieved.

## Ban on Adding Vehicles

- **Ban on adding Tier 0 Vehicles:** Effective January 1, 2014, a fleet owner may not add a vehicle with a Tier 0 engine to their fleet.
- **Ban on adding Tier 1 Vehicles:** Effective January 1, 2014, for large and medium fleets, and January 1, 2016, for small fleets, a fleet owner may not add any vehicle with a Tier 1 engine.
- **Ban on adding Tier 2 Vehicles:** Effective January 1, 2018, for large and medium fleets, and January 1, 2023, for small fleets, a fleet owner may not add a vehicle with a Tier 2 engine to their fleet. The engine must be Tier 3 or higher.



### Table 3: Adding Vehicles Requirements by Fleet Size & Calendar Year[3]

| Fleet Size | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| Medium/ Large | T2 | | | | T3 | | | | | |
| Small | T1 | | T2 | | | | | | | T3 |

3 Minimum engine tier allowed to be added to a fleet.

### Disclosure for Selling Vehicles

The seller (whether a dealer or a contractor with just one vehicle) must provide disclosure of the Off-Road Diesel Regulation (exact language provided in the regulation) on the bill of sale or invoice, and must keep records that the disclosure was provided for three years after the sale. The seller must also report the vehicle sale to CARB within 30 days of the sale.

### Idling Limited to 5 Minutes

Fleet owners must limit their unnecessary idling to five minutes; there are exceptions for vehicles that need to idle to perform work (such as a crane providing hydraulic power to the boom), vehicles being serviced, or in a queue waiting for work.

### Written Idling Policy

Medium and large fleet owners must have a written idling policy.



### Optional Compliance Schedule for Fleets with 500 hp or Less

Small fleets with 500 hp or less may comply with the small fleet requirements, or may comply with an optional compliance schedule. The optional compliance schedule allows the fleet owner to phase out Tier 0 and Tier 1 vehicles by 2029 by demonstrating, through annual reporting that the fleet has a minimum percentage of vehicles with a Tier 2 engine. The optional compliance schedule is shown in the table below.

### Table 4: Optional Compliance Schedule for Fleets with 500 hp or Less

| Compliance Date: January 1 of Year | Percent of Fleet (by hp) |
|---|---|
| 2019 | 25 |
| 2022 | 50 |
| 2026 | 75 |
| 2029 | 100 |

By 2029, fleet vehicles must have Tier 2 or higher engines. If small fleet owners with 500 hp or less choose not to pursue this compliance path, they must meet the small fleet requirements.



## Off-Road Large Spark-Ignition Engine Fleet Requirements Regulation

All forklifts, floor scrubbers and sweepers, industrial tow tractors, and airport ground support equipment with large spark-ignited (LSI) engines meeting the following requirements are subject to the Off-Road Large Spark-Ignition Engine Fleet Requirements Regulation (LSI Fleet Regulation):

- 25 horsepower (19 kilowatts) or greater, and
- greater than 1 liter displacement.

LSI engines use gasoline, propane, and compressed natural gas as fuel. The LSI Fleet Regulation includes some electric-powered equipment.

The overall purpose of the LSI Fleet Regulation is to reduce emissions of $NO_X$ and hydrocarbons from an estimated 90,000 pieces of equipment in California by accelerating the introduction of cleaner equipment through retrofits and the retirement of older, dirtier equipment. The LSI Fleet Regulation does the following:

- Requires fleets to meet a fleet average emission level (FAEL) standard.
- Requires all equipment subject to the FAEL standard be reported to CARB and labeled.
- Reduces emissions from uncontrolled equipment through engine retrofit or replacement with newer, lower-emission equipped engines or electric-powered equipment.

Small fleets, those fleets with less than four forklifts or less than four non-forklifts, are excluded from the LSI Fleet Regulation.

## Basic Reporting

### Reporting – Initial & Annual

Fleet operators must report the equipment and engine information for all equipment subject to the FAEL standards to CARB. Fleet operators must also report operator's information. Fleet operators report using DOORS, which is CARB's free online reporting tool for the LSI Fleet Regulation. For more information on how to report and what information is required, visit *arb.ca.gov/offroadzone*.

Fleet operators were required to complete initial reporting by June 30, 2017. Fleets that are newly subject to the FAEL after June 30, 2017 (for example, a new fleet operating in California or fleet that grew from small to large fleet size), must report within 60 days.

Fleets subject to the FAEL must submit a reporting attestation annually between June 1st and June 30th each year through 2023. The attestation must affirm that the reported information is true, accurate, and complete. Fleet operators must report any changes to the fleet and hour meter readings for low-use vehicles. Fleet operators submit this information using DOORS or forms available on CARB's website.



## Fleet Average Emission Level Standards

Fleets were required to meet FAEL standards in accordance to the compliance schedule described in Table 3. The final compliance date for the FAEL standards was January 1, 2013. Fleet operators can reduce their fleet's average emissions by replacing older equipment with used or new equipment that has engines certified to the 2010 emission standard, replacing with zero-emission electric equipment, or by installing retrofits (available for 1990 and newer model year engines).

### Table 5: LSI Fleet Regulation Fleet Average Emission Level Standards

| Fleet Type | Number of Units | Fleet Average Emission Level g/kW-hr (g/bhp-hr) | | |
|---|---|---|---|---|
| | | 1/1/2009 | 1/1/2011 | 1/1/2013 |
| Large forklift fleet | 26+ | 3.2 (2.4) | 2.3 (1.7) | 1.5 (1.1) |
| Medium forklift fleet | 4 - 25 | 3.5 (2.6) | 2.7 (2.0) | 1.9 (1.4) |
| Non-forklift fleet | 4+ | 4.0 (3.0) | 3.6 (2.7) | 3.4 (2.5) |

## Labeling

After a fleet operator reports their equipment to CARB, CARB assigns each piece of equipment a unique Equipment Identification Number (EIN). The fleet operators must label their equipment within 30 days of receiving EINs. CARB does not issue EIN labels; it is the fleet operator's responsibility to follow CARB's label specification and to make or purchase the labels or placards, or paint the EINs on their vehicles. Off-road LSI equipment must have one label per piece of equipment.

## Rental/Lease Equipment

In certain situations, rental and leased equipment may be included in a fleet's FAEL calculation. For example, since this equipment is typically newer, fleet operators may want to include this equipment to lower their FAEL. Fleet operators must report and label any rental or leased equipment that is included in their FAEL calculation in the same manner as the equipment the fleet operator owns.



## Agricultural Crop Preparation Service (ACPS) Equipment

Operators of ACPS equipment are subject to emission requirements in the LSI Fleet Regulation. The LSI Fleet Regulation does not require ACPS equipment to be reported and labeled. ACPS equipment is defined as packinghouses, cotton gins, nut hullers and processers, dehydrators, feed and grain mills, and other related activities that fall within the United States Census Bureau's North American Industry Classification System (NAICS) definition for Industry 115114 (Postharvest Crop Activities) (published 2002). For forestry operations, ACPS means milling, peeling, producing particleboard and medium density fiberboard, and producing woody landscape materials and other related activities the NAICS definition for 321113 (Sawmills, published in 2007) and 321219 (Reconstituted Wood Product Manufacturing, published in 2007).

## In-Field Agriculture

In-field agricultural equipment is exempt from the LSI Fleet Regulation.

## Portable Equipment Registration Program (PERP)

If you own or operate a portable engine 50 hp or greater, you may need a permit or registration to legally operate in California. California has 35 local air districts that are responsible for taking enforcement action against individuals who own or operate portable equipment without a registration or permit.

PERP is a statewide program, established in 1997 with the PERP Regulation that provides an alternative path to registration for portable equipment owners who operate in multiple air districts. Without the uniform statewide program, equipment owners would have to obtain an operating permit from each air district where the engine or equipment unit operates, potentially leading to multiple permits for one piece of equipment. Portable equipment registered in PERP may operate throughout the state without obtaining multiple local air district permits.



## Portable Engine Examples

Examples of portable engines include those used in well drilling, service rigs, power generation (excluding cogeneration), pumps, compressors, diesel pile-driving hammers, welding, cranes, wood chippers, dredges, and military tactical support equipment applications. Equipment units are pieces of portable equipment that emit non-combustion-related particulate matter less than 10 microns in diameter ($PM_{10}$) and are used in activities that include, but are not limited to, confined and unconfined abrasive blasting, concrete batch plants, sand and gravel screening, rock crushing, wood chipping, and unheated pavement recycling and crushing.

## Why Regulate Portable Engines?

The Portable Diesel Engine Airborne Toxic Control Measure (ATCM) is a regulation adopted in 2004 that sets emissions requirements for portable engines to reduce exposure to toxic diesel particulate matter and protect public health. The ATCM works in concert with PERP to allow fleets to voluntarily register portable equipment used across California with the state rather than permitting or registering the equipment with each local air district individually.

Learn more about your specific requirements by emailing *portable@arb.ca.gov*, visiting *arb.ca.gov/portable/portable.htm*



## Two-Engine Vehicles

### Two-Engine Vehicles May Be Subject to Two Regulations

CARB has tried to limit the situations in which the engines of a two-engine vehicle are subject to different regulations. In most cases, both engines of a two-engine vehicle are subject to the Off-Road Diesel Regulation. However, there are exceptions to this rule. In certain cases, a two-engine vehicle may be subject to two of the following regulations:

- Truck and Bus Regulation
- Off-Road Diesel Regulation
- Fleet Rule for Public Agencies and Utilities
- Portable Diesel Engine Airborne Toxic Control Measure

CARB has defined two-engine vehicles in the Off-Road Diesel Regulation as "a specially constructed on-road or off-road mobile diesel-powered vehicle that was designed by the original equipment manufacturer to be equipped with two diesel engines: one engine provides the primary source of motive power of the vehicle while the second engine is an auxiliary engine 50 brake horsepower (bhp) or greater that is permanently attached and integrated into the design of the vehicle to perform a specific function, which may include providing auxiliary power to attachments, performing special job functions, or providing additional motive power."

If a vehicle was originally designed to be able to accommodate an auxiliary engine, but someone other than the original equipment manufacturer installed that engine, the vehicle still qualifies as a two-engine vehicle.

Examples of two-engine vehicles include augers, boom trucks, concrete mixers, concrete pump trucks, cranes, drill rigs, guardrail fence installers, and vacuum pump trucks.

## Funding Assistance

Grant funding may be available to help fleets and individuals comply with California regulations earlier or beyond regulatory requirements.

### The Carl Moyer Memorial Air Quality Standards Attainment Program

One of the most popular assistance options is the Carl Moyer Program (Moyer program). This grant program funds the incremental cost of cleaner-than-required engines, equipment and other sources of air pollution. The Moyer program complements California's regulatory programs by providing incentives to obtain early or extra emission reductions beyond what is required by regulation.

Implementation of the Moyer program is a partnership between CARB and California's 35 local air districts. Over the Moyer program's history, more than half of the total program funding has gone towards off-road projects.

Funding is available for vehicle replacements, retrofits, zero-emission technologies, and infrastructure. Equipment owners are encouraged to apply as early as possible to maximize potential funding options. Please contact the local air district where you are based to determine if you are eligible for funding or if an opportunity may become available in the future.

### FARMER Program

The "Funding Agricultural Replacement Measures for Emission Reductions" (FARMER) Program provides funding for cleaner heavy-duty trucks, tractors, harvesting equipment, agricultural pump engines, utility terrain vehicles, and other equipment used in agricultural operations.

FARMER Program incentive funding is available for participants to purchase cleaner agricultural equipment to help reduce their exposure to harmful diesel emissions, improve local air quality, and lower greenhouse gas emissions. Similar to the Carl Moyer Program, FARMER is administered through California's local air districts.

To learn more about the FARMER program and funding eligibility requirements, potential participants are encouraged to visit CARB's FARMER website at *arb.ca.gov/farmer*, or contact their local air district.

### CORE Voucher Program

The Clean Off-Road Equipment Voucher Incentive Project (CORE) is intended to accelerate deployment of advanced technology in the off-road sector by providing a streamlined way for fleets to access funding that helps offset the incremental cost of such technology. CORE targets commercial-ready products that have not yet achieved a significant market foothold. By promoting the purchase of clean technology over internal combustion options, the project is expected to reduce emissions, particularly in areas that are most impacted; help build confidence in zero-emission technology; and provide other sector-wide benefits, such as technology transferability, reductions in advanced-technology component costs, and larger infrastructure investments.

For more information, visit *californiacore.org* or *arb.ca.gov/calcore*.

## Quick Tips

- All fleet owners must report and label their off-road diesel vehicles with two Equipment Identification Numbers (EIN).
- All fleet owners must report and label their large spark-ignited engine equipment with one EIN.
- You can access your DOORS account for the Off-Road Diesel and LSI Fleet Regulations with one username and password.
- Remember to update DOORS after you sell a diesel vehicle or LSI equipment within 30 days. Once this you do so, the new owner can enter the vehicle/equipment into their fleet.
- The Responsible Official Affirmation Report (ROAR) for the Off-Road Diesel Regulation can be completed electronically using the e-ROAR in DOORS – saving time, money, and trees.
- Off-road diesel vehicles used 100% of the time in agricultural operations are exempt from the Off-Road Diesel Regulation.
- Off-road LSI equipment used 100% of the time for in-field agricultural operations are exempt from the LSI Fleet Regulation.
- Large and medium off-road diesel fleets can no longer add vehicles with Tier 0, Tier 1, or Tier 2 engines to their fleets.
- Small fleets can add vehicles with Tier 2 diesel engines until January 1, 2023.
- Small off-road diesel fleets with 500 horsepower or less may comply with an optional compliance schedule requiring a percentage of Tier 2 engines in the fleet.
- CARB frequently sends out regulatory reminders to fleets; make sure your contact information is up to date in DOORS so you don't miss this important information.

## How do I get assistance with CARB regulations?

For more information or help with the Off-Road Diesel Regulation or the LSI Fleet Regulation, call CARB's toll-free DOORS hotline at (877) 59DOORS (877-593-6677) or email at *doors@arb.ca.gov*. DOORS may be accessed at: *ssl.arb.ca.gov/ssldoors/doors_reporting/doors_login.html*.

For more information or assistance with the Portable Equipment Registration Program (PERP), email *portable@arb.ca.gov*.

Visit the *arb.ca.gov/offroadzone* to access vital information including program pages for each regulation. These pages contain detailed documents meant to help fleets with their compliance efforts, such as Frequently Asked Questions, User Guides, and compliance forms.

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**Contact Information**
For more information or assistance with compliance options, visit *arb.ca.gov/offroadzone*, call CARB's toll-free hotline at (877) 59DOORS (877-593-6677), or email at *DOORS@arb.ca.gov*

**EXHIBIT Q**

MITCHELL M. TSAI
Law Firm

Naira Soghbatyan <naira@mitchtsailaw.com>

# Fwd: Revised Notice of Availability - Park Tower Student Housing (Dorms) 5150 East Pacific Coast Hwy, Long Beach, CA

**Hind Baki** <hind@mitchtsailaw.com> Wed, Dec 11, 2024 at 12:41 PM
To: Gina Casillas <Gina.Casillas@longbeach.gov>
Cc: Amy Harbin <Amy.Harbin@longbeach.gov>, Naira Soghbatyan <naira@mitchtsailaw.com>, "Mitchell M. Tsai Attorney at Law, P.C." <info@mitchtsailaw.com>

Dear City Staff,

I was able to download all the Appendices from the City's website, except for Appendix B (Air Quality and Greenhouse Gas Emissions), which doesn't appear to have a working link. The attachments are not available on CEQANET yet. Can you please send or post Appendix B?

Thank you,
--Hind

**Hind Baki**
Paralegal
Mitchell M. Tsai Law Firm - *Environmental & Land Use Litigation*
139 South Hudson Avenue, Suite 200
Pasadena, CA 91101
Office: (626) 314-3821
Fax: (626) 389-5414
Email: hind@mitchtsailaw.com
Website: https://www.mitchtsailaw.com

***Please note that Hind Baki is out of office on Fridays; for any urgent matters, please contact info@mitchtsailaw.com***

CONFIDENTIALITY NOTICE: This e-mail transmission, and any documents, files or previous e-mail messages accompanying it, may contain confidential information that is legally privileged. If you are not the intended recipient, or a person responsible for delivering it to the intended recipient, you are hereby notified that any disclosure, copying, distribution or use of any of the information contained in or attached to this message is STRICTLY PROHIBITED and may violate applicable laws including the Electronic Communications Privacy Act. If you have received this transmission in error, please immediately notify us by reply e-mail at hind@mitchtsailaw.com or by telephone at (626) 314-3821 and destroy the original transmission and its attachments without reading them or saving them to disk. Thank you.

[Quoted text hidden]

MITCHELL M. TSAI
Law Firm

Naira Soghbatyan <naira@mitchtsailaw.com>

# Fwd: Revised Notice of Availability - Park Tower Student Housing (Dorms) 5150 East Pacific Coast Hwy, Long Beach, CA

**Gina Casillas** <Gina.Casillas@longbeach.gov> Wed, Dec 11, 2024 at 4:06 PM
To: Hind Baki <hind@mitchtsailaw.com>
Cc: Amy Harbin <Amy.Harbin@longbeach.gov>, Naira Soghbatyan <naira@mitchtsailaw.com>, "Mitchell M. Tsai Attorney at Law, P.C." <info@mitchtsailaw.com>

Hello Hindi

Thank you for bringing this to my attention. The document has been re-uploaded and I have verified that is works.

Respectfully,

**Gina Casillas**

*Planner*

**Community Development | Planning Bureau**

411 W. Ocean Blvd., 3rd Fl. | Long Beach, CA 90802

Office: 562.570.6879 | Email: gina.casillas@longbeach.gov

LONGBEACH
COMMUNITY
DEVELOPMENT

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**From:** Hind Baki <hind@mitchtsailaw.com>
**Sent:** Wednesday, December 11, 2024 12:42 PM
**To:** Gina Casillas <Gina.Casillas@longbeach.gov>
**Cc:** Amy Harbin <Amy.Harbin@longbeach.gov>; Naira Soghbatyan <naira@mitchtsailaw.com>; Mitchell M. Tsai Attorney at Law, P.C. <info@mitchtsailaw.com>
**Subject:** Re: Revised Notice of Availability - Park Tower Student Housing (Dorms) 5150 East Pacific Coast Hwy, Long Beach, CA

**-EXTERNAL-**

[Quoted text hidden]

**EXHIBIT R**

# Premier Long Beach Virtual Office in Long Beach CA

5150 E. Pacific Coast Hwy, Suite 2nd Floor Long Beach, CA 90804





Overview | Map

Our 17,200 square foot business center is housed in an area mirrored glass landmark building. This building is a 7-story Class A office tower that underwent an entire renovation of all common areas, elevator lobbies, parking garage, landscaping as well as a dramatic new ground floor main building lobby creating one of the region's coolest modern business environments. This second floor plug-n-play shared workspace features 58 single or multi-person office suites and three conference rooms.

- Mail Forwarding
- Conference Room(s)
- Receptionist Greeting
- Administrative Support

Give Your Business the Professional Image it Deserves. Use a virtual business address to receive your mail and packages, register your company, and utilize for marketing purposes.

Each location will accept your mail and packages from USPS, FedEx, UPS and any other independent courier. If you are unable to pick-up your mail, you have the option to have it forwarded. Use the center to meet and engage with your clients in a professional setting. United Virtual Office can provide your business the right image and services without the cost and commitment of traditional office space.

**Premier Long Beach**
5150 E. Pacific Coast Hwy, Suite 2nd Floor
Long Beach, CA 90804

**Questions?**
Talk to one of our Virtual Office Advisors now at **1-888-456-3342**

Help

**Select a plan for this location**

Virtual Office Only

Virtual Office & Virtual Phone

From **$95.00** per month

GET STARTED NOW

## Available Options

**Mail Forwarding**
Can't pick-up your mail? Have your mail forwarded the mail address of your choice.
*Additional fee's may apply.

**Conference Room Access**
Need to meet with your clients in a professional setting? Ask about our hourly rates.

SPREAD THE WORD

- Share via Facebook (http://www.facebook.com/sharer/sharer.php?u=https://unitedvirtualoffice.com/california/california-5150-e-pacific-coast-hwy)
- Share via Twitter (http://twitter.com/intent/tweet?text=https://unitedvirtualoffice.com/california/california-5150-e-pacific-coast-hwy)
- Share via Linkedin (http://www.linkedin.com/shareArticle?mini=true&url=https://unitedvirtualoffice.com/california/california-5150-e-pacific-coast-hwy)
- Share via Pinterest (https://pinterest.com/pin/create/bookmarklet/?url=https://unitedvirtualoffice.com/california/california-5150-e-pacific-coast-hwy)

POPULAR OFFICES LOCATIONS



(https://unitedvirtualoffice.com/california/dublin-11501-dublin-blvd)

580 Executive Center (https://unitedvirtualoffice.com/california/dublin-11501-dublin-blvd)
11501 Dublin Blvd., Suite 200
Dublin, CA 94568



(https://unitedvirtualoffice.com/ohio/independence-4807-rockside-road)

Office Space: Rockside (https://unitedvirtualoffice.com/ohio/independence-4807-rockside-road)
4807 Rockside Road, Suite 400
Independence, OH 44131



(https://unitedvirtualoffice.com/utah/salt-lake-city-77-west-200-south)

American Plaza One (https://unitedvirtualoffice.com/utah/salt-lake-city-77-west-200-south)
77 West 200 South, Suite 3rd Floor
Salt Lake City, UT 84101

155 N. Riverview Drive
Anaheim Hills, Ca 92880
P: (Phone) 1-888-456-3342

## Our Services

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Virtual Office Locations (virtual_office)

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**EXHIBIT S**

CITY OF LONG BEACH

**Development Services**
**Planning Bureau**
411 West Ocean Boulevard, 3rd Floor, Long Beach, CA 90802
(562) 570-6194

November 18, 2022

Burnham Development,
Derek Burnham
130 Pine Ave, Suite 200
Long Beach, CA 90802
derek@burnhamdevelopment.com

**Re:** 5150 E Pacific Coast Highway
Application No. 2208-43 (CSPR22-010)

Dear Mr. Burnham,

On Wednesday, October 26, your application for Conceptual Site Plan Review for the above-noted project was reviewed by the Site Plan Review Committee. The project proposes to convert an existing seven story office building to a dormitory with 593 beds. The Site Plan Review Committee expressed the need for additional housing for students and they were generally supportive of the proposed project. This letter serves to officially transmit the comments of the Site Plan Review Committee to you, as well as to provide the statutory information required by Section 21.25.503.C of the Zoning Regulations to conclude the CSPR process for your project.

Comments

- Concerns were raised regarding the changes that will be needed on the exterior of the building to accommodate the change in use. The Committee will review the proposed changes during the next stage in the project.
- AB 2097 applies to this property site which eliminates the requirement for minimum parking requirements for the change in use.
- Based on the plans, it appears that the existing basement encroaches into the Pacific Coast Highway sidewalk. The applicant shall confirm that this is the case. If it does indeed encroach, Public Works has no record of a vacation of area below Pacific Coast Highway to allow for the subterranean encroachment. Provide documentation of this vacation. If one does not exist, the applicant will need to process the subterranean vacation.
- One bike parking space per unit should be provided. Upon the next submittal, provide a clear bike route plan of how tenants are to access the bike kitchen in the basement level. How do tenants get to the bike kitchen from when they enter the site? What is the bike path of travel?
- There are future plans to, at a minimum, put Clark on a road diet and add a bike path between Anaheim and Pacific Coast Highway. There is also the possibility of closing off Clark to through traffic, but still allowing access to the site for tenants. Contact Giselle Terzian, Public Works, ([redacted] for more information on this matter.

- There appears to be signage proposed within the right of way at the intersection of Clark and Pacific Coast Highway and potentially Pacific Coast Highway and Anaheim. The applicant shall remove all private signage from the ROW and relocate onto private property.
- A Pre-Development Meeting with Building & Safety is recommended to discuss major issues relating to building and fire code compliance early, so any potential issues can be avoided during the construction documents/plan check stage. Please contact Truong Huynh at [redacted] or truong.huynh@longbeach.gov to schedule.
- Long Beach Energy Resources currently maintains an active gas service line feeding the existing building on the lot that will need to be upsized/renewed if loads increase due to the conversion. See GIS map (attached) for approximate location of the service.
- If additional new gas service or renewal of existing service is needed for the proposed conversion, Long Beach Energy Resources will need to review and approve the location for the meter and buried service line to be installed. Please consider that the routing of the buried gas service line and clearance requirements for meter may impact the design of the development.
- To further review and coordinate the scope and costs involved with the installation of gas facilities, the developer should contact us as soon as possible by calling (562)570-5991 to initiate an investigation with an assigned LBER inspector. The assigned LBER inspector will be the point of contact and will engage additional resources as required depending on project details.

Statutory Comments

Per Section 21.25.503.C of the Zoning Regulations, conclusion of a Conceptual Site Plan Review shall result in a written report to the applicant indicating the following:

- **Whether site plan review will be done by the Site Plan Review Committee or the Planning Commission:** This project will require several entitlements in addition to the Site Plan Review for the Adaptive Reuse request. The Site Plan Review Committee will act upon the adaptive reuse request and any waivers of development standards that are requested.
- **What other entitlements/applications and/or reviews are necessary for the project as submitted:**
    - Conditional Use Permit for the Special Group Residence use for the dormitory - Planning Commission
    - General Plan LUE Amendment/Map changing Commercial (CC) Placetype to Neighborhood Serving Center (NSC-Moderate) – City Council
    - Zoning Map Change from Commercial (C ) to Mixed Use (MU-3) – City Council
    - Building Permits for the change in use of the building.

Please find the response documents received from other departments regarding your project received to date. I will forward any additional response documents as they are received.

This concludes the Conceptual Site Plan Review process. Please do not hesitate to reach out with any questions you might have.

Sincerely,

Gina Casillas
Planner
[redacted]

Attachments: TAC comments
- Police Department
- Public Works
- Gas Department

CITY OF LONG BEACH

**Department of Public Works**
411 West Ocean Boulevard, 5th Floor Long Beach, CA 90802
(562) 570-6383

# TECHNICAL ADVISORY COMMITTEE
# CONDITIONS OF APPROVAL
# ISSUED BY DEPARTMENT OF PUBLIC WORKS

**Date:** November 3, 2022

**To:** Gina Casillas, Planner **Date of TAC Notice:** October 11, 2022

**From:** Giselle Terzian, Civil Engineer, Public Works Project Management

**Subject: 5150 E PACIFIC COAST HIGHWAY – Case No. 2208-19**

The Department of Public Works submits the following requirements for the proposed development referenced in the above subject line. The Developer must comply with all requirements noted below.

## GENERAL REQUIREMENTS

a. Prior to the start of ANY demolition, excavation, or construction, the Developer shall,
   i. Submit a construction plan for pedestrian protection, construction staging, scaffolding and excavations, and
   ii. Submit a traffic control plan with street lane closures and routing of construction vehicles (excavation hauling, concrete and other deliveries, etc.) prepared by a registered Civil or Traffic Engineer in the State of California, with wet seal and signature, and
   iii. Submit a plan for construction area and/or site perimeter fencing with custom printed screen(s),
   iv. All for review and approval by the Department of Public Works and installed in accordance with the latest version of the Public Works Development Guideline.

   Work, including hauling soils or other debris, is not allowed within the right-of-way without a valid Public Works permit. The Developer shall comply with all requirements outlined within the latest version of the Public Works Development Guideline and all referenced standards at the time of application submittal.

b. The Developer may be subject to street restoration requirements if an adjacent street/alley affected by the project is under a street cut moratorium that is active at any point through the completion of construction. Although a street cut moratorium may not be in place at the time of these conditions, one may be in effect at a later date that the project shall adhere to.

The Developer shall provide written approval from the City to implement any street improvements prior to the end of the moratorium, in the form of a discretionary permit for excavation. Any work within a street under moratorium requires a complete grind and overlay from block to block.

c. All proposed refuse and recycling structures and receptacles must be placed entirely on private property, outside of the public right-of-way. The Developer and/ or successors shall be responsible for the cleanliness of the sidewalk/roadway adjacent to the refuse and recycling area and the overall development.

d. Doors and/or gates shall not swing or project into the public right-of-way. All door openings swinging into public rights-of-way shall be eliminated, to the satisfaction of the Director of Public Works.

e. Any proposed signage shall be located entirely on site, on private property, completely out of the public right-of-way. Any signage initially proposed/ in public rights-of-way shall be eliminated, to the satisfaction of the Director of Public Works. Furthermore, any existing signage within the right-of-way that is proposed to remain shall be removed from the right-of-way and relocated onto private property to the satisfaction of the Director of Public Works.

f. All off-site improvements shall provide a minimum of 5 feet clear dedicated right-of-way between any and all obstructions for pedestrian travel purposes compliant with the most recent Americans with Disabilities Act (ADA) standards. All hardscape shall be constructed with Portland cement concrete. All removal limits shall consist of entire panel replacements (from joint line to joint line).

g. The Developer shall construct all off-site improvements needed to provide full ADA accessibility compliance within the adjacent public right-of-way, to the satisfaction of the Director of Public Works. If a dedication of additional right-of-way is necessary to satisfy ADA requirements, as determined during the plan check process, the right-of-way dedication way shall be provided.

h. Public improvements shall be constructed in accordance with Public Works construction standards, and per plans reviewed and approved by the Department of Public Works. Detailed off-site improvement plans shall be prepared by a licensed Civil Engineer, stamped, signed and **submitted to the Public Works counter at the Permit Center on the 2nd Floor of City Hall (411 W. Ocean Blvd., Long Beach, CA 90802)**, for review and approval. The City's Public Works Engineering Standard Plans are available online at www.longbeach.gov/pw/resources/engineering/standard-plans. **This is in addition to, and separate from, any plan check required by the Department of Development Services, Building & Safety Bureau.**

i. All conditions of approval, including cover letter signed by the Planning Officer and Case Planner, must be printed verbatim on all plans submitted for plan review to the Department of Public Works.

## PUBLIC RIGHT-OF-WAY

j. The Developer shall provide easements to the City of Long Beach for any proposed or required public utility facilities, to the satisfaction of the concerned City Department or public agency.

Note: Backflow preventer must be installed on private property and an easement to the City must be processed through an application to the Department of Public Works

k. The Developer shall be responsible for the relocation and/or undergrounding of utilities, right-of-way dedications, quitclaim of easements, and/or any new utility easements required in connection with the proposed development, and removal of any related abandoned facilities or equipment as needed or required; as structures cannot be built within an easement or dedicated area. The Developer shall be responsible for resolving all matters of easement and/or utility encroachment to the satisfaction of the interested agency, City department, and the Director of Public Works.

## OFF-SITE IMPROVEMENTS

l. Pacific Coast Highway is a State highway under the jurisdiction of the California Department of Transportation (Caltrans). A street improvement encroachment permit from (Caltrans) will be required for all work within the Pacific Coast Highway right-of-way. The Developer shall contact Caltrans to request additional information regarding its permitting process and provide a copy of the approved permit and design plans to the Department of Public Works.

m. There appear to be ongoing/future City and Caltrans street improvement projects adjacent to the project site along Anaheim Street and Pacific Coast Highway. As such, Anaheim street may be under a street moratorium when the project construction commences. The Developer shall provide written approval from the City to implement any street improvements prior to the end of the existing moratorium, in the form of a discretionary permit for excavation. Any work within a street under moratorium requires a complete grind and overlay from block to block and the Applicant shall adhere to this requirement. Applicant shall also coordinate with Caltrans regarding any conflict with their proposed improvements along Pacific Coast Highway.

n. The Developer shall reconstruct cracked, deteriorated, or uplifted/depressed sections of sidewalk pavement, curb and curb gutter adjacent to the project site along Clark Avenue, E. Anaheim Street and E. Pacific Coast Highway, to the latest City standards and to the satisfaction of the Director of Public Works. The Developer shall assess the existing sidewalk adjacent to the project site for ADA compliance, and if found to be non-compliant, shall replace the existing sidewalk with a compliant design to the satisfaction of the Director of Public

Works. Sidewalk improvements shall be constructed with Portland cement concrete. All sidewalk removal limits shall consist of entire panel replacements (from joint line to joint line).

o. Developer shall remove any unused driveways and curb cuts along the Project's frontage on Clark Avenue and replace with full height curb, curb gutter and sidewalk pavement to the satisfaction of the Director of Public Works. All sidewalk improvements shall be constructed with Portland cement concrete.

p. Developer shall assess the curb ramps at the intersections of E. Pacific Coast Highway and Clark Avenue, E. Pacific Coast Highway and E. Anaheim Street, and Clark Avenue and E. Anaheim Street for ADA compliance and conformance with the latest City Standards and Caltrans standards. If found to be non-compliant, Developer shall reconstruct a new ADA compliant curb ramp to the latest City or Caltrans standards and to the satisfaction of the Director of Public Works. Sidewalk improvements shall be constructed with Portland cement concrete. If a dedication of additional right-of-way is necessary to satisfy ADA requirements, as determined during the plan check process, the right-of-way dedication way shall be provided.

q. Developer shall check with the Long Beach Water Department at ([redacted] and the Gas and Oil Department at ([redacted] for scheduled main replacement work prior to submitting any improvement plans to the Department of Public Works.

r. Developer shall protect existing street trees and provide for new tree wells and street trees with root barriers on E. Pacific Coast Highway, E. Anaheim Street and Clark Avenue, per Section 21.42.050 of the Long Beach Municipal Code. Any street trees requiring removal shall be relocated or replaced to the satisfaction of the Director of Public Works. Developer and/or successors shall water and maintain all street trees, landscaping and sprinkler systems required in connection with this project. Developer shall contact the Street Tree Division of the Department of Public Works, at [redacted], prior to beginning the tree planting, landscaping, and any irrigation system work. The Street Tree Division will assist with the size, type and manner in which the street trees are to be installed. At a minimum, parkway trees shall provide shade coverage, after five years of growth, of 50% of the total area within the public right of way.

   Note: As the trees along E. Pacific Coast Highway are within Caltrans Right-of-Way, a Landscape Maintenance Agreement and Installation and Maintenance Agreement shall be processed.

s. Developer proposes improvements that may impact existing under- and above-ground utilities through and adjacent to the project site, such as gas lines, street light conduits and utility poles and overhead lines, and along the perimeter streets adjacent to the project site. The Developer shall be responsible for all design, applicable utility approval, permitting, relocation

work, easements relocation and commissioning as required by the interested agency and shall work with each utility directly.

t. Developer shall be responsible for the maintenance, repair and replacement of off-site improvements abutting the project boundary during construction of the on-site improvements, until final inspection of the on-site improvements by the City. All off-site improvements adjacent to the development site, and/or along the truck delivery route found damaged as a result of construction activities, shall be reconstructed or replaced by the Developer, to the satisfaction of the Director of Public Works.

u. Developer shall provide for the resetting to grade of existing manholes, pull boxes, and meters in conjunction with the required off-site improvements, to the satisfaction of the Director of Public Works.

v. Developer shall install Custom Printed Flex Mesh screen(s), such as FenceScreen.com Series 311, or equivalent, fence screening along the perimeter of the development site, and provide for the printed graphic, to the satisfaction of the Director of Public Works. The Developer shall consult with Public Works prior to submitting the graphic design for printing.

w. Developer shall submit a grading plan with hydrology and hydraulic calculations showing building elevations and drainage pattern and slopes, for review by the Director of Planning and Building Services and the Director of Public Works, prior to approval of the map and/or release of any building permit.

x. Developer shall submit a drainage plan for approval by Public Works prior to issuance of a building permit.

y. Prior to approving an engineering plan, all projects greater than 1 acre in size must demonstrate coverage under the State Construction General NPDES Permit. To meet this requirement, the Developer must submit a copy of the letter from the State Water Resource Control Board acknowledging receipt of the Notice of Intent (NOI) and a certification from the developer or engineer that a Storm Water Pollution Prevention Plan (SWPPP) has been prepared. Should you have any questions regarding the State Construction General NPDES Permit or wish to obtain an application, please call the State Regional Board Office at (213) 576-6600 or visit their website for complete instructions at www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml. Left-click on the Construction General Permit Order 2009-0009-DWQ link.

## TRAFFIC AND TRANSPORTATION

z. A traffic impact analysis must be prepared for this project, under the supervision and approval of a registered Traffic Engineer in the State of California (Engineer's stamp required) and submitted for review prior to issuance of a building permit. In addition, any physical street improvements must include a scaled drawing stamped by a registered Civil Engineer in the

State of California. Any conditions generated by the analysis shall be made a part of these conditions.

aa. The Developer shall be responsible to improve certain traffic signal related equipment to current CA MUTCD and/or City of Long Beach Standards. The traffic signal related equipment shall be within the signalized intersection of E Pacific Coast Highway and E Anaheim Street and E Pacific Coast Highway and Clark Avenue, directly impacted by the Developer's project. If not existing, the Traffic Signal related equipment shall include, but may not be limited to the following:
    i. All 8" Traffic Signal indications shall be updated to 12" LED units.
    ii. Vehicular detection shall be installed on all approaches to the signalized intersection. This may include presence, mid or advance detection per City direction. Options will include standard Type E loops or video detection.
    iii. All pedestrian indications shall be upgraded to LED Countdown Modules within all pedestrian crossings.
    iv. All pedestrian push buttons shall be upgraded to the most current City Standard.
    v. All signalized intersections will require the installation of Emergency Vehicle Pre-Emption (EVPE) equipment. The equipment and installation must be completed per the most current City Standard.
    vi. Because of the fact that so many City of Long Beach traffic signals operate and share coordinated signal timing plans, the developer shall install a GPS Module at all traffic signals that are directly impacted by their project. The GPS Modules create accurate time-based communications between nearby traffic signals.
    vii. The developer may be asked to update the traffic signal controller located in the traffic signal cabinet. At the discretion of the City Traffic Engineer, it may be decided that the existing traffic signal controller does not have the capability to handle the complexities of new traffic patterns that are directly related to the Developer's project. In such cases, the developer will be asked to install a new traffic signal controller based on the most current City Standard.

bb. There is a high-volume Long Beach Transit bus stop on E Anaheim Street and E Pacific Coast Highway adjacent to the development site. Developer shall incorporate enhancements to improve the bus stop into this project. Bus stop amenities such as roof overhang for additional shelter and architectural seating for bus patrons shall be integrated into the project. Enhanced 12-foot-wide sidewalk paving shall be provided per Long Beach Transit standards. The Developer shall collaborate with Long Beach Transit and the City's Public Works Department to implement this condition.

cc. Developer shall contact Long Beach Transit prior to commencement of work to coordinate design and construction issues and to ensure that construction does not interfere with transit bus operations at the existing bus stop on Anaheim Street. Contact Christopher MacKechnie at ([redacted].

dd. The size and configuration of all proposed driveways serving the project site shall be subject to review and approval of the City Traffic Engineer. Driveways greater than 28 feet in width

require a variance; contact the Transportation Mobility Bureau, at [redacted], to request additional information regarding driveway construction requirements.

ee. Developer shall upgrade all existing crosswalks at the intersection of E Pacific Coast Highway and Anaheim Street and E Pacific Coast Highway and Clark Avenue adjacent to the project site to thermoplastic continental crosswalks and install all new crosswalks per the most current City standard and to the satisfaction of the City Traffic Engineer.

ff. Developer shall coordinate with the Transportation Mobility Bureau to design and construct a crossing refuge median on Anaheim Street to the satisfaction of the Director of Public Works at the Developer's expense.

gg. The Developer shall salvage and reinstall all traffic signs that require temporary removal to accommodate new construction within the public right-of-way. All traffic signs shall be reinstalled to the satisfaction of the City Traffic Engineer

hh. The Developer shall replace all traffic signs and mounting poles damaged or misplaced as result of construction activities to the satisfaction of the City Traffic Engineer.

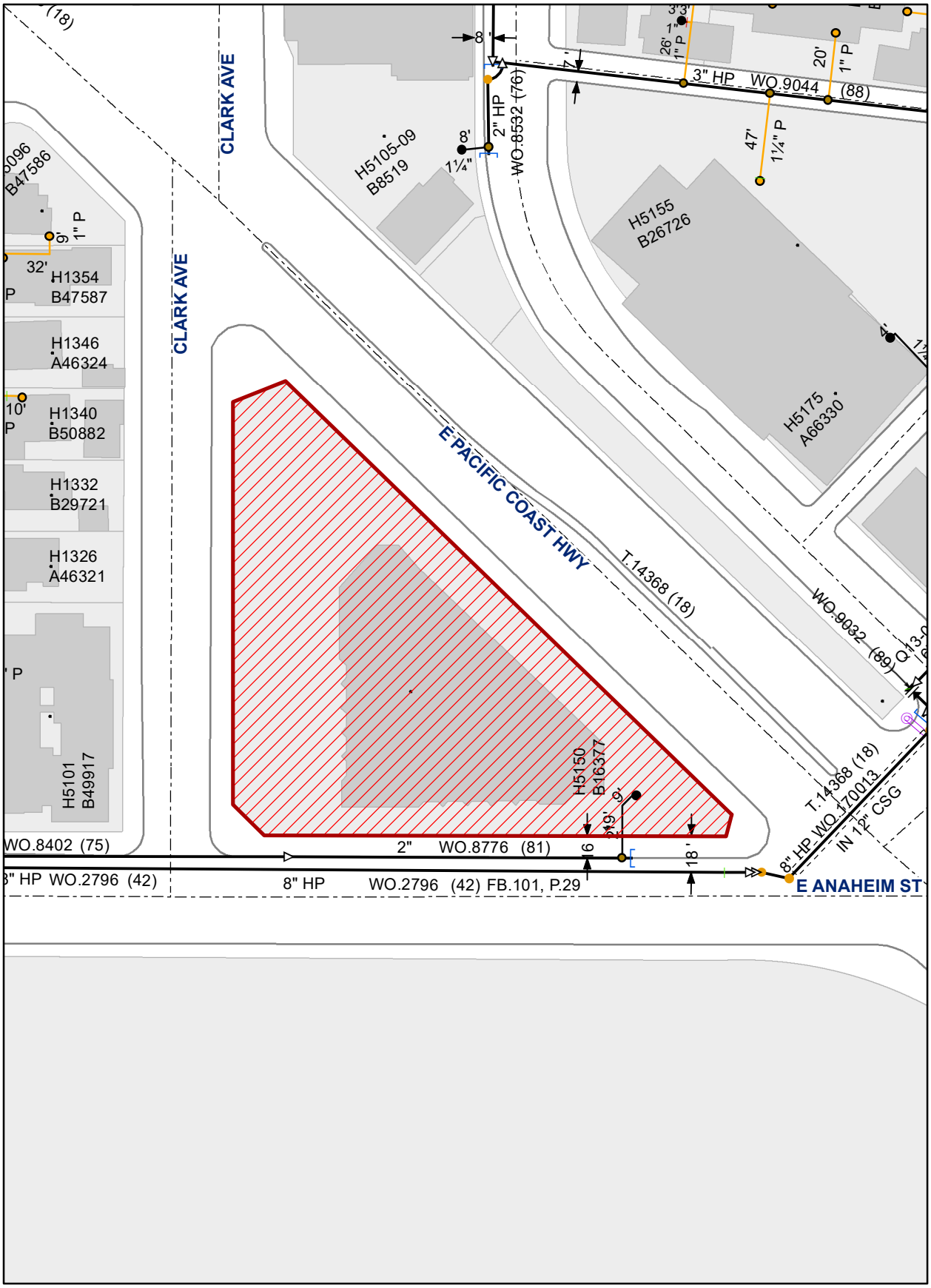
ii. The Developer shall repaint all traffic markings obliterated or defaced by construction activities to the satisfaction of the City Traffic Engineer.

jj. The Developer shall contact the Traffic & Transportation Bureau, at ([redacted], to modify any existing curb marking zones adjacent to the project site.

kk. All traffic control device installations, shall be installed in accordance with the provisions of the Manual on Uniform Traffic Control Devices (MUTCD), 2012 or current edition (i.e. white parking stalls, stop signs, entry treatment signage, handicapped signage, etc.).

ll. All bike racks and bike rack placement must follow the guidance in "Essentials of Bike Parking" by the Association of Pedestrian and Bicycle Professionals.

BP:PV:DT:gt


CLARK AVE
CLARK AVE
E PACIFIC COAST HWY
E ANAHEIM ST
H5105-09
B8519
H5155
B26726
H5175
A66330
H1354
B47587
H1346
A46324
H1340
B50882
H1332
B29721
H1326
A46321
H5101
B49917
H5150
B16377
3" HP WO.9044 (88)
2" HP
WO.8532 (76)
T.14368 (18)
WO.9032 (89)
T.14368 (18)
8" HP WO.170013
IN 12" CSG
WO.8402 (75)
2" WO.8776 (81)
8" HP WO.2796 (42) FB.101, P.29
N

# CUSTOMER GUIDELINES FOR NEW GAS SERVICE INSTALLATION (SMALL OR MINOR PROJECTS)

- Customer shall contact the Utility Billing Services Division at (562) 570-5991 and provide the property address that needs new gas service. Customer shall request that the City of Long Beach, Energy Resources (LBER) Inspection Division perform an investigation.

- If gas pressure requirements are greater than standard delivery pressure (7" of water column), an approval for elevated gas pressure by Long Beach Energy Resources Engineering is required. Contact LBER Engineering at Development Engineer at (562) 570-2064.

- Plumbing permits are required prior to the installation of a natural gas meter when installing: a new house-line gas piping, new or replacement hot water heater/forced air heater, wall heaters, boilers, replacement of an existing service line over six feet in length, a request for a delivery pressure change, etc. Customer should request plumbing permit for installation of customer gas house-line in the appropriate city (Long Beach or Signal Hill) by contacting:
  - City of Long Beach Development Services at (562) 570-6105 (plumbing permit) or (562) 570-6551 (gas pressure tests)
  - City of Signal Hill, Community Development at (562) 989-7348

- Be available to schedule onsite visit with assigned LBER Inspector to size the meter, approve meter location, and layout initial buried service line routing.

- Fill out and complete the "Consumer Gas Load Information" form (for each meter) by:
  - Listing all EXISTING gas operated equipment and/or appliances.
    - Locate the manufacturer tag on your equipment, look for "input BTU" usage, and write this number on the form. If the tag is difficult to locate or it may no longer exist, contact the manufacturer, plumbing engineer, or LBER Inspection at (562) 570-2085 to assist with estimating the BTU's.
  - Listing all NEW gas operated equipment and/or appliances.

  The total of NEW and EXISTING equipment and appliances will be used to determine the size of our gas meter that will deliver a sufficient volume of flow to allow equipment to operate at maximum efficiency.
  - Return completed form to your LBER Inspector for review.

- An "Inspection Report" may be left as a guide to assist you with requests from your LBER Inspector. Customer should go through the report and address the emphasized concerns.

- If there is a fee involved, LBER will provide a "Signature Card" to be completed. The Office Copy (white) must be returned to the assigned LBER Inspector. The Customer Copy (yellow) is to be retained by the

customer as a reference for the work being authorized. The fee will be calculated by the Inspector and a payment will be required prior to the work being scheduled by LBER. There are two options for payment:

1. Return the completed Office Copy to the assigned LBER Inspector and a bill will be created and sent by Utility Billing Services Division to the address written on the form. Payment can be made via check or phone with an ATM card, Mastercard, or Visa.
2. Return the completed Office Copy along with a check for the total amount made payable to "City of Long Beach" to the assigned LBER Inspector. This option will help expedite the process.

- ❑ Complete financial review process, confirm all fees have been paid, and inspection report requirements have been met including receipt of Plumbing Permit approval (Plumbing Release) from City of Long Beach, Development Services Department Inspector.

- ❑ LBER Inspection will prepare and forward the paperwork to the LBER Construction Division. LBER Construction will schedule to perform the gas service line installation work into the existing workload.

- ❑ Customer to schedule gas meter setting and pilot lighting through LBER Utility Billing Services at (562) 570-5991.

* Note: This checklist typically applies to small or minor projects that generally do not need engineered plans and require simple or no modifications of the gas service line and meter. Otherwise, LBER recommends to schedule a Pre-Application Conference for major projects to review specific gas needs and coordination for such projects including:

  - Subdivisions requiring extension of gas service
  - Vacations that contain facilities and pipelines
  - Multiple commercial or residential units with multiple meter locations proposed
  - Multi-story projects
  - Commercial uses with high demand and/or pressures
  - Projects proposing meter rooms
  - Extension of existing gas mains

For such major projects, in addition to scheduling a pre-application conference, please refer to the LBER developer guidebook for further guidance on new gas service process.

DEPARTMENT OF DEVELOPMENT SERVICES | PLANNING BUREAU

# IN LIEU OF TECHNICAL ADVISORY COMMITTEE

City Hall, 411 W. Ocean Blvd., 3rd Floor, Long Beach, CA 90802

This notice is routed to you *in lieu* of convening a full Technical Advisory Committee (TAC) meeting. Based on the project description below and the attached plans, please provide your comments, concerns, and any conditions of approval you wish to be included, per your department's standards and regulations, to the project planner listed below. Your timely response will help this project move through the entitlement process expeditiously, while ensuring that your department's concerns are addressed and standards and regulations are met. Thank you.

| **Project Address/Location:**<br>5150 E Pacific Coast Highway | **Application No.:**<br>2208-43 (CSPR22-010) |
|---|---|
| **Existing Conditions at site:**<br>The project site is located on a triangular shaped lot which is boarded by three streets; Pacific Coast Highway, Anaheim Street and Clark Avenue. The site is developed with a seven-story office building with surface and subterranean parking. | |
| **Project Description:**<br>A Conceptual Site Plan Review for the Adaptive Reuse of an existing seven-story office building to be converted into student housing that includes 149 dorm rooms with supporting assembly/office uses, dining, fitness and administration space located at 5150 E. Pacific Coast Highway in the CCA Zoning District. The project includes a General Plan Amendment from Community Commercial (CC) to the NSC-M Placetype and a Zone Change from CCA (HR) to either of the MU-1, MU-2, or the MU-3 Zoning Districts to allow the use and density for the proposed use. | |
| **Permits Requested:**<br>Conceptual Site Plan Review | |
| **Applicant/Agent:**<br>Burnham Development, Derek Burnham | **Phone No.:**<br>[redacted] |
| **Mailing Address:**<br>130 Pine Ave, Suite 200<br>Long Beach, CA 90802 | **Email Address:**<br>derek@burnhamdevelopment.com |

| **Staff Planner:**<br>Gina Casillas | **Phone:**<br>[redacted] | **Email:**<br>Gina.casillas@longbeach.gov |
|---|---|---|
| **Application submittal date:**<br>9/8/2022 | **TAC In-Lieu routing date:**<br>10/11/2022 | **Return comments by:**<br>October 31, 2022 |

Attachments: Project plans attached via email in pdf format

**EXHIBIT T**

ENVIRONMENTAL DUE DILIGENCE | ENVIRONMENTAL ENGINEERING & CONSTRUCTION

# How Long is a Phase 1 Environmental Assessment Good For?

## How Long is a Phase 1 Environmental Assessment Good For?

A Phase 1 Environmental Assessment is good for one year in most cases. However, expiration also depends on the purpose of the report, and events that take place on the property. For instance, changing industry standards, new environmental conditions, and the CERCLA statutes of limitations can make a Phase 1 ESA obsolete in less time. Updated April 9, 2024.

## Updating a Phase I Environmental Site Assessment

Redoing a Phase 1 ESA after expiration is an option. However, updating a recent Phase 1 ESA can be a faster and more affordable strategy. At a minimum, updating a Phase 1 ESA comprises re-ordering any potential obsolete components of the assessment, reviewing them in detail, and performing another site inspection. Ultimately, the environmental professionals prepare a new draft that utilizes the non-obsolete resources from before, as well as the new information.

## SBA One-Year Expiration Date

The Small Business Administration internally maintains its own "SBA environmental procedures and policies for lenders." Accordingly, if a loan is securable with commercial real estate, some level of limited environmental due diligence is necessary. Secondly, if the property use is "environmentally sensitive," the Phase I Environmental Site Assessment process must commence. Otherwise, applicants may proceed with just an environmental questionnaire. Above all, the SBA only accepts Phase I Environmental Site Assessment reports within one year of the production date.

## Liability Protection Expiration

Under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), a compliant Phase 1 ESA can provide innocent landowner liability assistance. This benefit applies to qualifying report users with ASTM-compliant Phase 1 ESA reports. However, CERCLA liability protection expires after 180 days. For legal advice about Phase 1 ESA liability protection via CERCLA, Geo Forward recommends report users contact an environmental attorney.

## Expiration Due to Land-Use Conditions

In some cases, the existing and ongoing land use of property poses a recognized environmental condition (REC). Even after the closure of an ESA report. For instance, a gasoline service station can have continuously operating underground storage tanks (USTs) with the potential to leak at any time. Although the soil may have been tested during a recent Phase 2 Environmental Site Assessment, it is possible that a release may occur after the assessment. As a result, the validity of an environmental site assessment report at active gas stations does have stricter limitations.

## Expiration by Standards & Screening Level Updates

The ASTM standards for a Phase 1 Environmental Site Assessment are periodically subject to updates. Consequently, changes to the international standards render all prior reports obsolete. Similarly, subsurface contaminant screening levels are also subject to change. Upon any update of State or Federal environmental regulations, the conclusions and recommendations of all prior Phase 1 ESAs become obsolete.

## How Long is a Phase 1 Environmental Report Good For Overall?

Determining how long is a Phase 1 ESA is good for will ultimately depend on the purpose of the report and events that take place on the property. For instance, a Phase 1 ESA for Small Business Administration loans expires after one year. But, the CERCLA Liability Protections can actually expire within 180 days.

As of 2021, the typical use for a Phase 1 Environmental Site Assessment is valid for about one year. Although a Phase 1 Environmental Site Assessment shelf life can also vary depending on periodic updates to the ASTM standards and regulatory screening levels. As a result, such changes may cause a Phase 1 Environmental Site Assessment to expire immediately, due to compromised "All Appropriate Inquiries."

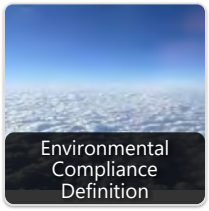
### Related Posts:
















#ASTM #Phase 1 Environmental #Phase 1 Environmental Site Assessment #Phase 1 ESA #Phase 2 Environmental Site Assessment #Phase 2 ESA #Phase 2 Testing #REC #SBA

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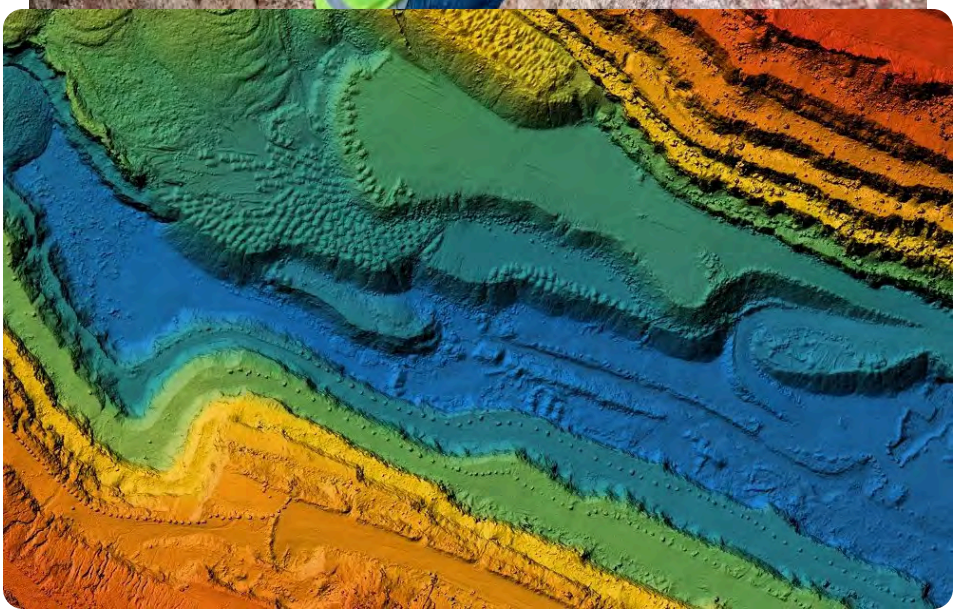
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**EXHIBIT U**

# Real Estate Land Use Conversions - Environmental Considerations - LACBA Events






## Real Estate Land Use Conversions - Environmental Considerations

**Registration**

**Event:**
Fri, January 31, 2025
12:00 PM - 1:00 PM PT

Register Now

**Details**

LACBA

LOS ANGELES COUNTY BAR ASSOCIATION

**Presented by:**
Environmental Section

**Program Title:**
Real Estate Land Use Conversions- Environmental Considerations

**Program Date:**
Friday, January 31, 2025

**Time:**
12:00 – 1:00 p.m.

**CLE Credit:**
1 hr. General CLE Credit
**Note: CLE Certificates will be emailed 7-10 business days after the webinar**

**Program Description:**
In the current real estate market, we are seeing many existing commercial properties being evaluated under alternative redevelopment options including residential or community uses. Along with the challenges of local permitting and entitlement processes, there are sometimes overlooked elements such as the need to take a closer look at the site conditions from an environmental standpoint. As an example, there may be land use covenants that need to be amended or removed; clients may have a series of "clean" Phase I reports and not realize that those reports did not sufficiently consider a potential residential land use, particularly in the current vapor intrusion regulatory atmosphere; there may be additional investigation/remediation work necessary to enable a change in land use. Join us for this informative webinar to learn more about current environmental considerations in land use.

**Speakers:**
Emily Murray | Allen Matkins Leck Gamble Mallory & Natsis LLP
Alexis Hillman | Ramboll
Tara Paul | Allen Matkins Leck Gamble Mallory & Natsis LLP

**Prices:**

| | |
|---|---|
| Law Students | Free |
| CLE + Members | Free |
| Environmental Section Members | $35.00 |
| LACBA Members | $45.00 |

| | |
|---|---|
| All Others | $55.00 |

**Important Information:**

Once you have completed your LACBA registration, on the date of the event you will receive a link from Zoom 2 hours before the event that will allow you to join the webinar directly. In order to receive participatory CLE credit, registrants must participate in the webinar via Zoom. LACBA cannot provide CLE credit to those who only listen to the program audio by phone. Individuals wishing to receive CLE credit must register independently.

Please log in to Zoom at least 10 minutes before the program time. You will receive a certificate of attendance via email in 7-10 business days.

*Law Students must call LACBA Member Services Department at 213-896-6560 to register.

*If you wish to register after registration closes please contact Member Services Department at 213-896-6560.

The LACBA online event registration system supports registration for individual event participants 24 hours a day, seven days a week. For assistance with group/multiple registrations, or if you'd simply prefer to register by phone (with Visa, MasterCard or American Express), please call LACBA's Member Services Department at (213) 896-6560 any time from 9:00 a.m. to 4:30 p.m. Monday through Friday. If you have questions about programs or program registration, you're also welcome to contact Member Services by e-mail at: msd@lacba.org. **Full refunds issued only for registrations which are cancelled 48 hours in advance.**

*The Los Angeles County Bar Association is a State Bar of California MCLE approved provider. If this is a CLE event, the Los Angeles County Bar Association certifies that this activity has been approved for MCLE credit. CLE events will state the amount and type of credit offered in the calendar listing.*

## Location

**Zoom -**

## Registration

**Event:**

Fri, January 31, 2025

12:00 PM - 1:00 PM PT

Register Now

## Event Rates

$35.00 Environmental Law Section Members

$45.00 LACBA Members

$55.00 All Others

## Tell a Colleague!

## Add to My Calendar

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*Reminder: Adding to your calendar does not register you for the event.*

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- Join or Renew Membership

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- LACBA News
- Los Angeles Lawyer
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- 2024 Expert Witness Print Directory
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- Annual Report
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# Calendar

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**EXHIBIT V**

## Gina Casillas

**From:** Derek Burnham <derek@burnhamdevelopment.com>
**Sent:** Wednesday, October 26, 2022 3:51 PM
**To:** Gina Casillas
**Cc:** Ford Do
**Subject:** Re: 5150 Pacific Coast Hwy - CSPR

**-EXTERNAL-**

Gina,

Thanks for the update. Let me know if we can find a time next week to discuss in more detail. I'm particularly curious about the adaptive reuse discussion. Also, if you have an ETA for the comment letter, it would be helpful to know so we can manage expectations of the ownership.

Thanks.


**Derek Burnham**
Principal, Burnham Planning & Development
p:562.354.1430 | m:[redacted] | e:derek@burnhamdevelopment.com | w:burnhamdevelopme


Sent from my iPad

On Oct 26, 2022, at 2:30 PM, Gina Casillas <Gina.Casillas@longbeach.gov> wrote:

Hello Derek and Ford

I presented the project to the Site Plan Review Committee today. In general the Committee was supportive of the change of use. I did receive several comments from other departments related to the change of use request. My next step is to consolidate all of the comments together. One item that still needs to be vetted is whether there is a need for a Zone Change requirement when using the Adaptive Reuse code.


**Gina Casillas**
*Planner*

**Long Beach Development Services | Planning Bureau**
**T** 562.570.6879 **F** 562.570.6068
411 West Ocean Blvd., 3rd Floor | Long Beach, CA 90802
Gina.Casillas@longbeach.gov | www.longbeach.gov

**From:** Derek Burnham <derek@burnhamdevelopment.com>
**Sent:** Friday, October 21, 2022 9:19 AM
**To:** Gina Casillas <Gina.Casillas@longbeach.gov>
**Cc:** Ford Do <ford@burnhamdevelopment.com>
**Subject:** Re: 5150 Pacific Coast Hwy - CSPR

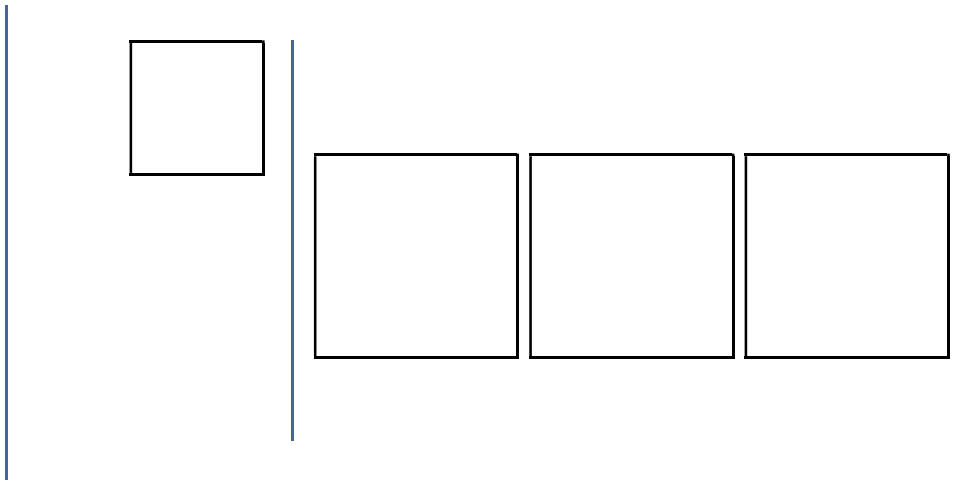
**-EXTERNAL-**

Gina,

This would be operated by a private student housing group. We have reached out to CSULB and they are supportive, but at this point there is no formal relationship between CSULB and our group.

Let me know if you have any other questions.

Thanks.



**Gina Casillas**
*Planner*

**Long Beach Development Services | Planning Bureau**
**T** 562.570.6879 **F** 562.570.6068
411 West Ocean Blvd., 3rd Floor | Long Beach, CA 90802
Gina.Casillas@longbeach.gov | www.longbeach.gov




**From:** Derek Burnham <derek@burnhamdevelopment.com>
**Sent:** Thursday, October 20, 2022 3:37 PM
**To:** Gina Casillas <Gina.Casillas@longbeach.gov>
**Cc:** Ford Do <ford@burnhamdevelopment.com>
**Subject:** Re: 5150 Pacific Coast Hwy - CSPR

**-EXTERNAL-**

Gina,

We're proposing 100% common open space. I believe the 50 sf note in the table is referencing a requirement vs what is being proposed. The configuration of the building does not allow for balconies or other private open spaces.

Let me know if you have any other questions. Thanks.

Bear with me on this - I am sorry to piecemeal the questions to you one by one. I am working on my presentation and I am going through each standard one by one. .

Where is the private open space located? The table indicates 50 sf of private.

**Gina Casillas**

*Planner*

**Long Beach Development Services | Planning Bureau**

**T** 562.570.6879 **F** 562.570.6068
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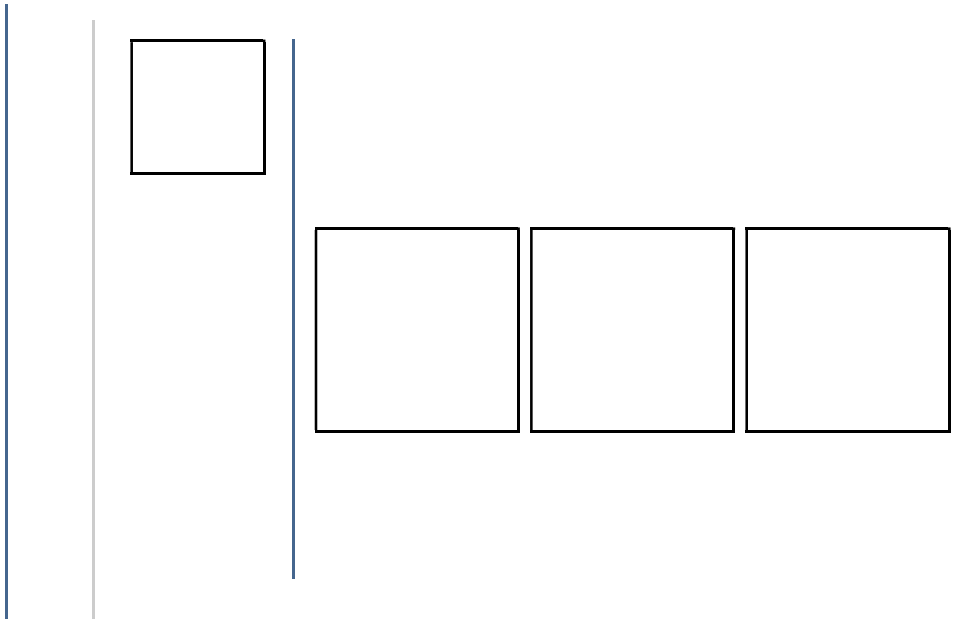
**From:** Derek Burnham <derek@burnhamdevelopment.com>
**Sent:** Thursday, October 20, 2022 10:57 AM
**To:** Gina Casillas <Gina.Casillas@longbeach.gov>
**Cc:** Ford Do <ford@burnhamdevelopment.com>
**Subject:** Re: 5150 Pacific Coast Hwy - CSPR

**-EXTERNAL-**

Gina,

In addition to the 17 surface being removed, there will be a net loss of 35 parking spaces in the underground structure. Regarding parking, we would also like the City to opine on whether/how AB 2097 would apply to the project. This bill will go into effect in January and may offer some relief from parking requirements for the project.

Thanks, Gina.



*Planner*

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**EXHIBIT W**

## Gina Casillas

**From:** Gina Casillas
**Sent:** Thursday, November 3, 2022 1:28 PM
**To:** Alejandro Sanchez-Lopez; Alexis Oropeza
**Subject:** 5150 E Pacific Coast Hwy - 2208-43 (CSPR22-012)

Hello Alejandro and Alexis

My project addressed as 5150 E Pacific Coast Hwy went to SPRC last week. I am working on my CSPR response letter to Derek. We left off with a few issues that needed to be discussed/addressed:

1. The project site is eligible for AB2097 under the 2016 SCAG map, but not LBTransit map. Have we had a determinate on which map we will use for the parking exemption allowance?
2. The project includes Adaptive Reuse request to address code deficiencies (open space, parking, density). A determination whether there a need for the Zone Change to MU-3 if they are requesting approval for the adaptive reuse?

Can we discuss these issues in the near future?

**Gina Casillas**
*Planner*

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# LETTER 6

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Pasadena, California 91101

**VIA E-MAIL**

March 11, 2025

Gina Casillas, Planner
City of Long Beach Development Services, Planning Bureau
411 West Ocean Boulevard, Third Floor
Long Beach, CA 90802
Email: LBDS-EIR-Comments@LongBeach.gov
Tel.: (562) 570-6879

**RE: Supplemental Comment on the Draft Environmental Impact Report of Park Tower Student Housing Project of the City of Long Beach (5150 E. Pacific Coast Highway, Long Beach, California; APN 7220-018-009; SCH Number 2024080441)**

Dear Ms. Casillas:

On behalf of the Western States Regional Council of Carpenters ("**Western Carpenters**" or "**WSRCC**"), my Office is submitting these *Supplemental* comments on the Draft Environmental Impact Report ("**Draft EIR**") of the Park Tower Student Housing Project ("**Project**") of the City of Long Beach ("**City**"), proposed at 5150 E. Pacific Coast Highway, Long Beach, CA ("**Project Site**").

The Western Carpenters is a labor union representing almost 90,000 union carpenters in 12 states, including California, and has a strong interest in well-ordered land use planning and in addressing the environmental impacts of development projects.

According to the Notice of Availability ("**NOA**") of the Project's Draft EIR:

> "The Project will adaptively **reuse** an **existing seven**-story **office** building with **three levels** of subterranean **parking** located at 5150 Pacific Coast Highway in the City of Long Beach (City), California. The existing office building is approximately **120,000 square feet** (sf), of which **109,600 sf** is **currently leased**. The Project would involve the **adaptive reuse** of the existing building into a **private dormitory** (**housing** for **students**) with **149 student** residential **suites** (**593 beds**). The Project is proposing a **General Plan Amendment** from the current **Community Commercial**

> (CC) **Placetype** to the **Neighborhood Serving Center** (NSC-Moderate) Placetype, which would **permit residential** uses. The Project would also require a **Zoning Code Amendment/Map Change** to change the existing zone **from Community Commercial Automobile Oriented** (CCA) to **Mixed-Use** (MU 3) to allow for the Project's **student** residential uses and to **enable** the Project to take advantage of the adaptive **reuse development** standards. The Project would also require the **approval** of a **Conditional Use Permit** (CUP) to allow the "**Special Group Residence**" and **Site Plan review** of adaptive reuse."

(NOA, emph. added.)

The Project's above-mentioned description, as well as state agency comments confirm that the Project may have significant impacts, including transportation, related air quality, greenhouse gas emissions, noise, and hazards impacts on highways and freeways, which need to be addressed. Hence, it is of utmost importance that the Project be implemented by *skilled contractors* to minimize the construction impacts and hazards to the surrounding environment from the Project.

Individual members of the Western Carpenters live, work, and recreate in the City and surrounding communities and would be directly affected by the Project's environmental impacts.

The Western Carpenters expressly reserves the right to supplement these comments at or prior to hearings on the Project, and at any later hearing and proceeding related to this Project. (Gov. Code, § 65009, subd. (b); Pub. Res. Code, § 21177, subd. (a); see *Bakersfield Citizens for Local Control v. Bakersfield* (2004) 124 Cal.App.4th 1184, 1199-1203; see also, *Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal.App.4th 1109, 1121.)

The Western Carpenters incorporates by reference all comments raising issues regarding the Environmental Impact Report (EIR) submitted prior to certification of the EIR for the Project and approval of the Project. See *Citizens for Clean Energy v City of Woodland* (2014) 225 Cal.App.4th 173, 191 (finding that any party who has objected to the project's environmental documentation may assert any issue timely raised by other parties).

Moreover, the Western Carpenters requests that the City **provide advance notice** for any and all notices referring or related to the Project issued under the California Environmental Quality Act (**CEQA**) (Pub. Res. Code, § 21000 *et seq.*), and the

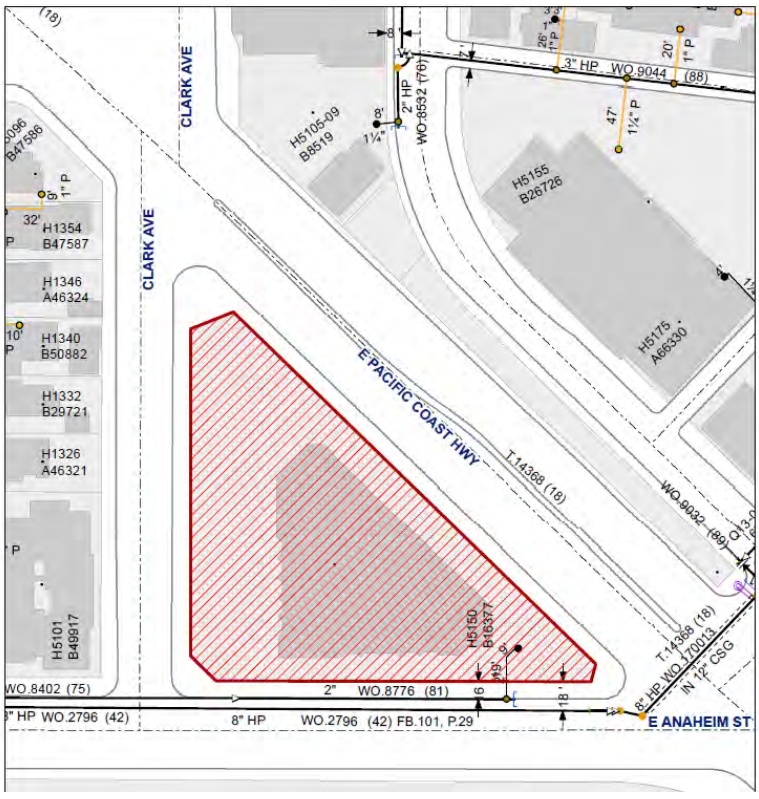
California Planning and Zoning Law ("**Planning and Zoning Law**") (Gov. Code, §§ 65000–65010). California Public Resources Code Sections 21092.2, and 21167(f) and California Government Code Section 65092 require agencies to mail such notices to any person who has filed a written request for them with the clerk of the agency's governing body.

## I. THE CITY'S EXTENSION OF THE COMMENT PERIOD AS REQUESTED BY WSRCC IS MUCH APPRECIATED

As an initial matter, WSRCC appreciates the City's extending of the comment period to comply with CEQA, as previously requested by the Western Carpenters on January 23, 2025. This extension provided us – and we believe others as well – an opportunity to have a meaningful review of the EIR and all of its later uploaded studies and materials supporting the EIR and to provide an informed and meaningful input.

## II. THE DEIR FAILS TO CONSIDER THE AIR QUALITY AND HUMAN HEALTH AND SAFETY IMPACTS OF THE PROJECT IN LIGHT OF ITS PROXIMITY TO PACIFIC COAST HIGHWAY

The Project is located next to the Pacific Coast Highway and it is also bordered by other streets, as shown below:



According to the California Environmental Agency's Air Resources Board ("CARB")'s Technical Advisory:

> **Street**, **highway**, and **freeway ramp intersections** have been found to be **pollution hot spots**. This is mainly due to frequent deceleration and acceleration and the increased frequency and duration of idling at intersections. As a result, intersection **alternatives** that **reduce** the **frequency** of **stops**, **acceleration**, and **idling** can generally **benefit air quality** at and around intersections.

(**Exhibit 1,** p. 20, emph. added [CARB's Technical Advisory re "Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways"].)[1]

CARB's Technical Advisory further reminds and provides its related findings and recommendations from 2005 on impacts of siting residential structures within 500 feet of freeways, urban roads, or rural roads, as follows:

> The 2005 Land Use Handbook recommends that health protective distances (**500 feet at minimum**, if there is no site-specific information available) be implemented to **separate sensitive** uses from **freeways**, **urban roads** with **100,000 vehicles/day**, or **rural roads** with **50,000** vehicles/day.*19 This recommendation is based on research showing that pollutant concentrations decline significantly as you move farther away from pollution sources, including freeways and **other busy traffic corridors** [13-15] and epidemiological studies that indicate that **spending time** in **proximity** to **traffic emissions sources** may lead to **adverse health** effects **beyond** those associated with **regional air** pollution in **urban areas** [16-21].

(**Exhibit 1**, p. 12, emph. added.)

And CARB's Technical Advisory informs of *additional* research that has occurred since 2005 and found that the previously suggested 500 feet buffer was understated and needs to increase to 1,000 feet to duly protect people. (**Exhibit 1,** pp. 12-14.) As part of the new findings and recommendations, therefore, CARB suggests other means to address the air pollution issues and reduce impacts on human beings, as follows:

> These recent studies highlight the importance of protecting at-risk populations/communities from traffic emissions and indicate that **exposure reduction strategies** may be needed to protect people that live and spend time in environments that are more than 500 feet from high

[1] Also available at: https://ww2.arb.ca.gov/sites/default/files/2017-10/rd_technical_advisory_final.pdf

> volume roadways. This does **not mean** that **nothing** should be **developed within this distance**. In fact, as previously discussed, a compact development pattern is a key strategy in reducing **GHG** emissions and improving **public health** through physical activity and it has many other benefits. Instead, **planners** and **developers** may want to consider **siting non-sensitive uses** and **developments** that will be **primarily used** and **occupied** during the **daytime**—such as **commercial uses** and **offices**. In addition to optimizing land use when near-roadway pollution concentrations drop off more sharply with distance, **commercial** and **office buildings** are often equipped with **indoor filtration systems** that can remove particulates from the air inhaled by building occupants, and these buildings are more likely to have **permanently closed** or **sealed windows**. This means that, when these buildings are sited close to roads, people that spend time in them are less likely to breathe harmful pollutants and experience negative health impacts. Plus, people typically spend less time at work than at home, meaning that the duration of exposure at work is shorter. These approaches, along with strategies to reduce traffic emissions, disperse pollution and clean indoor air—all discussed in this Technical Advisory—will reduce exposure.
>
> (**Exhibit 1,** p. 14, emph. added.)

CARB's advisory is precisely on point here. The Project here borders Pacific Coast Highway, which statistically sees on average 100,000 cars in the City of Long Beach, CA. (**Exhibit 4** [7th & PCH intersection; 2nd & PCH intersection].)

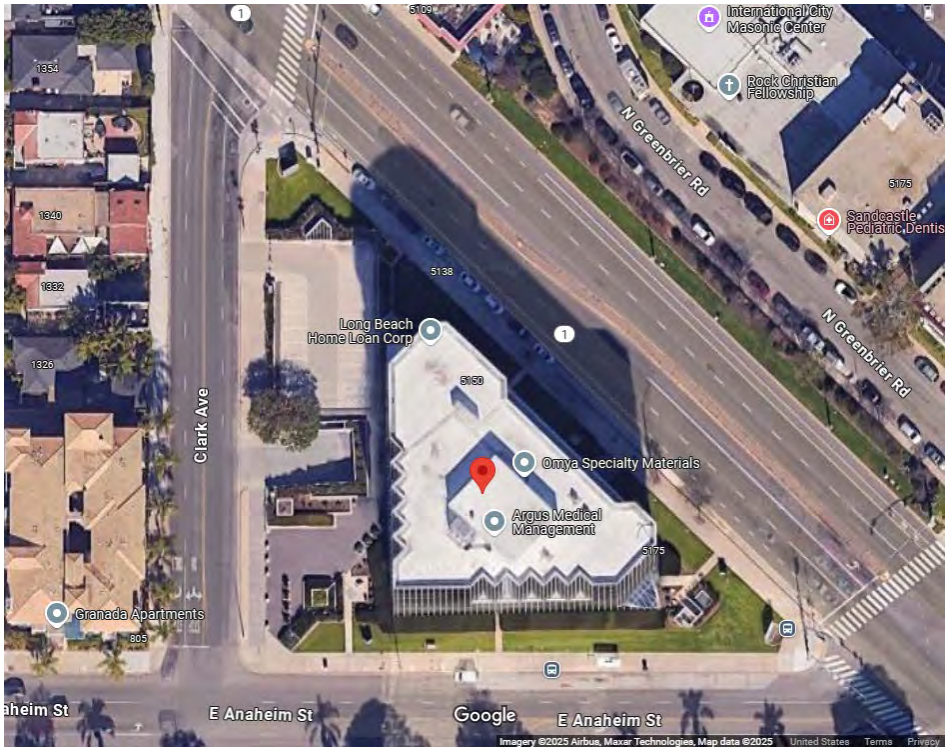
Further, the Project site is currently occupied by *commercial* uses where people do not live but attend for business purposes during the day and for short periods of time. (DEIR, p. 6-8.) In contrast, the Project proposes to bring 593 students who will reside at the Project site during school year.

Moreover, the Project proposes a pool (#10), outdoor daybeds (#12), and other outdoor amenities (as #11) that are directly adjacent to the Pacific Coast Highway, as shown in the screenshot of the Project's conceptual plan from the DEIR below:




(DEIR, p. 2-16.)

In contrast, the Project Site's Google bird view image shows *no outdoor* amenities at the Project site, including adjacent to the Pacific Coast Highway, as shown below:




(Google Image of the Project site as of 3/3/2025.)

As such, the Project Site's present commercial uses are compatible with CARB's guidance whereas its proposed residential uses will continuously expose the Project's own occupants to air quality pollution, especially near the Pacific Coast Highway.

Moreover, since the Project will significantly increase the amount of traffic in the area and on the Pacific Coast Highway by bringing about 593 cars of students and more cars from employees, as well as by suggesting that students may use bicycles which may further slow down the traffic and cause car idling on the Pacific Coast Highway for various safety reasons, the Project will necessarily increase air pollution impacts not only for the Project's own occupants, but also for people residing within 500 to 1000 feet of the Pacific Coast Highway. Per the DEIR, there are sensitive residential uses within as close as 55-290 feet of the Project and hence Pacific Coast Highway:

**Table 4.10-7: Sensitive Receptors**

| Receptor Description | Distance[1] and Direction from the Property Line of Project Site |
|---|---|
| Multi-Family Residential Dwellings | 55 feet to the west |
| Single-Family Residential Dwellings | 55 feet to the west |
| Rock Christian Fellowship | 175 feet to the east |
| Cambrian Homecare | 290 feet to the east |

1. Distances are measured from the Project Site boundary to the property line.
Source: Google Earth, 2024

(DEIR, p. 4.10-13.)

Further, the noted impacts will be even more severe and serious in light of the fact that the sensitive receptors and the Project's own occupants represent the *most vulnerable* population groups – students, children, elderlies and people with various diseases. (**Exhibit 1,** p. 2.) As CARB's Technical Report mentions:

> **Need for this Technical Advisory**
>
> The primary public health concern regarding roadways near existing and future developments is the possibility that at-risk populations/communities—like **children**, **pregnant** women, the **elderly**, and those with **serious health** problems affected by air pollution—will be exposed to traffic emissions. In California, there are several instances of **schools** and **other sensitive** locations such as **daycare** facilities located near **major roadways**, particularly in non-white and economically disadvantaged neighborhoods [6, 7]. Studies show that these populations can experience serious health impacts, including worsening of asthma and cardiovascular disease and adverse birth outcomes because of exposure to traffic-related air pollution. Additionally, studies show that poor and minority communities are more likely to live near busy roadways, and

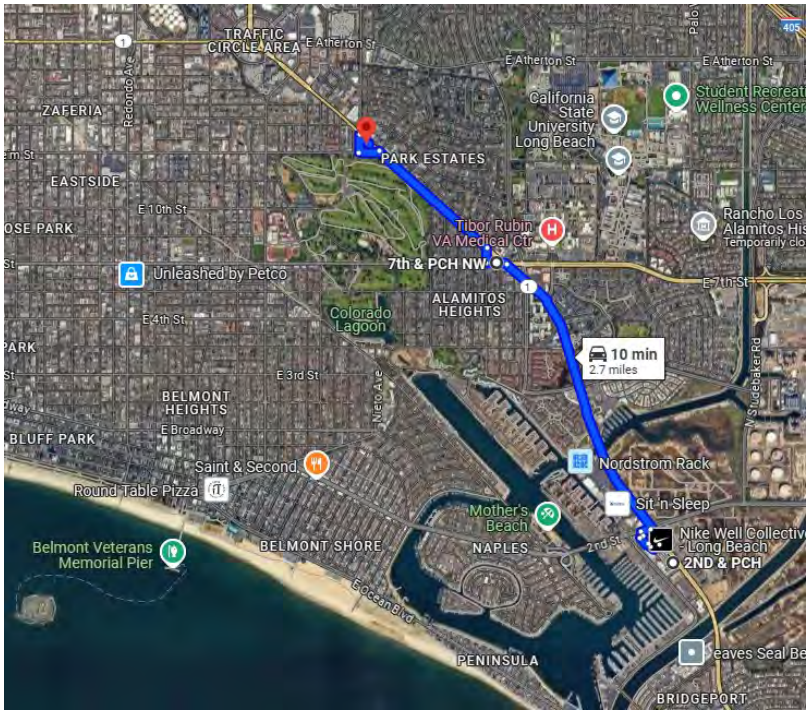
> therefore may be more at-risk for the health effects related to exposure to traffic emissions [8, 9].

(**Exhibit 1,** p. 3, emph. added.)

Notably, the DEIR's reliance on bicycles or other alternative transportation means is misplaced as it fails to consider that the Project's occupants and others will be *more severely* exposed to the air pollution impacts of the busy Pacific Coast Highway when walking or riding near the Project. These air pollution impacts are *in addition to* the risk of fatalities in Long Beach, which does not appear to be declining and which will reasonably foreseeably deter public reliance on alternative transportation means as compared with the use of cars. (**Exhibit 3** [Articles re Pedestrian Fatalities in Long Beach on PCH, one of the Long Beach's deadliest streets].)

Compounding the risk of traffic-related air quality, GHG, and health and safety risks of the Project is statistical data that the number of cars that travel on Pacific Coast Highway in Long Beach, California varies by location, with some areas seeing over 100,000 cars per day. (See **Exhibit 4** [Intersection of 7th and PCH is at 142,000 cars (close to the State University where the students would be traveling from to the Project Site); Intersection of the 2nd and PCH is at about 100,000 cars per day].)

The Project Site is close to the 7th and PCH, as shown in the Google map below, with the Project site marked with a red bubble:



The fact that the Pacific Coast Highway has on average 100,000 cars per day in the City of Long Beach squarely mandates the City planners and elected decisionmakers to disapprove the Project in light of the CARB's guidance to *not* site residential projects near high-volume roadways, i.e., urban roads with 100,000 cars per day, such as the Pacific Coast Highway. (Cal. Pub. Res. Code § 21151.8; **Exhibit 1,** p. 2).

The above-noted reasons and evidence show that bringing a 593-bed student housing at the Project site within 500 feet of a Pacific Coast Highway – which has on average 100,000 cars per day in the City of Long Beach, CA and which traffic load will significantly increase by the Project's more intensive residential uses by students driving to/from the State University on a daily basis as well as to other shopping areas that are not closely located – will have significant air quality impacts and significantly increase health and safety impacts on both the Project's own occupants and nearby residents and sensitive receptors.

For these reasons, the DEIR's air quality analysis is inaccurate as it fails to accurately disclose and fully account for the Project's impacts on air quality and human beings by siting a student housing residential Project next to the Pacific Coast Highway.

## III. THE DEIR UNDERSTATES THE PROJECT'S AESTHETIC IMPACTS, INCLUDING ON THE ELIGIBLE SCENIC HIGHWAY

Another reason the DEIR is inaccurate and incomplete to be certified is because it provides a misleading analysis on the Project's impacts on Scenic Highways. To wit, the DEIR concludes that the Project will have no impacts on the scenic highways only because the Pacific Coast Highway is not yet "designated" as a scenic highway by Caltrans and the "nearest eligible" scenic highway is *18.04 miles* away:

> **AES-2 Would the Project substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a State Scenic Highway?**
>
> **No Impact.** The Project Site faces Pacific Coast Highway to the north and east. Pacific Coast Highway is currently **not designated** as a scenic highway by **Caltrans**.4 However, according to the Urban Design Element, the **entire stretch** of the Pacific Coast Highway will become a scenic highway by **2030**.5 The **nearest eligible** State Scenic Highway is a segment of California State Route 91 that is located **approximately 18.04** miles east of the Project Site.6 As discussed above, the Project involves the adaptive reuse of the existing office building into *new* student *housing*

> and *minor changes* to the building *façade* would not substantially add to the existing building's massing or scale, nor would increase the building's height. Accordingly, the Project would have no impact on scenic resources within a State Scenic Highway.

(DEIR, p. 6-8, emph. added.)

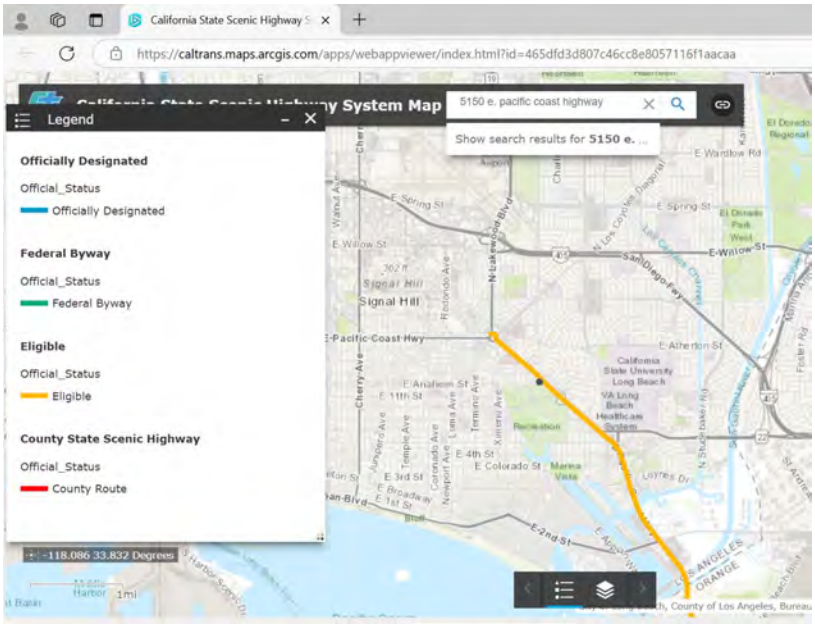
The analysis is inaccurate. First, CEQA Guidelines, Appendix G does not ask to evaluate the Project's impacts on scenic highways that are "designated" by "Caltrans"; it simply asks "would the Project:

> a) Have a substantial adverse effect on a scenic vista?
>
> b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?"

(CEQA Guidelines, Appendix G, Section I [Aesthetics].)

As such, the EIR's reliance on Caltrans designation for purposes of answering the question on impacts is misplaced.

Second, the nearest eligible Scenic Highway is not 18.04 miles away but within a few feet from the Project Site. The *link* the DEIR provides in support of its statement that Caltrans has not designated it shows that the Pacific Coast Highway – especially in the portion adjacent to the Project site – is marked in yellow, signifying that it is "eligible" as a scenic highway, as shown in the screenshot below (the black dot marking the Project site and the orange line indicating the Pacific Coast Highway):



Caltrans' web page further explains the difference between an *eligible* and a *designated* scenic highway, suggesting that *designation* is just a matter of procedure that needs to take place after the highway's *eligibility* is confirmed:

> *What is the difference between an "eligible" and an "officially designated" scenic highway?*
>
> An eligible State highway becomes officially designated through a process in which the local governing body applies to Caltrans for scenic highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a State Scenic Highway by the Caltrans Director.

(**Exhibit 2** [Caltrans Official Page printout].)

As such, the fact that the Pacific Scenic Highway is not yet designated by Caltrans should be of no significance where it is clear that the highway *is* deemed eligible for such designation.

Third, the DEIR appears to suggest that, because the Project is only about *adaptive reuse,* then it may not have any impact on the scenic highway. It provides:

> As discussed above, the Project involves the adaptive reuse of the existing office building into new student housing and minor changes to the building façade would not substantially add to the existing building's massing or scale, nor would increase the building's height. Accordingly, the Project would have no impact on scenic resources within a State Scenic Highway.

(DEIR, p. 6-8.)

However, the Project – along with its road improvements, utility upsizing and undergrounding, as well as encroachment into the highway described in our prior comment letter – may significantly damage the trees and rock outcroppings. The Project's intensive 24-hour residential uses may also indirectly substantially damage the trees and outcroppings of the Pacific Coast Highway by bringing more traffic into the Project area and leading to the deterioration of the nearby streets and adjacent trees and scenic vista.

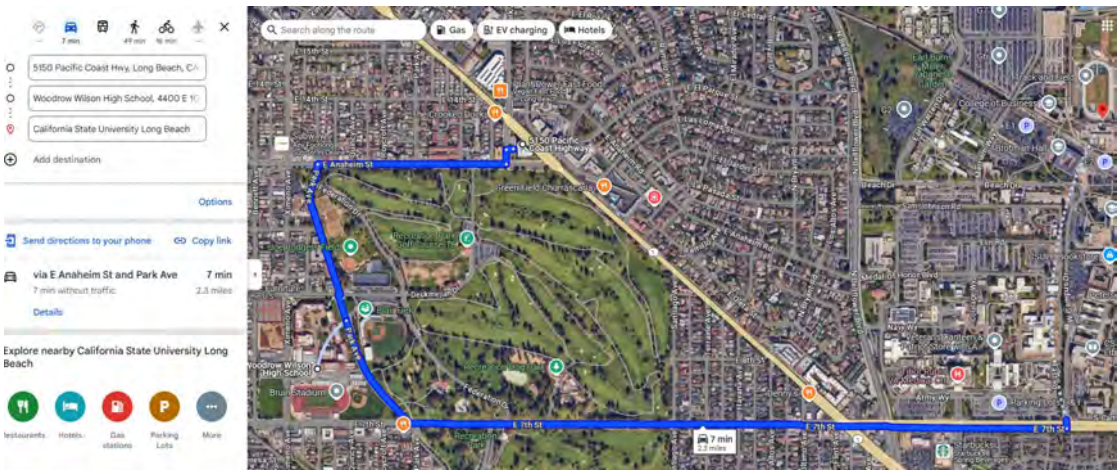
Moreover, the DEIR summarily mentions about "minor" changes to the "façade" of the building without explaining what those changes are and why those are deemed minor.

As such, the Project may have significant impacts on the eligible State Scenic Highway and also detract from its scenic views and significance, requiring adequate mitigation measures, contrary to the EIR's findings. For this reason too the EIR is incomplete and inaccurate and cannot be certified.

## IV. THE DEIR'S TRAFFIC IMPACT ANALYSIS IS BASED ON FLAWED AND INCORRECT ASSUMPTIONS AND IS ALSO INADEQUATE.

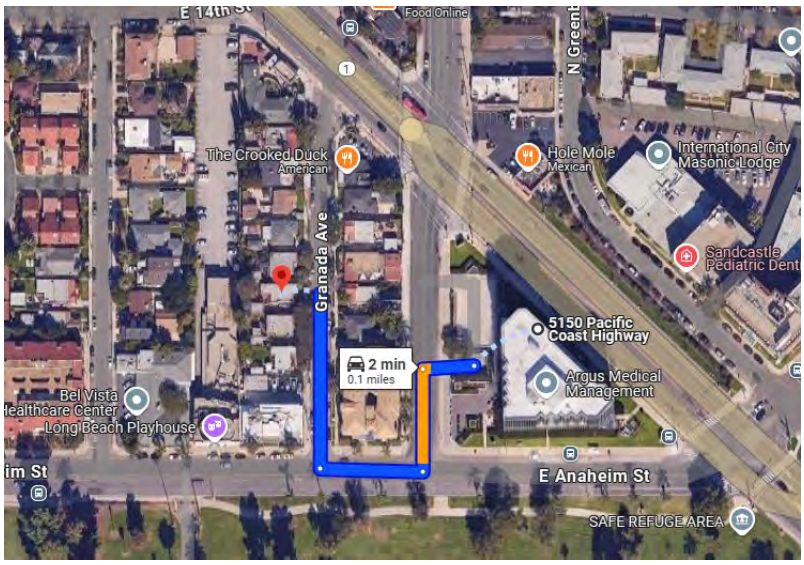
As we have previously noted in our January 23, 2025 letter, the EIR provided no assurance that the California State University, Long Beach ("CSULB") Beachside Shuttle Service could be used or relied upon to transport students from/to the Project site. This concern is further validated by the comment from CSULB, as well as cease and desist letters to the Project Applicant, showing that the Project is not affiliated with CSULB in any way, shape or form, and that the CSULB Beachside Shuttle cannot be relied upon for the Project's transit use. (**Exhibit 5** [CSULB comments and others' emails re CSULB shuttle service and traffic impacts of the Project].) As such, the EIR's traffic impact analysis is fatally flawed as it relies, in part, on the "potential" and yet illusory and erroneous assumptions to support its finding of no traffic impacts.

The noted traffic impacts are also critical and necessary to thoroughly account in light of the nearby schools, as pointed out by the School District's comment. (**Exhibit 6** [School district comment].) Based on the Draft EIR, the closest school is the Woodrow Wilson School at 4400 E. 10th Street, Long Beach, located southwest of the Project. (DEIR, pp. 5-12—5-13.) While the school is located 0.45 miles away (as reported by the EIR), Google map image of locations of the Project Site and the CSULB shows that the School is on the way and on the street the Project's occupants may use to reach the University, as shown in the screenshot below:



As such, the EIR's traffic studies should duly account for the Project's impacts on the nearby school students, school hours and school zones.

Moreover, based on public comments and *personal observations* of residents in the Project's vicinity, the Project's vicinity is already suffering from high traffic congestion and parking issues, and adding potentially 593 students in the Project site will necessarily increase traffic congestion and parking shortage. (**Exhibit 7** [Resident's comment on traffic].) The commenter's address (1331 Granada Avenue Long Beach, CA 90804) shows the commenter is in the immediate vicinity of the Project at 5150 E. Pacific Coast Highway, Long Beach, as shown in the Google map screenshot below:




Residents' personal observations of traffic conditions in the Project area amount to substantial evidence of traffic impacts due to the Project's exacerbation of impacts.

As the commenter noted, there is already a congestion on Clark street and there would be a need to add a "No Left Turn" sign to eliminate the bottlenecks that would further exacerbate with the Project. Similarly, as the commenter suggested, there is no sufficient parking for even *permitted* parking on the street and the Project should make sure that students cannot get permits to park on the streets.

For all the above-noted reasons, the Project will have significant traffic impacts and requires both an accurate disclosure and mitigation thereof in the EIR, including recirculation of the EIR to correct both the Project description, its baseline assumptions, and its analyses of traffic impacts.

## V. THE DEIR'S RECREATION AND PUBLIC SERVICES IMPACT ANALYSES ARE BASED ON FLAWED ASSUMPTIONS.

As also pointed out by CSULB, the EIR improperly relies on the University's own park and library to conclude that the Project's impacts on public services and park/recreation will be less than significant. (**Exhibit 5.**) However, since the Project is not affiliated with the CSULB, such assumption is flawed. Hence, the Project may have – and should mitigate – impacts on public services, libraries, parks, and recreation.

The Draft EIR, therefore, should be revised and recirculated to address these impacts.

## VI. THE DEIR FAILS TO DULY ACCOUNT FOR THE PROJECT'S BIOLOGICAL AND ENERGY IMPACTS.

As further pointed out by Sierra Club, the Draft EIR fails to account for the Project's potential significant impacts on biological resources and also energy impacts, in light of the fact that the Project site's building is all glass and will be lit up during night hours.

First, while bird mortality may not have been a problem with the Project site's less intensive *commercial* uses (dark at nights), bird mortality may become a significant impact to biological resources especially on nocturnal migratory birds, which are attracted to the light and do not see the glass. (**Exhibit 8** [Duke University Research and Supporting Scientific Evidence].) Thus, per Duke University student research:

> Every year, up to **one billion** birds die from hitting windows. Windows kill more birds than almost any other cause of human-related bird mortality, second only to feral and domestic cats. Both the transparency and reflectiveness of glass can confuse flying birds. They either don't see the glass at all and try to fly through it, or they're fooled by reflections of safe habitat or open sky. And **at night,** birds may be disoriented by **lit-up buildings** and end **uphitting windows** by mistake. In all cases, the result is usually the same. The majority of window collision victims die on impact. Even the survivors may die soon after from internal bleeding,concussions, broken bones, or other injuries.
>
> (**Exhibit 8,** pp. 1-2, emph. added.)

As ways to reduce such bird mortality, researchers propose various techniques, such as etching, fritting, frosting the windows, using window decals, or even *"lights out"* initiative, i.e., keeping all non-essential lights off:

> Lights Out initiatives are gaining ground in U.S. cities including Dallas, Houston, Philadelphia, and New York. The all-night glow of office buildings and streetlights in cities is especially dangerous for drawing migrating birds off course, delaying their migrations and making them vulnerable to window collisions.
>
> Turning off nonessential lights and installing downward-facing lighting are relatively simple ways to reduce the problem of artificial light at night. It's still wise to take precautions against window collisions using any of the above methods, especially for homeowners.

(**Exhibit 8.**)

While the "all lights out" initiative *may* arguably work for an office building occupied with *office* uses that are typically dark at nights, it cannot be necessarily accomplished with the Project's proposed *residential* uses.

Similarly, the Project's glass building and its proposed *residential* use will have more *energy impacts*. Notably:

> Flat glass, commonly used in skyscrapers, has its disadvantages. It easily transfers heat from the inside to the outside because it conducts heat quickly. This can lead to higher energy consumption for heating and cooling. Also, its high light transmittance can result in too much sunlight inside and temperature swings.

(**Exhibit 9** [Articles re Glass Buildings and Energy Efficiency Issues].)

As The Guardian noted:

> The gas use for heating was about 40% more for tall buildings, and the total carbon emissions from these buildings was twice as high.
>
> Glass skyscrapers are the worst offenders. Large windows may provide magnificent views but they leak heat in cold weather; even triple glazed windows lose far more heat than a well-insulated brick wall.
>
> In hot weather, glass windows turn building interiors into ovens, and temperatures rise even further with the heat from people and computers in an office.

(**Exhibit 9.**)

And again, while the Project site already had energy efficiency impacts due to its glass building, those energy impact will be much more severe in light of the proposed

residential uses and the need to adjust the room temperature in the building not only during the *office* hours but also at nights.

The Draft EIR must account for the noted increased energy impacts and provide adequate mitigation measures and changes in the building, including modern air conditioning systems to ensure that the Project mitigates such energy impacts.

In sum, the Draft EIR fails to duly account for the Project's biological and energy impacts due to the all-glass construction and the proposed change of use from commercial to residential and should be recirculated to make adequate disclosures and provide mitigation for such reasonably foreseeable impacts.

## VII. THE PROJECT MAY HAVE NOISE IMPACTS FROM THE NEARBY AIRPORT

The Draft EIR provides:

> As discussed in Section 4.7, Hazards and Hazardous Materials, of this Draft EIR, the nearest airport to the Project Site is the Long Beach Municipal Airport, located 1.60 miles to the north of the Project Site. Nevertheless, as explained in Section 4.10, Noise of the Draft EIR, review of the Project's **Airport Influence Area (AIA) map** indicates that the Project is located outside the AIA boundaries. Additionally, there are no other airports or airstrips within 2.0 miles of the Project Site.
>
> As such, **although** the Project is located **within two miles** of a **public** airport, the Project would not result in a safety hazard or **excessive noise** for people residing or working in the Project area.

(DEIR, p. 5-13, emph. added.)

CEQA Guidelines Appendix G, Noise Section requires to inquire whether:

> e) For a project located within an **airport land use** plan or, where such a plan has **not been** adopted, **within two miles** of a **public airport** or public use airport, would the project **expose** people **residing** or **working** in the project area to **excessive noise** levels?
>
> f) For a project within the **vicinity** of a **private** airstrip, would the project expose people **residing** or **working** in the project area to **excessive noise** levels?

(Emph. added.)

As such, while the Draft EIR *admits* that the Project *is* within 2 miles of a public airport, it concludes that, since the Project area is not included in the Airport Influence Area Plan, the Project will not have significant noise impacts on the Project occupants. This conclusion is unsupported. Specifically, the CEQA inquiry provides a 2-mile distance for projects *not included* in the airport land use plan. Also, the Draft EIR does not explain whether the Airport Influence Area map is co-terminous with the airport land use plan. Instead, the Draft EIR conflates the AIA with the airport land use plan and based solely on the fact that the Project is not included in the AIA map, it will necessarily not expose students to excessive noises. There is also no evidence that the AIA map conclusively shows or was designed to conclusively show that projects outside of the AIA map area will have no excessive noise.

To wit:

> State law requires sellers of real property to disclose "any fact materially affecting the value and desirability of the property". Assembly Bill 2776, which went into effect January 1, 2004, requires such disclosure when the property is *either* within two miles of an airport *or* if it is within an "airport influence area." The disclosure notice must state that the property may be subject to noise, vibration, odors or other annoyances or inconveniences "associated with proximity to airport operations." This law defines the "airport influence area" as the area where airport-related factors "may significantly affect land uses or necessitate restrictions on those uses as determined by an airport land use commission." The California Public Utilities Code establishes airport land use commissions in every county to provide for the orderly development of air transportation and ensure compatible land uses around airports which are open to public use. According to the State Division of Aeronautics, the "airport influence area" is usually the planning area designated by an airport land use commission for each airport.

(**Exhibit 10** [Information on AIA from the County of LA].)

The above-quoted passage confirms that the 2-mile distance is not co-terminous with the AIA influence map but is an *alternative* way to check if the Project may have excessive noise impacts, in *addition* to the project being included in the AIA area.

Also, notably, the Project proposes *residential* uses and also *outdoor* uses, whereas the Project's occupants will be students who need to concentrate on studies and may be significantly impacted by airplane noise, including through the night.

Second, the EIR appears to use the 2-mile distance also to the private airstrip, whereas CEQA Appendix G does not have such distance limitation and only asks about any private airstrip in the Project's vicinity.

The noted noise impacts may be even more severe in light of the fact that the Project building is *all glass* and arguably has no proper noise insulation necessary for the proposed residential uses.

For these reasons, the Project may expose its student residents to excessive noise impacts but improperly discounts those impacts relying on legally erroneous interpretations of CEQA requirements. The Draft EIR should be revised to duly account for the Project's noise impacts in light of the nearby municipal airport and the Project's glass building, in light of the proposed change of use from commercial to residential student dormitory.

## VIII. CONCLUSION

In view of the above-noted concerns and those raised in our January 23, 2025 comment letter, we respectfully request that the EIR be recirculated to correct and include the omitted information and to provide meaningful analysis, identification, and mitigation of impacts as CEQA requires. We also request that a Phase II ESA be conducted to resolve and investigate issues that Phase I skipped or understated, including but not limited to soil sampling, methane testing, and asbestos and other hazards evaluation of the Project site. "CEQA contemplates *serious* and not superficial or pro forma consideration of the potential environmental consequences of a project." (*Leonoff v. Monterey County Bd. of Supervisors* (1990) 222 Cal.App.3d 1337, 1347, 272 Cal.Rptr. 372; emphasis added*; Burbank-Glendale-Pasadena Airport Authority v. Hensler* (1991) 233 Cal.App.3d 577, 593, fn. 3.)

If the City has any questions or concerns, please feel free to contact my Office.

Sincerely,

Naira Soghbatyan
Attorneys for Western States Regional Council of Carpenters

**Attached:**

CARB's Technical Advisory of April 2017 re "Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways" (**Exhibit 1**);

Printout from Caltrans' Web Page re Scenic Highways (**Exhibit 2**);

Articles re Pacific Coast Highway and its car crashes and fatalities (**Exhibit 3**);

Data on the volume of cars on the Pacific Coast Highway in Long Beach at the 7th and 2nd street intersections with PCH (**Exhibit 4**);

Long Beach State University, Applicant, and Others' emails re no affiliation with the Project (**Exhibit 5**);

Long Beach School District's Comment on the EIR (**Exhibit 6**);

Public Comment on the Project's traffic impacts (**Exhibit 7**);

Article and Research re Bird Mortality caused by Glass Buildings (**Exhibit 8**);

Articles re Energy Efficiency and Impacts of Glass Buildings (**Exhibit 9**); and

Information re Airport Influence Area Map of Los Angeles County (**Exhibit 10**).

**EXHIBIT 1**

# Research Division

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY | AIR RESOURCES BOARD

TECHNICAL ADVISORY

# Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways

April 2017



## Acknowledgements

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Southern California Association of Governments (SCAG)

Stanislaus Council of Governments (StanCOG)

Tahoe Regional Planning Agency (TRPA)

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University of California, Riverside (UCR)

University of Southern California (USC)

U.S. Environmental Protection Agency

Ventura County Air Pollution Control District (VCAPCD)

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# Executive Summary

This advisory is a technical supplement to ARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (hereafter referred to as the Land Use Handbook).[1] Published in 2005 under the auspices of ARB's Environmental Justice Stakeholders Group, the Land Use Handbook provides information for local elected officials and land use agencies to consider regarding the siting of new sensitive uses near pollution sources, including (but not limited to) freeways and high-volume roadways, when site-specific air quality information is not available. Since its publication, research has demonstrated the public health, climate, financial, and other benefits of compact, infill development along transportation corridors. Moreover, new research has demonstrated promising strategies to help decrease pollution exposure near their sources. These strategies are the focus of this Technical Advisory.

ARB intends for this Technical Advisory to provide planners and other stakeholders involved in land use planning and decision-making with information on scientifically based strategies to reduce exposure to traffic emissions near high-volume roadways in order to protect public health and promote equity and environmental justice. Many communities in California exist near high-volume roadways. This is both because freeways and other busy traffic corridors have been built adjacent to and through existing neighborhoods in California, and because new developments have been built near existing roadways. Near-roadway development is a result of a variety of factors, including economic growth, demand for built environment uses, and the scarcity of developable land in some areas.

This Technical Advisory demonstrates that planners, developers, and local governments can pursue infill development while simultaneously reducing exposure to traffic-related pollution by implementing the strategies identified here and in other statewide guidance and policies that promote sustainable communities. The State Planning Priorities[2] emphasize infill development, since this pattern of development can help attain goals to promote equity, strengthen the economy, protect the environment, and promote public health and safety. ARB acknowledges that there are many existing developments near high-volume roadways and other sources of air pollution throughout the state, and many of these strategies apply in those situations, as well.

Strategies to reduce exposure include practices and technologies that reduce traffic emissions, increase dispersion of traffic pollution, or remove pollution from the air. Recent research documents the effectiveness of a variety of strategies. Based on a review of this body of research, ARB staff compiled a list of recommended strategies, which this document describes in detail.

This document does not include all potential pollution reduction measures, but rather the options that are well supported by scientific findings and which meet all of the following criteria:

1. Consistent findings from multiple studies support the strategy as a means for reducing pollution concentrations, or emissions rates, or improving air flow to disperse pollutants.
2. The scientific literature documents evidence of significantly effective exposure reduction.
3. Diversity in the study methods supports consistent findings (such that strategy efficacy does not exclusively rely on one method of investigation).

1 *http://www.arb.ca.gov/ch/handbook.pdf*
2 California Government Code Section 65041.1.

Appendix A outlines strategies that did not meet the ARB's three criteria, but were nonetheless identified in ARB's literature review. In some cases, these strategies represent nascent technologies or designs that require more study before ARB can recommend them for general application. In other cases, studies do not present consistent results or strategies have only been studied via modeling or simulation, and it is uncertain if these strategies will perform similarly in real world settings.

## Benefits of compact, infill development

Infill and compact development characterizes many communities located near freeways and other busy traffic corridors. This development pattern has many benefits. It promotes physical activity by facilitating active transportation (biking and walking) and by shortening the distances that people must travel for their daily activities [1]. It also provides density of development that helps support transit operations [2]. The car trips that are shortened or replaced by these other modes result in greenhouse gas (GHG) emissions reductions, and GHGs are further reduced in these communities because they are also associated with reduced energy and water use [3]. Importantly, compact and infill development can also improve people's quality of life by facilitating community connectivity. For these reasons, planners often favor infill and compact development and other stakeholders involved in land use planning and real estate development. Additionally, these types of developments are encouraged by regions striving to achieve greenhouse gas emissions reductions from land use and transportation planning in accordance with Senate Bill (SB) 375.

The foremost strategy for reducing pollution exposure near high-volume roadways is to minimize traffic pollution in the first place. A key mechanism for this is the reduction of vehicle miles traveled (VMT). State legislation including Senate Bills 375 and 743, are specifically designed to facilitate VMT reductions from passenger cars by encouraging and facilitating the replacement of vehicle trips with walk, bike, and transit trips. There is evidence from research and real-world measurement that,

## KEY TERMS

**traffic emissions**

Primary emissions/pollution from motor vehicles, including carbon monoxide, hydrocarbons, nitrogen oxides, particulate matter, toxic air contaminants, brake dust, and tire wear.

**high-volume roadways**

Roadways that, on an average day, have traffic in excess of 50,000 vehicles in a rural area and 100,000 vehicles in an urban area (Source: California Public Resources Code Section 21151.8).

**at-risk populations/communities**

Children, pregnant women, the elderly, and those with serious health problems affected by air pollution.

**sensitive uses**

Land uses where sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities.

**sustainable communities**

Communities that foster conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic, and other requirements of present and future generations.

**disadvantaged communities**

Communities that score at or above the 75th percentile in the CalEnviroScreen Tool. The tool scores tracts according to their proximity to multiple sources and their vulnerability to the effects of pollution and also account for socioeconomic characteristics and underlying health status.

**dispersion (of air pollution)**

Distribution of air pollution into the atmosphere.

when vehicle miles and trips are greatly reduced—for example, when streets are temporarily closed to motorized vehicles for car-free open-streets or "ciclovia" events—air quality is significantly improved [4, 5].[3]

Coordinated land use and transportation planning that results in more compact neighborhoods can help reduce VMT by making transit and active transportation viable and reducing the need for personal cars. Travel demand management strategies that improve the efficient use of transportation resources (e.g., teleworking, car-sharing, and carpooling) also reduce vehicle trips. ARB's partners also promote other innovative ideas for increasing the availability and appeal of alternative modes of transportation. At Caltrans, for example, the newly created Active Transportation Program focuses on making California a national leader in active transportation[4] and one Caltrans district is studying freeway capping as an innovative way to better connect people to destinations via parks, paths, and transit constructed atop existing freeways.[5]

In addition to reducing VMT, there are many efforts underway to reduce emissions via other mechanisms. These include more stringent emissions and fuel standards for cars, trucks, and buses; state regulations for zero emission vehicle (ZEV) adoption; and California's Sustainable Freight Transport Initiative. Other state efforts that will reduce emissions, and therefore complement this document, include the AB 32 Scoping Plan and the State Implementation Plan, and the Mobile Source Strategy.

More and more, planners are designing land use developments to make alternatives to automobile travel more attractive. These changes are important because of their long-term significance, as changes in the built environment mean changes in land use patterns that will last for decades. Land use development patterns in some California jurisdictions already contribute to reductions in the use and ownership of cars because of land use planning strategies and active transportation investments. However, change is slow, and many existing and planned developments—including important infill and compact development projects—place sensitive individuals in close proximity to high-volume roadways. In these instances, there is a need for developers, local governments, and other entities to consider pollution reduction strategies to ensure that residents of both new and existing developments breathe air that is as clean as possible.

## Need for this Technical Advisory

The primary public health concern regarding roadways near existing and future developments is the possibility that at-risk populations/communities—like children, pregnant women, the elderly, and those with serious health problems affected by air pollution—will be exposed to traffic emissions. In California, there are several instances of schools and other sensitive locations such as daycare facilities located near major roadways, particularly in non-white and economically disadvantaged neighborhoods [6, 7]. Studies show that these populations can experience serious health impacts, including worsening of asthma and cardiovascular disease and adverse birth outcomes because of exposure to traffic-related air pollution. Additionally, studies show that poor and minority communities are more likely to live near busy roadways, and therefore may be more at-risk for the health effects related to exposure to traffic emissions [8, 9].

Scientific evidence indicates that implementing the strategies contained in this document would decrease exposure to air pollution in a variety of locations and contexts, so these strategies are applicable in a broad range of developments, not just those located near high-volume roadways. ARB's motivation for emphasizing these strategies in near-roadway environments is a reflection of the potentially serious health impacts that at-risk populations/communities may experience when they spend significant time in such environments, absent appropriate design measures.

3 "Ciclovias," Open Streets, and Sunday Streets are events whereby roadways are closed to automobiles but open to cyclists and pedestrians. Many cities around the world have implemented these events, including several cities in California: Los Angeles (*http://www.ciclavia.org/*), San Francisco (*http://sundaystreetssf.com/*), San Jose (http://*www.vivacallesj.org*/). Albany, Long Beach, Oakland, Redding, and San Mateo. Visit the California Bicycle Coalition's Web site for more information: *http://www.calbike.org/open_streets*.

4 *http://www.dot.ca.gov/hq/LocalPrograms/atp/index.html*

5 *http://www.dot.ca.gov/dist11/departments/planning/planningpages/capstudy.htm*

In addition, these strategies are likely to yield the greatest public health benefit when applied in near high-volume roadway contexts.

Planners, developers, and others can implement these strategies where existing sensitive uses are already located near high-volume roadways. The strategies are also relevant for new developments. When planners and other decision makers consider these strategies during the planning phase, they may be less expensive to implement than if they are added via retrofits after construction.

## How to use this Technical Advisory

ARB envisions that this document will be used by planners and other stakeholders to identify combinations of strategies that can be implemented to reduce exposure at specific developments or to recommend the consideration of these strategies in policy or planning documents. For example, local governments may refer to it or use portions of it in their general plans. The contents may also be helpful in the development or updating of environmental justice policies in general plans, as required by Senate Bill (SB) 1000. Readers interested in learning more about the requirements of SB 1000 should consult OPR's General Plan Guidelines.

It is important to note that this Technical Advisory is not intended as guidance for any specific project, nor does it create any presumption regarding the feasibility of mitigation measures for purposes of compliance with the California Environmental Quality Act (CEQA). Instead, it is meant as guidance for planners weighing options for reducing exposure to traffic emissions.

## Strategies to reduce exposure, weighed alongside overarching considerations

The table that follows this executive summary describes the research findings supporting each recommended strategy, the appropriate land use context, and other considerations. These additional items were revealed either through the research or through consultation with experts and stakeholders. This table can be used for quick reference, but readers should also refer to *Section II* for an expanded discussion of these strategies, including details about co-benefits and potential drawbacks.

In addition to the considerations outlined in Section II, readers should be mindful of the following important overarching considerations that were identified by ARB staff and other experts who were consulted during the development of this document:

### Changes in land use patterns and the built environment persist for decades

Land use patterns, once established, remain fixed for decades. Increasing density through infill development helps to transform low-density neighborhoods to ones that can support alternative modes. When developing new plans and projects, planners should carefully consider the ongoing influence of those plans and projects on the creation of accessible and livable neighborhoods.

### Holistic and comprehensive planning practices

Stakeholders involved in public health, air quality, and community planning efforts must weigh a variety of factors and issues when making policy decisions. At-risk populations/communities' exposure to traffic is just one of many considerations, but it is an important piece that planners and others should weigh alongside other local goals and priorities. Thus, ARB recommends that exposure to traffic emissions and strategies to reduce exposure be considered holistically, within planning processes at the scale of a neighborhood or community plan or ordinance, general plan, sub-regional or regional plan, depending on the geographic impact and regulatory context of the issue. Additionally, ARB recommends that planners consider leveraging holistic and combined practices, policies, and strategies to achieve local goals. Real-world evidence from the Atlanta 1996 Summer Olympic Games showed that a suite of coordinated strategies reduced ozone pollution and childhood asthma events significantly (*see textbox on page 16 for details*).

## Site-specific considerations

Site-specific factors may play a significant role in whether or not an exposure reduction strategy will be effective without resulting in negative, unintended consequences. In some cases, it may be possible for planners and other stakeholders to use site-specific information to estimate the reduction in pollution concentration associated with a specific strategy or combination of strategies. When exposure reduction strategies—such as those presented in this document—are incorporated into large-scale policy documents like jurisdiction-wide general plans, a menu of strategies and language about the usefulness of site-specific analysis to assist in choosing the right strategies for specific projects may be appropriate, since not all strategies are necessary or appropriate in all cases.

## Changing vehicle fleets and impacts on air quality

California's vehicle fleets and freight system are becoming cleaner and this trend will continue into the future, given existing and forthcoming policies and transformations underway in the automobile market (see more information in *Section I. Introduction*). This fact should be carefully considered in local decision-making, particularly when long-term, durable strategies are being considered, such as urban design changes or standards. It is worth noting, however, that while transitioning to ZEVs eliminates tailpipe emissions, it does not eliminate all traffic emissions. Non-tailpipe particulate matter emissions from road dust, brake dust, and tire wear are likely to continue to impact public health, particularly for sensitive individuals. Furthermore, ZEVs do not eliminate upstream emissions from non-renewable energy sources or sources linked to their manufacture and production [10].

## On-roadway exposure to traffic emissions

The more time people spend on roadways, the greater their exposure to emissions that are harmful to their health [11]. This fact should also be considered as planners weigh strategies for reducing near-roadway pollution exposure, since it is crucial that they avoid making land use decisions that would result in longer commutes. In other words, planners should not push new development farther from urban centers because this could induce longer vehicle trips and thus increased on-roadway exposure. Additionally, it should be noted that, in some cases, exposure reduction strategies may increase on-road pollution concentrations. If in-vehicle filtration is inadequate or if drivers travel with the windows down, this could translate into increased exposure for people driving in cars.

## Translating research into practice

Putting research into practice can be challenging since research studies often seek to address a narrowly defined question and control for factors that are commonly observed in the real world. The way that research is conducted may not be reflective of real world conditions, so users of this Technical Advisory should consider how the research applies to the specific context being considered. Also, even when data is collected in the real world, the data may be several years old by the time that researchers are able to digest, analyze, and summarize findings and conclusions. Thus, users of this document may need to consider how changes in the local context may have affected the variables that researchers considered in their analyses.

## Executive Summary conclusion

The identification of strategies described herein is intended to provide stakeholders involved in public health, air quality, and land use planning efforts (including city and county planners, planning commissioners, developers, planning consultants, and other local government staff and decision makers) with options for reducing exposure to traffic pollution in near-roadway environments, both for existing and new developments. We envision that this document will be used as a resource to:

1. Identify strategies that can be employed on a site-specific basis to reduce exposure to traffic emissions at existing and future developments and;
2. Help shape local policies aimed at reducing exposure to traffic emissions and therefore associated public health impacts.

As California grows, we have the collective opportunity to shape the future of the built environment to be both protective of public health and supportive of environmental goals. ARB hopes that the content of this Technical Advisory will assist the efforts of planners and other practitioners and decision makers to promote healthy, safe, equitable, and sustainable communities. Furthermore, ARB will continue to investigate options to mitigate air pollution exposure in many contexts and related to different sources of air pollution in addition to high-volume roadways.

**Table 1: Summary of strategies to reduce air pollution exposure near high-volume roadways**

| Strategy | Description of research findings | Appropriate context and other considerations |
|---|---|---|
| Strategies that reduce traffic emissions | | See *Section II*, page 20. |
| Speed reduction mechanisms, including roundabouts | Vehicle speed reduction mechanisms change the design and operating speed of the road by altering the physical characteristics of the road. These features can reduce stop-and-go driving and hard accelerations and thereby reduce emissions rates. Some of these features, like the roundabout intersection, can be used as an alternative to stop-controlled and signalized intersections. Studies show that roundabouts can reduce localized pollutant concentrations compared to intersections with stop and signal control by 20 percent or more (depending on context and site-specific conditions). | Transportation planners and engineers should carefully consider the potential direct and indirect effects of implementing speed reduction mechanisms to determine if they will reduce vehicle emissions and other impacts to the environment as well as to traveler safety and delay. When guidance is needed to estimate emissions and air quality-related effects, planners and engineers may consult with MPOs or traffic modeling experts. |

| Strategy | Description of research findings | Appropriate context and other considerations |
|---|---|---|
| Traffic signal management | Traffic signal management systems can reduce stop-and-go driving and vehicle idling, resulting in reduced localized pollutant concentrations of up to 50 percent compared to corridors that do not implement these systems. Studies show that site-specific conditions dictate the magnitude of reductions. | Many different types of signal management are available, and planners should identify what is best for air quality, vulnerable road user safety, and transit and active mode throughput and comfort. |
| Speed limit reductions on high-speed roadways (>55 mph) | Research studies have identified an optimal average speed range of ~35-55 mph within which per-mile traffic emissions and fuel consumption are minimized. Generally, speed limit reductions on high-speed roadways can reduce tailpipe emission rates up to 30 percent, depending on the change in speed, the pollutant measured or modeled, and the roadway characteristics. | Speed limit reductions are appropriate on roadways where speed limit and design speeds exceed 55 mph. |
| Strategies that increase dispersion of traffic emissions | | See *Section II*, page 26. |
| Design that promotes air flow and pollutant dispersion along street corridors | The physical layout of urban streetscapes influences air flow and pollution movement. Research studies show that street corridors characterized by buildings with varying shapes and heights, building articulations (street frontage design elements like edges and corners that help break up building mass), and spaces that encourage air flow (e.g., parks) benefit from better pollutant dispersion and air quality. For example, buildings of varying heights can result in significant increases in turbulence (e.g., up to doubling), and adding bike lanes and sidewalks not only reduces car traffic, but also creates space for more dispersion (up to a 45 percent reduction in particulate concentrations). | Wider sidewalks, bicycle lanes, dedicated transit lanes, and other features that benefit alternative modes of transportation can also create space for better air flow and pollutant dispersion along with increasing active transportation and mode shift. This strategy should be considered in the context of the overall need to increase development density. |

| Strategy | Description of research findings | Appropriate context and other considerations |
|---|---|---|
| Solid barriers, such as sound walls | Measurement and modeling studies consistently find that solid barriers reduce near-road downwind concentrations by increasing vertical **dispersion** of pollutants emitted by vehicles. The magnitude of the reduction and its spatial extent depend on the height of the barrier, the width of the road, and micrometeorology. Studies have consistently found that pollution concentrations downwind of the barrier range from a 10 percent to 50 percent reduction compared to concentrations measured on or directly adjacent to high-volume roadways. | Solid barriers should only be considered for installation along freeways, because they have the negative effect of dividing neighborhoods and obscuring sightlines. |
| Vegetation for pollutant dispersion | Studies indicate that vegetation has the potential to alter pollutant transport and **dispersion**. In some studies, specific locations and conditions translated to air quality benefits (e.g., pollution concentration reductions of up to 20 percent on the leeward side of the tree line). It should be noted that most studies were conducted on the East Coast and in Europe where vegetation types and densities differ from what is found in California. | Online tools are available to assist with the selection of appropriate vegetation considering allergen impacts, watering needs, and other factors. Maximum benefits have been shown to occur when vegetation is combined with solid barriers. |
| Strategies that remove pollution from the air | | See Section II, page 36. |
| Indoor high efficiency filtration | Studies show that particle filtration systems and devices, specifically high-efficiency filtration with mechanical ventilation or portable high efficiency air cleaners, can be highly effective for reducing indoor pollution concentrations. High efficiency filters in ventilation systems can remove from 50-99 percent of particles in the air. However, research shows that filtration technologies for gaseous pollutants (VOCs) are variable in their effectiveness; some remove certain VOCs well, but not others. | Planners should be aware of current state and local building codes and their respective air filtration requirements, including requirements for amending code standards. Regular operation and maintenance is necessary for highest filter and ventilation efficiency, and is required by regulation in commercial buildings. |

# Introduction

## State programs to improve air quality and reduce exposure to traffic emissions

California has a long and successful history of reducing air pollution to protect public health. Gasoline sold in California contains less pollution-forming compounds than most gasoline sold elsewhere in the nation[6], and the low carbon fuel standard is continuing to reduce the carbon content of fuels[7]. California now has more than 100,000 plug-in electric vehicles on its roads, and today's new cars pollute 99 percent less than their predecessors did thirty years ago. ARB's Advanced Clean Cars program will continue to drive reductions in emissions from light-duty vehicles[8]. Emissions from trucks and buses are declining[9], and ambient diesel particulate matter (PM) concentrations in California dropped 68 percent between 1990 and 2012 [12]. These emissions reductions have resulted in significant public health benefits, including the reduction of cancer risk associated with diesel PM.

### Reducing traffic emissions

The primary mission of ARB is to protect public health through the improvement of air quality. ARB has many policies and programs to improve near-roadway air quality and to protect public health. These policies and programs primarily rely on technologies or strategies that reduce traffic emissions at the source, which is more effective than attempting to clean up the air after emissions have already been released into the environment. ARB policies and programs focus on traffic emissions because regulation of emissions from stationary sources occurs at local and regional air pollution control authorities known as Air Pollution Control Districts (APCD) or Air Quality Management Districts (AQMD). The following describes State programs that are important for reducing traffic emissions.

The sustainable communities program at ARB focuses on ways to reduce traffic emissions by reducing vehicle miles traveled (VMT). VMT can be reduced through a variety of strategies. Research shows that people tend to drive less when trip origins and destinations can be easily accessed via walking, biking, and transit. Dense, mixed use development is a common way that communities can achieve improved accessibility and mobility without relying on cars.

ARB is responsible for the implementation of the Sustainable Communities and Climate Protection Act of 2008, or SB 375[10]. In accordance with the law, ARB sets regional targets for GHG emissions reductions from passenger vehicle use. In 2010, ARB established targets for 2020 and 2035 for each of the state's metropolitan planning organizations (MPO). To comply with the law, MPOs prepare a "sustainable communities strategy" (SCS) to be included in their regional transportation plans (RTP). The SCS contains land use, housing, and transportation strategies that, if implemented, would allow the region to meet its GHG emission reduction targets. Once adopted by the MPO, the RTP/SCS guides the transportation policies and investments for the region. ARB must review the adopted SCS to confirm and accept the MPO's determination that the SCS, if implemented, would meet the regional GHG targets. As of the writing of this Technical

6 *http://www.arb.ca.gov/fuels/gasoline/gasoline.htm*
7 *http://www.arb.ca.gov/fuels/lcfs/lcfs.htm*
8 *http://www.arb.ca.gov/msprog/consumer_info/advanced_clean_cars/consumer_acc.ht*
9 *http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm*
10 *http://www.leginfo.ca.gov/pub/07-08/bill/sen/sb_0351-0400/sb_375_bill_20080930_chaptered.pdf*

Advisory, all MPOs in California have completed their first SCS/RTP, and most have at least begun the process of completing their second. ARB's Sustainable Communities Web page provides links to SCSs along with ARB staff's technical evaluation. These documents are a useful place for planners to gather information about what is happening at a regional level to reduce VMT and thus air pollution from cars generally.[11]

ARB partners closely with many other state agencies to promote sustainable communities and reductions in VMT and to provide MPOs and local governments with resources that can be used in the development of SCSs and in the implementation of land use and transportation policies at the local level. Partners include Caltrans, the California State Transportation Agency (CalSTA), the Governor's Office of Planning and Research (OPR), the California Department of Housing and Community Development (HCD), and the Strategic Growth Council (SGC). These partners are actively engaged in various programs to reduce VMT. OPR is actively working on promoting VMT reduction by changing the metric used to assess transportation impacts under CEQA, per SB 743[12]. Caltrans is also encouraging shifts from passenger car use toward alternative modes of transportation. The Strategic Management Plan: 2015-2020 contains a statewide VMT reduction target of 15 percent by 2020 relative to 2010 levels and targets to triple biking and double walking and transit by 2020, compared to the 2010-2012 California Household Travel Survey Baseline.[13] Additionally, Caltrans's Active Transportation Program facilitates active transportation programs and infrastructure throughout the state. Caltrans's District 11 (San Diego and Imperial Counties) is also studying freeway capping as a way to use land atop freeways to better connect communities and make walking and biking viable and attractive, and has engaged the local community to consider a future cap over State Route 94.[14]

ARB is responsible for developing statewide programs and strategies to reduce the emission of smog-forming pollutants and toxics by mobile sources. These include both on- and off-road sources such as passenger cars, motorcycles, trucks, buses, heavy-duty construction equipment, recreational vehicles, marine vessels, lawn and garden equipment, and small utility engines.

Looking to the future, ARB's Mobile Source Strategy[15] contains a suite of measures that are being considered to simultaneously meet air quality standards, achieve GHG emission reduction targets, reduce petroleum consumption, and decrease health risk from transportation emissions over the next 15 years. California's Sustainable Freight Action Plan[16] is part of the broader mobile source strategy for on-road heavy-duty vehicles, and includes efforts to reduce nitrogen oxide ($NO_X$) emissions at the state and federal levels and to encourage freight electrification. Figures 1 and 2 below illustrate both past emission reduction trends and projected future reductions as a result of elements of the Mobile Source Strategy (and based on EMFAC2014[17]).

11 *https://www.arb.ca.gov/cc/sb375/sb375.htm*
12 *https://www.opr.ca.gov/s_sb743.php*
13 *http://www.dot.ca.gov/perf/library/pdf/Caltrans_Strategic_Mgmt_Plan_033015.pdf*
14 *http://www.dot.ca.gov/dist11/departments/planning/planningpages/capstudy.htm*
15 *http://www.arb.ca.gov/planning/sip/2016sip/2016mobsrc_dd.pdf*
16 *http://www.arb.ca.gov/gmp/sfti/sfti.htm*
17 ARB's EMFAC2014 model assesses emissions from on-road vehicles including cars, trucks, and buses in California, and represents ARB's current understanding of motor vehicle travel activities and their associated emission levels.

**Figure 1: Statewide annual $NO_x$ emissions (tons/day) between 2000 and 2030 based on EMFAC2014.**

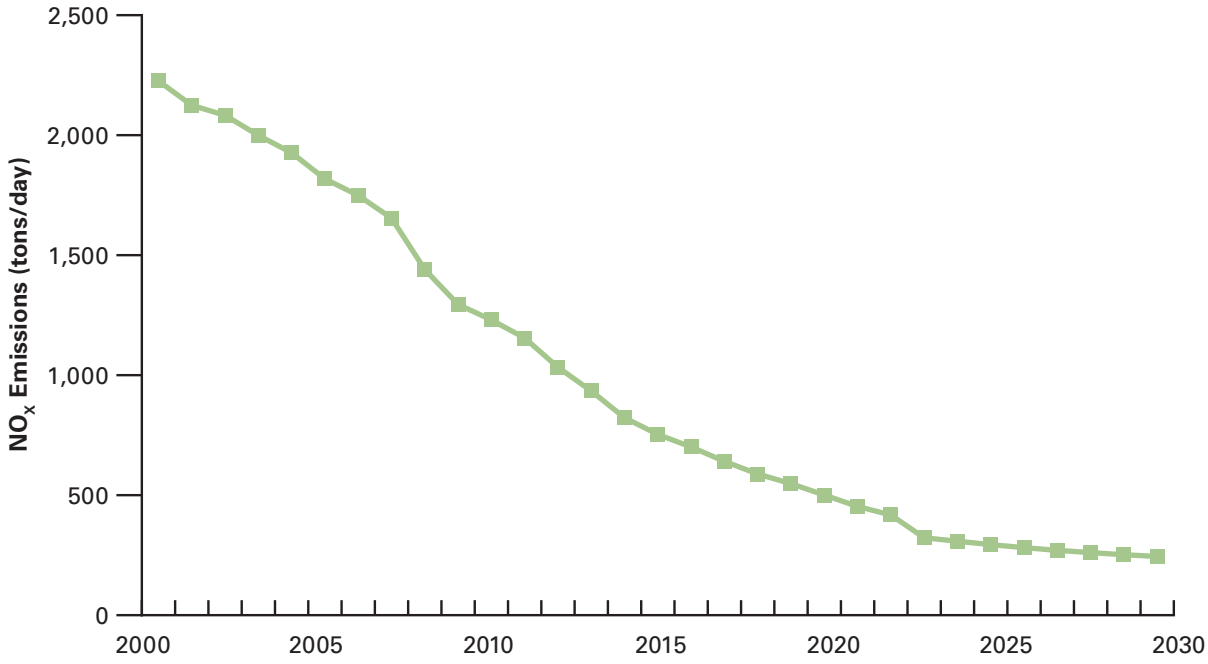
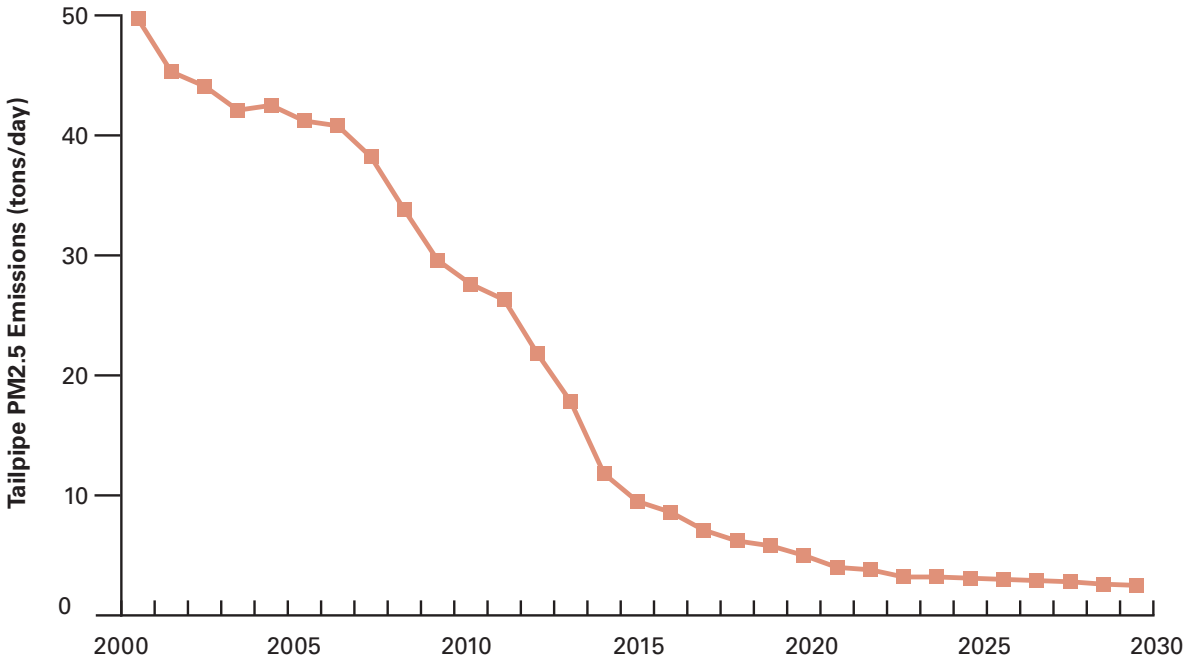



**Figure 2: Statewide annual PM2.5[18] tailpipe emissions (tons/day) between 2000 and 2030 based on EMFAC2014.**




18 PM2.5 is particulate matter with a diameter of 2.5 micrometers or less.

## Reducing exposure to traffic emissions

ARB sponsors research and develops programs and regulations to improve Californians' health by identifying and reducing exposure to air pollutants in both indoor and outdoor environments. Research, sponsored by ARB and others, has revealed a variety of strategies that can be used to reduce exposure when traffic emissions cannot be avoided. These strategies are of great interest to ARB, but it is beyond the authority of ARB to regulate or require that they be implemented. Instead, ARB has historically provided guidance—based on scientific studies and peer-reviewed literature—to agencies with land use authority. In this capacity, ARB has provided guidance on the following, related to reducing the exposure of at-risk populations/communities to traffic emissions.

The 2005 Land Use Handbook recommends that health protective distances (500 feet at minimum, if there is no site-specific information available) be implemented to separate sensitive uses from freeways, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.[19] This recommendation is based on research showing that pollutant concentrations decline significantly as you move farther away from pollution sources, including freeways and other busy traffic corridors [13-15] and epidemiological studies that indicate that spending time in proximity to traffic emissions sources may lead to adverse health effects beyond those associated with regional air pollution in urban areas [16-21].

Much research has taken place since the publication of the Land Use Handbook, and while vehicle emissions rates have declined because of increasingly stringent emissions standards for cars and trucks, recent studies continue to show high near-roadway concentrations and serious health impacts linked to traffic emissions [22-24]. Studies also show that these pollutant concentration gradients can change with traffic patterns, meteorology, and time of day [25, 26, 27-30]. Pollution concentrations near high-volume roadways decline with distance more sharply during the daytime than during the night and the very early morning (i.e., 1-2 hours before sunrise), largely as a result of diurnal meteorological patterns [25, 26, 27, 31]. These research findings—explained in more detail in the text box "*Time-of-day and air pollution concentrations*" (page 20)—highlight the possibility that near-roadway pollution exposure had been previously underestimated and that people living as much as 1,000 feet from freeways were being adversely impacted by poor air quality at night and in the early morning. However, additional research demonstrates that there are alternative strategies that can protect public health while not dictating development patterns.

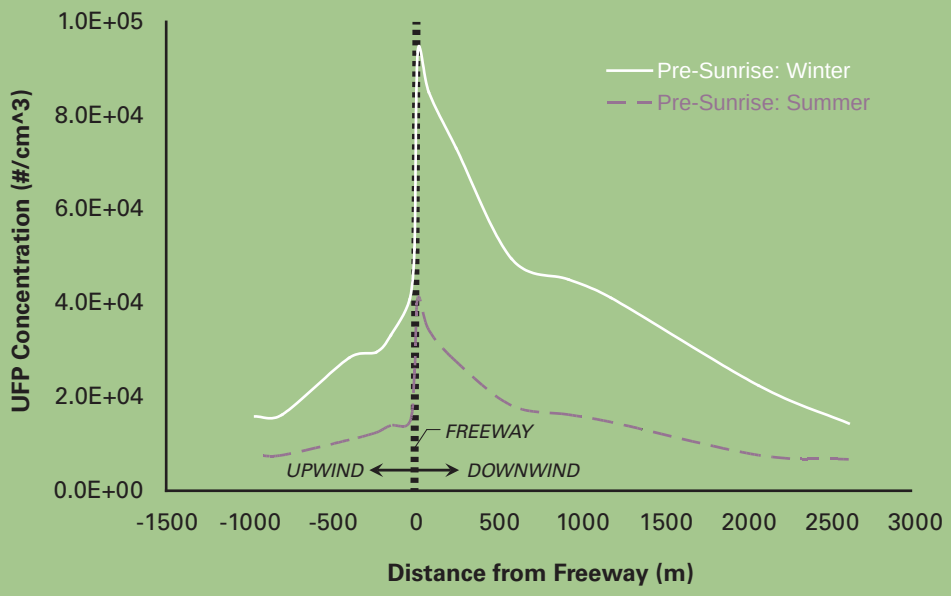
19 *http://www.arb.ca.gov/ch/landuse.htm*

## Time-of-day and air pollution concentrations

In a study measuring near-roadway ultrafine particulate matter (UFP) size distributions and concentrations along the Interstate 405 freeway, Zhu et al. [25] found that UFP concentrations decreased with downwind distance from the freeway at night, but at a slower rate than is typically observed during the day.

This finding sparked additional studies to characterize night-time and pre-sunrise pollution concentrations. These studies were motivated by concerns that near-roadway pollution exposure had been previously underestimated and that many people living more than 300 meters (984 feet) from freeways were being adversely impacted by poor air quality at night and in the early morning. Like Zhu et al., these studies found both seasonal and diurnal differences in the rate of decline for pollution concentrations with increasing distance from pollution sources. Winer et al. [32] found that, before sunrise, UFP concentrations did not return to background levels until 2,600 meters (8,530 feet) from the freeway. Later in the morning and afternoon, pollutant concentrations exhibited the typical daytime downwind decrease to background levels within 300 meters (984 feet) downwind of the freeway.

**Figure 3: UFP concentrations and gradients along the pre-sunrise route by season. Positive distances are downwind and negative distances are upwind from the I-10 freeway. Image: Winer et al.**




Choi et al. [26] observed significant extensions of freeway plumes (~2 kilometers or 1.2 miles) in the stable pre-sunrise periods, much longer than typical daytime plumes measuring ~150-300 meters (~493-984 feet). Also, the researchers calculated a pre-sunrise dilution rate coefficient that is about 10 times lower than dilution coefficient measured during the daytime.

These recent studies highlight the importance of protecting at-risk populations/communities from traffic emissions and indicate that exposure reduction strategies may be needed to protect people that live and spend time in environments that are more than 500 feet from high-volume roadways. This does not mean that nothing should be developed within this distance. In fact, as previously discussed, a compact development pattern is a key strategy in reducing GHG emissions and improving public health through physical activity and it has many other benefits. Instead, planners and developers may want to consider siting non-sensitive uses and developments that will be primarily used and occupied during the daytime—such as commercial uses and offices. In addition to optimizing land use when near-roadway pollution concentrations drop off more sharply with distance, commercial and office buildings are often equipped with indoor filtration systems that can remove particulates from the air inhaled by building occupants, and these buildings are more likely to have permanently closed or sealed windows. This means that, when these buildings are sited close to roads, people that spend time in them are less likely to breathe harmful pollutants and experience negative health impacts. Plus, people typically spend less time at work than at home, meaning that the duration of exposure at work is shorter. These approaches, along with strategies to reduce traffic emissions, disperse pollution and clean indoor air—all discussed in this Technical Advisory—will reduce exposure.

## Strategies to reduce air pollution exposure near high-volume roadways

In spite of past successes and ongoing efforts to improve near roadway air quality in California, exposure to traffic pollution is still a concern because pollution concentrations and exposure levels near high-volume roadways continue to indicate that there is a lingering public health concern. In addition, the Office of Environmental Health Hazard Assessment (OEHHA) recently revised its methodology for risk assessment in order to estimate more accurately the health impacts of exposure. This reanalysis has resulted in a revision of cancer risks from exposure to toxic air contaminants, including those emitted by transportation-related sources, to significantly higher levels.[20] ARB forecasting models also indicate that air quality issues will persist even with changes in vehicle technologies and increasingly stringent emissions and fuel regulations. Finally, ARB does not currently regulate non-tailpipe emissions—like tire- and brake-wear—and noise. Scientific literature links these to health effects. Therefore, despite existing efforts they are likely to continue to impact near-roadway public health.

For these reasons, ARB recommends that strategies to reduce emissions, increase dispersion, and remove pollution from the air  be implemented to reduce health risks. Many such strategies have been studied and published in peer-reviewed scientific literature. Results can vary based on the specifics of the studies performed, but comprehensive literature reviews conducted by ARB have identified several strategies that consistently and effectively improve air quality and reduce exposure to traffic-related air pollution, particularly where people spend time near high-volume roadways. The specific criteria that ARB used in its evaluation of potential exposure reduction strategies includes the following.

1. Consistent findings from multiple studies support the strategy as a means for reducing pollution concentrations, or emissions rates, or improving air flow to disperse pollutants.
2. Evidence of significantly effective exposure reduction is documented in the scientific literature.
3. Diversity in the study methods supports consistent findings (such that strategy efficacy does not exclusively rely on one method of investigation).

If literature reviews revealed that all criteria were met, ARB staff included the strategy in this document. In Section II, readers will find a comprehensive discussion of each strategy, including scientific findings and "appropriate context and other considerations."

20 *https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0*

## Important overarching considerations in selecting strategies

In addition to the strategy-specific considerations outlined in Section II, readers should be mindful of important overarching considerations that were identified by ARB staff and others consulted in the process of compiling these strategies. All of these should be considered regardless of the types of exposure reduction strategies being considered by planners and other users of this document.

### Changes in land use patterns and the built environment are changes that last

The durability of the built environment means that land use patterns, once established, remain fixed for decades. This can both help and hinder compact and infill development and the promotion of alternative transportation. In cities like New York, Boston, and Philadelphia, which developed prior to the widespread use of personal cars, established land use patterns have facilitated density and the viability of transit, biking, and walking. Conversely, where a majority of development occurred when personal cars were prevalent, low-density development and separated land uses necessitate driving to access key destinations [3].

Increasing density through infill development helps to transform low-density neighborhoods to ones that can support alternative modes. When developing new plans and projects, planners should carefully consider the ongoing influence of those plans and projects on public health, sustainability, and community goals to support accessible and livable neighborhoods. Some of the exposure reduction strategies listed in this document will have long-term effects on the built environment. In the case where durable changes will be made to the urban fabric, planners should consider how long-run variables might influence their selection from the exposure recommendations strategies recommended by ARB.

### Holistic and comprehensive planning practices

Stakeholders involved in public health, air quality, and community planning efforts must weigh a variety of factors and issues when making policy decisions. Vulnerable populations' exposure to traffic is just one of many considerations, but it is an important piece that should be weighed alongside other local goals and priorities. For this reason, it is recommended that exposure to traffic emissions and strategies to reduce exposure be considered within planning processes at the scale of a neighborhood or community plan or ordinance, general plan, and sub-regional or regional plan, depending on the geographic impact and regulatory context of the issue. In this way, planners and other local officials can proactively consider near-roadway factors in their broader, holistic planning processes.

Another important part of holistic planning is considering how combinations of practices, policies, and strategies can be leveraged to achieve local goals. Few scientific studies examine the combined effect of strategies to reduce air pollution exposure, but there is real-world evidence that a suite of strategies yields better results than those implemented in isolation. For example, when multiple strategies were employed to reduce downtown traffic congestion in Atlanta during the 1996 Summer Olympic Games, ozone pollution and childhood asthma events decreased significantly (*see textbox on the next page for more details*).

Additionally, there is evidence that increasing density and urbanization should be implemented in combination with efforts to expand transit, walking, and biking in order to ensure that mobility needs are met without necessitating the use of a vehicle [33-39].

### Site-specific considerations

Site-specific factors may play a significant role in whether or not an exposure reduction strategy will be effective without resulting in negative, unintended consequences. Specific factors that are important to consider include topographical, meteorological, and time-of-day factors (e.g., roadway versus development height, wind direction, and pollutant concentration). For example, both traffic management and high efficiency filtration for indoor air may be particularly important

## Case study of the 1996 Summer Olympic Games in Atlanta: The impact of changes in transportation and commuting behaviors on air quality

The 1996 Summer Olympic Games in Atlanta, Georgia provided a unique, real-world opportunity to study the traffic, air quality, and public health outcomes of a holistic, integrated alternative transportation strategy. This strategy was developed in preparation for the Games by the City of Atlanta to mitigate anticipated traffic congestion and to enable travel between Olympic events for the more than 1 million visitors. Moreover, Atlanta hoped that the strategy would avoid additional summertime ground-level ozone-related air quality violations. The strategy included a suite of travel-demand management measures, including the following: (1) a 24-hour public transportation system, (2) the addition of 1,000 buses for park-and-ride services, (3) use of alternative work hours and telecommuting by local businesses, (4) the closure of the downtown sector to private cars, (5) alterations in downtown delivery schedules, and (6) public notifications of potential traffic and air quality problems.

Researchers studied the effect of this alternative transportation strategy by comparing the 17 days of the Olympic Games (July 19 – August 4, 1996) to a baseline period consisting of 4 weeks before and 4 weeks after the Games. They looked at citywide acute care visits and hospitalizations for asthma and non-asthma events, concentrations of major air pollutants, meteorological variables, and traffic counts. Results showed decreased traffic density, especially during the critical morning period. This was associated with a prolonged reduction in ozone pollution and significantly lower rates of childhood asthma events [40].

to employ in development along a high-volume roadway where there will be a cumulative pollution burden. Local context is also important; some strategies herein work better in urban environments than in suburban or rural contexts. Drawbacks associated with some strategies may make them unacceptable for a specific site. For example, while stop signs may mean increased emission rates at some intersections, planners may determine that they are more appropriate than implementing a roundabout at that particular location, for a variety of reasons. Also, local planners may wish to eliminate from consideration any strategy that, in the local context, would increase VMT and therefore overall emissions. If such factors are considered as part of a detailed planning process, such as the development of a specific plan, a project-specific or parcel-specific analysis may be avoided.

When strategies are incorporated into large-scale policy documents, such as jurisdiction-wide general plans that direct planning processes for new developments, a menu of strategies and language about the usefulness of site-specific analysis to assist in choosing the right strategies for specific projects may be appropriate, since not all strategies are necessary or appropriate in all cases.

## Changing vehicle fleets and impacts on air quality

California's vehicle fleets and freight system are becoming cleaner, and this trend will continue into the future, given existing and forthcoming policies and transformations underway in the automobile market. ARB programs, like those previously noted in the section "State programs to improve air quality and reduce exposure to traffic emissions" (*page 9*), are helping to usher in this transition. This fact should be considered in local decision-making, particularly when long-term, durable strategies are being considered, such as urban design changes or standards.

However, while transitioning to ZEVs eliminates tailpipe emissions, it does not eliminate all traffic emissions. Non-tailpipe particulate matter emissions—like road dust, tire wear, and brake wear—currently account for more than 90 percent of PM10 and 85 percent of PM2.5 emissions from traffic. Both epidemiological and toxicological studies show an association between these pollutants and cardiovascular and pulmonary effects [41]. In a review of published literature examining how the transition to EVs may effect PM10 and PM2.5 emissions, researchers confirmed a positive relationship between vehicle weights and non-exhaust PM emission factors, and also found that ZEVs are, on average 24 percent heavier than equivalent internal combustion engine vehicles (ICEVs) [42]. This makes PM10 emissions from ZEVs roughly equivalent to PM10 emissions from modern ICEVs. PM2.5 emissions from ZEVs are about 1-3 percent less than PM2.5 emissions from conventional cars. This study concludes that, absent efforts to reduce vehicle weights and otherwise mitigate PM emissions, PM10 and PM2.5 levels could remain steady with the EV transition.

Furthermore, ZEVs do not eliminate upstream emissions from non-renewable energy sources or sources linked to their manufacture and production [10]. Using a life cycle approach, some studies have found a modest increase in emissions associated with ZEV production compared to the production of ICEVs [43, 44]. Other studies emphasize the importance of the energy sources used to produce the electricity for ZEVs. They demonstrate that, in some cases, carbon-intense grid mixes can actually translate to greater per-mile $CO_2$ equivalent emissions from ZEVs relative to conventional cars [44-46].

## On-roadway exposure to traffic emissions

Exposure to vehicle emissions also occurs when people use the roadways, whether or not they live or work near them, and past studies show that on-road pollution concentrations can far exceed ambient concentrations. On-road ultrafine particulate matter (UFP) concentrations, for example, typically range from 10,000 to 500,000 particles/$cm^3$, which is 1-2 orders of magnitude greater than typical ambient levels [15]. These high on-road concentrations mean that people may experience a large proportion of their total daily UFP exposure while driving, depending on where and how long they drive. Based on data from Los Angeles, Fruin et al. [47] found that 36 percent of total daily exposure to ultrafine particulate matter (UFP) resulted from drive time even though only 6 percent of the day (~90 minutes) is spent driving on these roadways by the average Californian. These exposures can be reduced three ways: (1) by reducing on-road concentrations and (2) by reducing time spent driving on roadways, and (3) via in-vehicle air filtration. Reducing time spent driving is an important point for planners to consider, since it is crucial that they avoid making land use decisions that would result in longer commutes. In other words, planners should avoid new development farther from key destinations because this could induce longer vehicle trips and thus increased on-roadway exposure.

Users of this document should also be aware that it is possible that some of the exposure reduction strategies herein—specifically solid barriers and vegetation—could have the effect of increasing on-road pollution concentrations, but study results are mixed [48, 49]. Some field studies that have found increased on-road concentrations attribute this to the possibility that barriers block air flow across the roadway that would, in the absence of a barrier, carry pollution off the roadway. When meteorological conditions and windspeed and direction create the conditions for the entrapment of on-road pollution, some modeling studies also demonstrate this phenomenon. Hagler et al. found that on-road pollution concentrations may increase as barriers

grow taller, too [50]. On the other hand, there is also research that contradicts these results. In field studies in Phoenix, AZ, Bauldauf et al. found that concentrations on the highway upwind of the barrier were similar to those measured in the absence of the barrier [51]. These studies suggest that it is very important for planners and others to consider local meteorology when deciding if and how to design certain exposure reduction strategies, which is consistent with the abovementioned overarching consideration regarding the use of site-specific information when it is available and when issues like elevated on-road pollution concentrations are a relevant concern.

While on-road pollution concentrations are concerning, it is also worth noting that many new passenger vehicles are equipped with on-board air filtration that helps to remove particles from the air breathed by the people traveling in the cabin of the car. Xu et al. found that typical commercially available filters exhibit a range of particle removal efficiencies (up to 60 percent), and some thicker filters are even more effective [52]. A study by Zhu et al. found that maximum in-cabin protection from UFPs (approximately an 85 percent reduction in UFP concentration) could be achieved when the in-cabin fan and recirculation settings were on [15]. There are many variables that influence filter efficacy, however, including age, maintenance, and driver behavior when it comes to operating their vehicles. When old filters are not replaced or when windows are open while traveling on roadways, for example, exposure concentrations may be very high [15].

## Translating research into practice

Putting research into practice can be challenging since research studies often seek to address narrowly defined questions and control for factors that are commonly observed in the real world. For this reason, research findings may not always be entirely reflective of real world conditions, so users of this Technical Advisory should consider how the research applies to the specific context being considered.

Additionally, even when research is based on data collected in the real-world, the data may be several years old by the time that researchers are able to digest, analyze, and summarize findings and conclusions. For this reason, it may be necessary for planners and the users of this document to consider how changes in the local context may have affected the variables that researchers considered in their analyses. For example, improvements in vehicle technology and controls for diesel emissions from trucks may mean that concentrations of some pollutants are lower today than they were when the data were collected. However, ARB cautions against making assumptions about how health outcomes may be affected by these changes, since health effects are related to a suite of variables, not just emission rates and pollution concentrations.

## Ongoing research and other resources

New studies are currently underway and results are constantly emerging from the literature. Appendix A, "Strategies not meeting ARB's criteria at this time" (*page 42*), includes exposure reduction strategies that did not meet all three ARB's following criteria required for inclusion: (1) consistent findings from multiple studies, (2) evidence of significantly effective exposure reduction, and (3) diversity in the study methods used.

In the years to come, these strategies may emerge as promising exposure reduction strategies as a result of additional investigation or updated techniques for more successful implementation.

ARB collaborated with many partner agencies and organizations to produce this Technical Advisory, and in the process, learned of many additional resources that stakeholders will find useful, including the following:

- The United States Environmental Protection Agency (U.S. EPA) sponsors research related to near-roadway air pollution exposure, and as such, recently published a report outlining strategies for reducing exposure at schools. Many of the strategies found in the U.S. EPA document, titled "Best Practices for Reducing Near-Road Air Pollution Exposure at Schools" complement strategies found in this Technical Advisory. To access the U.S. EPA report, visit: *https://www.epa.gov/schools/best-practices-reducing-near-road-air-pollution-exposure-schools.*
- The Bay Area Air Quality Management District (BAAQMD) provides tools, guidance, and information to promote "healthy infill development" from an air quality perspective. The guidance is also intended to encourage Bay Area local governments to consider and address local air quality issues in the planning and development stages. In 2016, BAAQMD published "Planning Healthy Places," which provides recommended best practices for reducing emissions from and exposure to local air pollution sources. BAAQMD's guidebook is accompanied by an interactive web-based mapping tool that illustrates where best practices are recommended and where "further study" is recommended to assess the local concentrations of TACs and fine PM, and therefore the health risks from air pollution" (pg. 12). To access BAAQMD's document and interactive map, visit: *http://www.baaqmd.gov/plans-and-climate/planning-healthy-places.*

ARB encourages users of this Technical Advisory to consult with local air quality experts as they weigh the options presented in this document. Air districts, like BAAQMD may also have useful localized information to aid in the decision-making process. Finally, given the evolving nature of the science, ARB will continue to update documents and websites with the most current information, which can be found at: *https://www.arb.ca.gov/ch/landuse.htm*.

# Detailed Description of Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways

This section details strategies to reduce air pollution exposure near high-volume roadways identified by ARB staff from academic literature and ARB-funded research. These strategies are organized into three categories:

1. Strategies that reduce traffic emissions,
2. Strategies that increase dispersion of traffic pollution, and
3. Strategies that remove pollution from the air .

Each strategy presented below includes a description of relevant research findings as well as a summary of the "appropriate context & other considerations" that planners and policy makers should be take into account as they make decisions about which exposure reduction strategies they might include in policy-level documents or on a case-by-case basis. The "other considerations" portion for each strategy also includes a discussion of potential co-benefits and drawbacks.

## Strategies that reduce traffic emissions

### 1: Speed reduction mechanisms, including roundabouts

**FINDING:** Vehicle speed reduction mechanisms change the design and operating speed of the road by altering the physical characteristics of the road. These features can reduce stop-and-go driving and hard accelerations and thereby reduce emissions rates. Some of these features, like the roundabout intersection, can be used as an alternative to stop-controlled and signalized intersections. Studies show that roundabouts can reduce localized pollutant concentrations compared to intersections with stop and signal control by 20 percent or more (depending on context and site-specific conditions).

**APPROPRIATE CONTEXT & OTHER CONSIDERATIONS:** Transportation planners and engineers should carefully consider the potential direct and indirect effects of implementing speed reduction mechanisms to determine if they will reduce vehicle emissions and other impacts to the environment as well as to traveler safety and delay. When guidance is needed to estimate emissions and air quality-related effects, planners and engineers may consult with MPOs or traffic modeling experts.

Street, highway, and freeway ramp intersections have been found to be pollution hot spots. This is mainly due to frequent deceleration and acceleration and the increased frequency and duration of idling at intersections. As a result, intersection alternatives that reduce the frequency of stops, acceleration, and idling can generally benefit air quality at and around intersections.

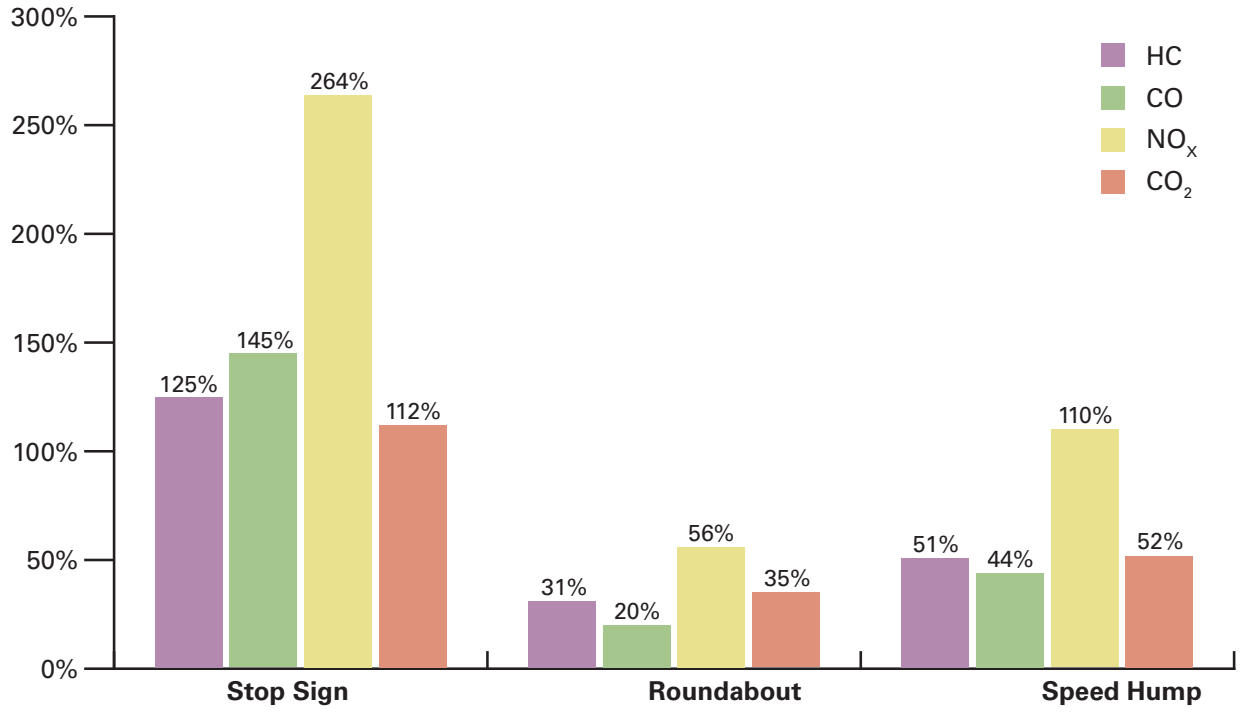
Speed reductions mechanisms, such as roundabouts, can be implemented to smooth traffic flow. Roundabouts can be used in lieu of stop signs or signal controls in order to decrease hard accelerations and decelerations and encourage driving speeds that fall within the optimal range for minimizing emissions rates and fuel consumption. A roundabout is an example of an

intersection-specific speed reduction mechanism that can be implemented to reduce pollution concentrations, and produce other transportation system benefits.

**Roundabouts**

Several studies have found that roundabouts generate substantially less air pollution from vehicles than stop-controlled intersections. Ahn and Rakha [53] found that roundabouts reduce emissions of hydrocarbons (HC), carbon monoxide (CO), nitrogen oxide ($NO_x$), and carbon dioxide ($CO_2$) by 75, 86, 79, and 69 percent respectively, compared to stop-controlled intersections. Figure 4 shows how emissions levels changed compared to a no-control scenario and illustrates how roundabouts and speed humps—another speed reduction measure—compare to a two-way stop controlled intersection (with stop signs on the minor leg approaches). These data were produced using a mathematical model that estimates emission rates using second-by-second speed and acceleration measurements collected by researchers at a specific intersection located in Arlington, VA.

**Figure 4: Relative increases in emissions for various intersection treatments (compared to no treatment) as measured at an experimental site in Arlington, VA. Image derived from: Ahn and Rakha 2009.**




Höglund [54] found when a traffic signal intersection was changed to a roundabout, the HC emission per vehicle per kilometer travelled decreased by 36 percent. Várhelyi [55] used the "car-following" method and showed that replacing a signalized junction with a roundabout decreased CO emissions from vehicles by 29 percent, $NO_x$ emissions by 21 percent, and fuel consumption by 28 percent. Mandavilli et al. [56] found a statistically significant decrease in the emissions from vehicles when a modern roundabout replaced a stop-controlled intersection for six sites with different traffic volumes. In particular, the reductions were 21-42 percent for CO, 16-59 percent for $CO_2$, 20-48 percent for $NO_x$ and 17-65 percent for HC.

While the research literature shows mostly positive performance results for roundabouts from the emissions and air pollution perspective, some studies illuminate their limitations. Ahn et al. [57] find that, at the intersection of a high-speed road with a low-speed road, an isolated

roundabout does not necessarily reduce vehicle fuel consumption and emissions compared with other forms of intersection control (stop sign and traffic signal control). In fact, the case study found that the roundabout in this context results in a significant increase in vehicle fuel consumption and emission levels compared with a two-way stop. The researchers attribute this finding to the fact that, as demand increases, traffic at the roundabout experiences a substantial increase in geometric delay (the increase in travel time as vehicles must navigate the roundabout more slowly) in comparison with the use of signal control.

**Appropriate context & other considerations**

It is important that speed reduction mechanisms and roundabouts be evaluated with site-specific conditions and context in mind in order to ensure that these road design elements achieve sought-after emissions reductions and other benefits. Many resources are available to assist with the selection, planning, and design of speed reduction mechanisms and roundabouts, including (but not limited to) the following:

- FHWA Roundabout Website: *http://safety.fhwa.dot.gov/intersection/roundabouts/*
- Roundabouts: An Informational Guide, Second Edition (NCHRP Report 672):
- *http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_672.pdf*
- National Association of City Transportation Officials Urban Street Design Guide: *http://nacto.org/publication/urban-street-design-guide/design-controls/design-speed/*
- AASHTO's Strategic Highway Safety Plan: *http://safety.transportation.org/htmlguides/speeding/section01.htm*
- FHWA Roundabout Outreach and Education Toolbox: *http://safety.fhwa.dot.gov/intersection/roundabouts/roundabouttoolbox/*

Depending on site-specific conditions, speed reduction mechanisms can result in improved safety; specifically, fewer fatal crashes and less serious injuries when crashes occur. The FHWA Office of Safety identified roundabouts as a Proven Safety Countermeasure because of their ability to substantially reduce the types of crashes that result in injury or loss of life. Roundabouts reduce vehicle speed and the number of conflict points at the intersection, which provides safety benefits for vehicles, pedestrians, and bicycles. Single lane roundabouts produce the lowest vehicle speeds and fewest number of conflict points compared to multi-lane roundabouts and traditional signal and stop-controlled intersections. The FHWA document, "Roundabouts: An Information Guide,"[21] states, "While overall [and especially severe] crash frequencies have been reduced, the crash reductions are most pronounced for motor vehicles, less pronounced for pedestrians, and equivocal for bicyclists, depending on the study and bicycle design treatments" [58-60].

While roundabouts are not expected to reduce vehicle emissions at all intersections (refer to above mentioned case study by Ahn et al.), [57] roundabouts have been proven to be effective at freeway interchange ramp terminals. FHWA guidance indicates that roundabouts can help create a transition area that moves traffic from a high-speed to a lower-speed environment.

Regarding design and engineering requirements for roundabouts, Caltrans and FHWA provide guidance to help local planners and engineers, including the following:

- The California Manual of Uniform Traffic Control Devices (MUTCD) provides standard guidance on roundabouts as an alternative to traffic signal control; see Part 4, Chapter 4C, Section 4C.01 Studies and Factors for Justifying Traffic Control Signals.[22]
- The Caltrans Intersection Control Evaluation (ICE) Policy Directive (TOPD13-02) and website provide direction and guidance on the evaluation of highway project proposals that create new, and expand or modify existing, intersections and interchanges. Caltrans established ICE to ensure the objective consideration, evaluation, and comparison

21 *https://www.fhwa.dot.gov/publications/research/safety/00067/index.cfm*
22 *http://www.dot.ca.gov/trafficops/camutcd/*

of roundabouts with traditional and other innovative intersection solutions.[23]

In all cases, roundabouts should be designed to satisfy the engineering principles outlined in the FHWA Informational Guide on Roundabouts, published as NCHRP Report 672.[24] This will generally produce the range of vehicle speeds that are capable of reducing vehicle emissions and the potential for crashes (as described above). Local and other agencies responsible for the operation of streets and highways are advised to employ qualified traffic analysts and engineers to evaluate, design and oversee their first roundabouts. Roundabout implementation in some communities may require consultation with local agencies that may be affected by these intersections, including (but not limited to) operators of transit, waste disposal, delivery, and emergency response vehicles. Planners should also consult with their local air quality management district to see if it provides additional recommendations for this type of strategy.

It is advisable to establish an education campaign for communities that are planning to construct roundabout intersections for the first time to accelerate understanding and acceptance of roundabouts in communities that do not yet have a modern roundabout intersection. This can inform travelers and others who will be affected by a roundabout of other advantages and co-benefits attributed to roundabouts (e.g., roundabouts can improve aesthetics and reduce operating & maintenance costs compared to signalized intersections).

## 2: Traffic signal management

**FINDING:** Traffic signal management systems can reduce stop-and-go driving and vehicle idling, resulting in reduced localized pollutant concentrations of up to 50 percent compared to corridors that do not implement these systems. Studies show that site-specific conditions dictate the magnitude of reductions.

**APPROPRIATE CONTEXT & OTHER CONSIDERATIONS:** Many different types of signal management are available, and planners should identify what is best for air quality, vulnerable road user safety, and transit and active mode throughput and comfort.

Traffic lights are widely used at intersections to reduce traffic speed, avoid traffic accidents and crashes, and improve safety for road users. However traffic lights can also increase idling, deceleration, and acceleration of vehicles, and therefore increase air pollutant emissions from vehicles. Coelho et al. [61] found the presence of traffic signals can increase CO, NO, and HC emissions from vehicles by about 15 percent, 10 percent, and 40 percent, respectively. Different traffic signal schemes may have different impacts on vehicle emissions [62]. Signal strategies that prioritize enforcement of the speed limit may result in more stops for all traffic, and therefore lead to higher emissions from vehicles. Signal strategies that are more tolerant on speed enforcement may achieve lower emissions.

Traffic signal coordination has been found to be a potentially effective strategy to reduce vehicle emissions by several modeling studies. Rakha et al. [63] found a well-timed green wave (all vehicles only need to stop at the first traffic signal along a road section) can reduce the emissions of HC, CO, and $NO_X$ from vehicles by 50 percent, compared with extreme cases of all vehicles having to stop at all signals. De Coensel et al. [64] simulated vehicle emissions for an urban arterial road with a speed limit of 50 kph, and five consecutive traffic signals spaced at a distance of 200 m from each other. This study found that the introduction of a green wave could reduce the emissions of $CO_2$, $NO_X$, and PM10 by 10-40 percent. The largest reduction of vehicle emissions may be achieved when traffic intensities are close to road capacity and the green split (the ratio between the amount of green light time and the traffic light cycle time) is high. The introduction

23 *http://www.dot.ca.gov/trafficops/ice.html*

24 *http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_672.pdf*

of a green wave also reduced noise levels near traffic signals; however, noise levels between intersections increased. A study in China showed that, by increasing the green split of the major direction by 5 percent, the emissions of CO, HC, and $NO_X$ of different vehicle categories decreased in the range of 2.6-14.6 percent [65].

Positive environmental impacts of traffic signal coordination have also been confirmed in measurement studies. Unal et al. [66] performed on-board air pollutant emission measurements along two signalized arterial roads in North Carolina and found that, depending on the type of vehicles and the level of congestion, the implementation of traffic signal coordination reduced the HC, NO, and CO emissions per unit of distance by 10-20 percent. Similarly, Zhang et al. [67] measured the $NO_X$, HC, and CO emissions from a single vehicle driven on two roads that were similar except one had coordinated traffic signals. The results showed that the emissions of HC and CO per kilometer travelled decreased 50 percent and 30 percent, respectively, along the road with coordinated signals, but the emission of $NO_X$ per kilometer travelled was 10 percent higher.

**Appropriate context & other considerations**

It is important that planners consider site-specific factors and consult with guidance material and traffic experts before deciding to implement traffic signal management strategies. The following resources (and others) are available to assist with the selection, planning, and design of traffic signal management systems:

- FHWA Traffic Signal Timing Manual: *http://ops.fhwa.dot.gov/publications/fhwahop08024/fhwa_hop_08_024.pdf*
- Signal Timing Manual: Second Edition (NCHRP Report 812): *http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_812.pdf*

When implemented with site-specific context and other goals in mind, traffic signal management can improve safety and enable efficient movement of transit vehicles and bicycles. Regarding safety, several studies have found that coordinated signals can reduce the frequency and severity of automobile crashes. A field evaluation in Scottsdale, Arizona found that coordinated traffic signals resulted in a crash risk reduction of 6.7 percent [68] and studies from Europe found that network coordinated signals were associated with a 20 percent reduction in injury accidents at intersections [69]. Based on data from 1,345 crashes at three arterial intersections in Indiana, Li and Tarko [70] used a mixed logit model to find that crashes and severe crashes are less likely at intersections with signal coordination. Finally, a study in Phoenix, Arizona assessed five years of crash data (1993-1997) and found that crash rates at coordinated traffic signals were less than those for uncoordinated traffic signals by 14 to 43 percent.

Coordinated signals can also be designed to more efficiently move transit vehicles and other modes. With the technological infrastructure in place, coordinated traffic signals can be programmed to work in concert with transit vehicles. Recent advances in intelligent transportation system technology have made it possible for transit vehicles to communicate with signal timing infrastructure, so coordinated signals could be dynamically adjusted to allow more efficient movement of transit vehicles which not only makes them more attractive to transit riders but also reduces diesel particulate emissions from these heavy-duty vehicles. Coordinated signals can also be timed to accommodate cyclists and to give them a "green wave" along with motorists.

It is important for planners and others to consider potential effects of traffic signal management strategies when deciding if and where this exposure reduction strategy may make sense. For example, this strategy loses effectiveness when implemented where traffic volumes on cross-streets are comparable with those on the managed section. This will result in increased idling on these perpendicular sections and thus accumulating traffic emissions.

Additionally, it is possible that coordinated signals will increase vehicle throughput and VMT on the road section where it is implemented, since this strategy increases the "effective" capacity of the roadway section. Some models have shown that increased throughput is VMT shifted from

elsewhere while others attribute increased VMT to new trips generated by the increased effective capacity. Dowling [71] analyzed the net effects of a 0.5 mile long arterial signal coordination project and found that, regionally, VMT is actually reduced by -0.01 percent and emissions by 0.02-0.04 percent as a result of the project. More studies are needed to understand the broad and long-term impacts of traffic signal synchronizations, and local traffic engineers may have information that will make it possible for planners to implement this without offsetting air quality gains with increased vehicle use.

Finally, pedestrian crossings are an important consideration for traffic signal management projects. The FHWA Traffic Signal Timing Manual indicates that the time needed to serve vehicle volume is usually commensurate with a reasonable amount of wait-time for pedestrian calls, but planners should evaluate this on a site-specific basis to ensure that traffic signal coordination and the resultant timings for pedestrian crossings do not curb overall pedestrian activity.

Planners should also consult with their local air quality management district to see if it provides additional recommendations for this type of strategy.

### 3: Speed limit reductions on high-speed roadways (>55 mph)

**FINDING:** Research studies have identified an optimal average speed range of ~35-55 mph within which per-mile traffic emissions and fuel consumption are minimized. Generally, speed limit reductions on high-speed roadways can reduce tailpipe emission rates up to 30 percent, depending on the change in speed, the pollutant measured or modeled, and the roadway characteristics.

**APPROPRIATE CONTEXT & OTHER CONSIDERATIONS:** Speed limit reductions are appropriate on roadways where speed limit and design speeds exceed 55 mph.

Studies show that high speeds encountered on highways require high power output from vehicles, and this is associated with increased per-vehicle tailpipe emissions rates. Several studies have evaluated the role that speed limits play in vehicle speeds and air quality. Keller et al. [72] conducted a modeling simulation to investigate the emission impact of lowering the maximum speed limit on Swiss motorways from 120 to 80 kph (75 to 50 mph). The models predicted current total $NO_X$ release from road traffic would decrease around 4 percent, peak ozone levels may decrease by less than 1 percent, and no significant change in emissions of VOCs. Similarly, Gonçalves et al. [73] simulated the effects on vehicle emissions of the 80 kph (50 mph) speed restriction planned for the Barcelona Metropolitan area, and found the reductions on $NO_2$, $NO_2$, and PM10 levels on the affected roads reached up to 5.7 percent, 5.3 percent, and 3.0 percent on 24-h average concentration, respectively. Field measurements also confirmed the reductions of traffic-related air pollutant levels with lower speed limits. A Netherlands study monitored the changes of traffic related air pollutant levels in the direct vicinity of a highway after lowering the maximum speed limit from 100 to 80 kph (62 to 50 mph) [74]. This study found the adjusted traffic contribution to air pollutant concentrations in the vicinity of the intervention site significantly decreased by 27 percent, 11 percent, and 21 percent, for PM10, PM2.5, and black smoke, respectively.

Additionally, studies indicate that higher vehicle speeds are also associated with increased non-tailpipe emissions, including higher rates of tire wear and associated PM emissions and greater resuspension of road dust [75, 76]. Related to tire wear, researchers have measured increased PM emissions with increasing vehicle speed and have hypothesized that, as tire temperature increases with faster speeds, tires break down more readily [77]. Studies also show that more road dust tends to be re-suspended into the air when vehicles travel faster [76]; Kuhns et al. found that road dust emissions increase exponentially with increasing vehicle speeds [78].

**Appropriate context & other considerations**

Planners should consider the direct and indirect effects—including benefits and drawbacks—involved in reducing posted speed limits on high-speed roadways to less than 55 mph. Planners should also consult with their local air quality management district to see if it provides additional recommendations for this type of strategy.

Higher vehicle speeds are associated with increased risk of severe crashes and injury or death when crashes occur [79, 80]. Thus, reducing speed limits to 55 mph or less on freeways could result in safety benefits for roadway users. This assumes, however, that drivers respond to speed limit reductions. In actuality, changing the speed limit does not necessarily translate to a change in vehicle speed, as the majority of drivers drive at speeds at which they feel comfortable. This means that speed limit reductions may need to be implemented in conjunction with additional enforcement in order to ensure that drivers adhere to new speed limits. Enforcement can be implemented via police, radar, camera, or aircraft, but this comes with associated costs.

Research also indicates that the ratio of in-cabin to on-roadway pollution concentration ratios—or I/O ratios—increase with increasing vehicle speed because faster driving speed creates a larger pressure differential between the in-cabin and outside air. This causes more air exchange into the cabin from outside, and therefore exposes the people traveling in the cabin to higher pollution concentrations [81]. Xu et al. measured in-cabin I/O ratios for UFP and found that the largest UFP penetration factor and the largest I/O ratios were measured at the fasted driving speeds [52]. Thus, reducing in-cabin exposure to traffic related pollution may be a co-benefit of reducing speed limits for near-roadway exposure reduction purposes.

## Strategies that increase dispersion of traffic pollution

To date, several studies and literature reviews have evaluated how urban design in the built environment influences air pollutant levels in streetscapes [82-92]. While the majority of these are modeling studies conducted to understand air flow and pollutant dispersion in urban street canyons, they also show that urban design characteristics—including building geometry, architectural design, street canyon dimensions, and building siting—are important parameters that influence pollutant dispersion, concentration, and exposure [82, 86]. Also, a select few have identified urban design guidelines to reduce pollutant exposure [91, 93-95].

### 4: Design that promotes air flow and pollutant dispersion along street corridors

**FINDING:** The physical layout of urban streetscapes influences air flow and pollution movement. Research studies show that street corridors characterized by buildings with varying shapes and heights, building articulations (street frontage design elements like edges and corners that help break up building mass), and spaces that encourage air flow (e.g., parks) benefit from better pollutant dispersion and air quality. For example, buildings of varying heights can result in significant increases in turbulence (e.g., up to doubling), and adding bike lanes and sidewalks not only reduces car traffic, but also creates space for more dispersion (up to a 45 percent reduction in particulate concentrations).

**APPROPRIATE CONTEXT & OTHER CONSIDERATIONS:** Wider sidewalks, bicycle lanes, dedicated transit lanes, and other features that benefit alternative modes of transportation can also create space for better air flow and pollutant dispersion along with increasing active transportation and mode shift. This strategy should be considered in the context of the overall need to increase development density.

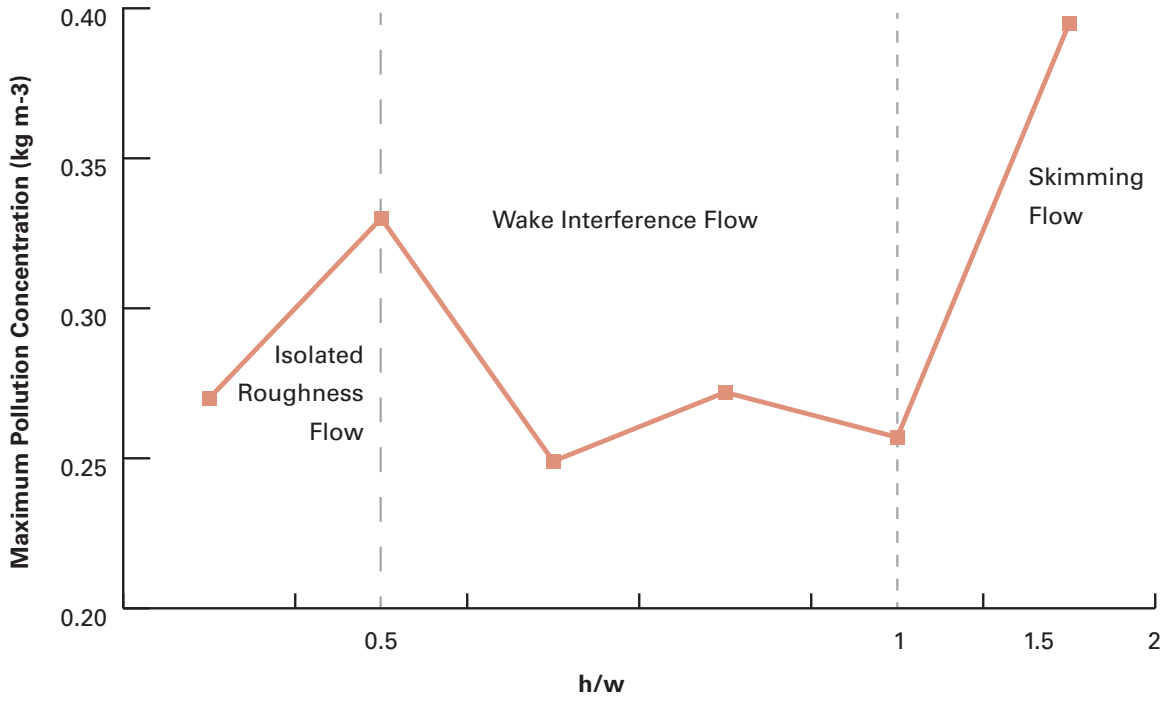
Research shows that the physical layout of urban streetscapes influences how air flows and pollutants move, and thus, planners can use this to their advantage to design buildings and streets to facilitate pollution dispersion [83, 84, 96, 97]. Key variables that planners can consider include the size, shape, and location of building and streets. This section outlines findings from modeling studies (e.g., wind tunnel simulations, computational fluid dynamics modeling, etc.) and field and measurement studies that shed light on the influence of these variables.

Many studies focus on evaluating pollutant behavior in "urban street canyons" characterized by narrow streetscapes continuously lined with buildings because they often experience "hot spots" of gaseous and particulate pollutants due to high levels of vehicular traffic and reduced ventilation flow created by the street canyon configurations themselves [98, 99]. In California, there are very few cities with traditional urban street canyons, and as such, concerns about pollution hot spots that have been raised in other cities—like Hong Kong and Manhattan—may not be relevant for current California cities. Nevertheless, the studies discussed herein can inform design choices that reduce pollutant exposures by maintaining or increasing ventilation and air flow as California's cities continue to grow and develop.

Developing uniform characterizations of pollutant dispersion and concentration in urban street canyons is challenging because differences in canyon geometry, traffic intensity and fleet mix, and local meteorological conditions translate to an almost infinite set of combinations and air quality outcomes [82, 89, 100]. While arriving at rigid guidelines for altering urban design to reduce air pollution is extremely difficult given this complexity, researchers have endeavored to identify various critical configurations to avoid when concerned about pollution concentrations [84, 100, 101]. These recommendations align with findings from studies that model the flow of pollutants through urban areas.

Numerous studies have investigated the close link between air vortex circulations that develop within the canyons and pollutant dispersion. Modeled and measured research confirms that when roof-level wind flows perpendicular to the street, a vortex circulation develops, resulting in much higher pollution levels on the downwind side of the street canyon [82, 87, 100, 102-108]. These circulation vortices are also influenced by street canyon geometry, and one variable used to measure this geometry is called the "aspect ratio" [89]. In canyon flow studies, the aspect ratio—the ratio of the building height to the width between buildings—is generally accepted as the key factor determining wind flow characteristics [83, 85, 93, 109]. Research shows that aspect ratios that describe canyons that are wider relative to their height promote better pollutant dispersion because they provide more space for ventilation flow to reach the street level [84, 100, 110-113]. This is not to say that tall buildings necessarily promote blockage, however. Using dispersion modeling validated against measurements from wind tunnels, Chan et al. [100] found that—with a fixed reference speed and fixed building height—as the street width is increased, pollutant concentrations decrease on both the upwind and downwind sides of the street. As long as the canyon aspect ratio creates a turbulence pattern that falls between stagnation flow and leeward blockage, ventilation will be promoted [84]. Figure 5 below demonstrates this concept by showing how pollution concentrations change with varying height-to-width ratios (h/w).

**Figure 5: There are three air flow regimes in urban areas that are denoted in the figure: isolated roughness flow (generally more ventilation), wake interference flow (some ventilation), and skimming flow (little to no ventilation). The figure demonstrates that street canyons with higher height-to-width ratios tend to have higher pollutant concentration. To avoid this, ARB suggests that street canyons have space for better ventilation and/or implement strategies to reduce emissions produced. Image: Chan et al. 2001.**




Studies also show that open space can increase ventilation over the city fabric [91, 114, 115]. Kaur et al. [114] found that particulate concentrations are two times higher at intersections surrounded by buildings compared to intersections adjacent to open space. Hess et al. [115] examined pollutant concentrations inside and outside seven bus stop locations in Buffalo, New York and found that the presence of undeveloped areas without vehicle access on both sides of the bus shelter or without a building on one side provide statistically significant reductions compared to a bus stop site with buildings on both sides of the street.

In addition to canyon geometry, building variables—including height, width, and roof shape—also influence air flow and pollutant dispersion. Some studies find that building uniformity (e.g., height and breadth) decreases air flow [83, 84, 89], and others find that gaps between adjacent buildings facilitate air flow and ventilation [116-118]. Roof shape and height can also influence air flow [30, 106, 119, 120]. Xie et al. used both 2D and 3D modeling to simulate the effects of different roof shapes and building geometries on vehicle emissions dispersion [106]. They found that different roof shapes lead to different circulation vortices and thereby influence air quality in the urban canyon. Huang found similar results when investigating the impact of wedge-shaped roofs on pollutant dispersion [30].

Boarnet et al. studied the effect of both canyon geometry and building characteristics on pollutant concentrations in five cities in Southern California [111]. The researchers measured PM2.5 concentrations near arterials in five cities that exhibit different development patterns, ranging from low-density auto-oriented development to dense urban areas with mid- and high-rise buildings. A regression analysis of the measurements indicated that—after accounting for meteorology, time of day, and location—higher concentrations were associated with lower wind speeds, higher temperatures, higher adjacent passenger vehicle traffic, higher ambient

concentrations, and street canyons with buildings over five stories.

While there is a large body of research that explores the interaction between building and street design and air flow, only a few studies quantify the pollution reduction. Chan et al. applied the urban form guidelines they developed through their modeling efforts to a hypothetical situation and modeled the effect of these building configuration modifications in a small district in Hong Kong [83]. These modifications included (1) altering the relative building heights—including by adding height to some buildings—to create differential heights and (2) altering the building breadth ratio. The modeled pollution levels dropped by 40 percent and 30 percent, respectively.

Acero et al. used dispersion models to calcuate $NO_2$ concentrations associated with three different urban design features—a park with trees, an open space with obstacles, and a building—in the medium-sized town of Durango, Spain [121]. The study found that removing the park with trees to leave an open space reduced $NO_2$ concentrations on the eastern part of the street by about 6.1 percent. On the other hand, the presence of a 16 meter (52 foot) building instead of trees created a recirculation vortex. This dispersed local traffic pollutants to the western side of the street, close to the new building, with the wind direction influencing the spatial variation of pollutants. This study illustrates the importance of local wind direction and orientation to the dispersion of polluants.

Schulte et al. [113] developed and evaluated a semi-empirical dispersion model to estimate surface concentrations of NO and $NO_2$. This was accomplished using empirically collected data from street canyons in Hanover, Germany to evaluate dispersion models and identify the variables that best describe the observed data. The researchers concluded that the ratio of effective building height to street width governs the dispersion of vehicle emissions. The researchers also presented three possible methods for mitigating street-level pedestrian exposure to vehicle emissions: (1) limiting vehicle traffic within streets with large aspect ratios when there is high pedestrian traffic, (2) limiting the street aspect ratio based on expected pedestrian exposure, and (3) in new developments, or where such design can be implemented, separate pedestrian and heavy vehicle traffic into different streets.

**Appropriate context & other considerations**

The research literature demonstrates that design that promotes air flow and pollutant dispersion along street corridors can take many forms. Implementing complete streets design concepts—which are characterized by wider sidewalks, bike routes or paths, and transit lanes or infrastructure—is an option that both facilitates air flow and encourages active transportation and alternative modes. Complete streets designs also have the potential to reduce VMT and therefore emissions along a corridor, particularly when vehicle lanes are converted to provide the infrastructure for alternative modes.

A recent ARB study that compared existing complete streets and "incomplete streets (streets that did not exhibit the characteristics of complete streets) found that the former may be positively associated with reductions in UFP, lower vehicle traffic volume, and more pedestrians and cyclists [122]. The research concluded, however, that these outcomes are not always a given with complete streets; context and design play an important role in influencing the direction and magnitude of the benefits. The researchers recommend prioritizing construction of complete streets in downtowns, business areas, and locations that create a contiguous network of bike, pedestrian, and transit infrastructure.

Other valuable sources of information on how to maximize the desired benefits of complete streets implementation are available from the National Association of City Transportation Officials (NACTO). Several NACTO publications provide guidance on how to design urban streets, transit streets, and urban bikeways, and include case study examples.[25] Planners should also consult with their local air quality management district to see if it provides additional recommendations for this type of strategy.

25 *http://nacto.org/*

Increasing active transportation may lead to additional health benefits that are associated with increased physical activity [123]. Also, complete streets can improve the street aesthetic, increase property values, and promote business visibility.

The literature also shows that siting or preserving parks can also improve air quality along street corridors, but care should be taken when deciding what park facilities will be installed and where these facilities should be located. For example, playgrounds or recreation fields should be located away from heavily-trafficked routes to protect children and others from concentrated emissions.

Lastly, this strategy should be considered in the context of the overarching goals to increase development density and infill. Planners should consider how this strategy can be used without spurring more dispersed development, which is associated with more vehicle travel and thus more emissions, which would undercut the environmental and health benefits. In some cases, it may be necessary to implement this strategy in specific areas in concert with other measures that will ensure that broader goals are still supported.

### 5: Solid barriers, such as sound walls

**FINDING:** Measurement and modeling studies consistently find that solid barriers reduce near-road downwind concentrations by increasing vertical dispersion of pollutants emitted by vehicles. The magnitude of the reduction and its spatial extent depend on the height of the barrier, the width of the road, and micrometeorology. As reference, studies have consistently found a concentration deficit downwind of the barrier, ranging from a 10 percent to 50 percent reduction compared to concentrations measured on or directly adjacent to high-volume roadways.

**APPROPRIATE CONTEXT & OTHER CONSIDERATIONS:** Solid barriers should only be considered for installation along freeways because they have the negative effect of dividing neighborhoods and obscuring sightlines.

Field measurement studies generally show that solid barriers, such as sound walls, can effectively and significantly reduce near-road pollution concentrations for a variety of traffic air pollutants [48, 51, 124-127]. Baldauf et al. measured concentrations of $NO_x$, PM, and air toxics behind a 1 km long barrier along Interstate I-440 in Raleigh, NC using a mobile platform and fixed sampling instruments. The study revealed that CO and PM number concentrations generally decreased between 15-50 percent behind the barrier [48]. Ning et al. also measured lower pollution concentration reductions where barriers were present along I-710 and I-5 in Southern California, compared to where they were not present [125]. Finally, a more recent field study in Phoenix, AZ—which measured $NO_2$, CO, UFP, and black carbon (BC) using both a mobile platform and fixed sites—found that pollutant concentrations behind the roadside barriers were significantly lower relative to those measured in the absence of barriers. The reductions ranged from 50 percent within 50 meters (~164 feet) from the barrier to about 30 percent as far as 300 meters (984 feet) from the barrier [51].

Modeling and wind tunnel studies, like the field studies mentioned above, also consistently find that barriers result in reduced concentrations beyond the barrier [50, 127-129]. Heist et al. conducted a wind tunnel experiment that modeled 12 configurations with and without barriers and found that all with-barrier configurations reduced the downwind ground-level concentrations compared to no-barrier configurations, though the magnitude of the reduction varied depending on the specific conditions [129]. Hagler et al. created a model to mimic the wind tunnel experiments conducted by Heist et al. and used it to observe the effect of changing variables—like the barrier height and wind direction—to test how near-roadway concentrations of pollutants might change with these different variables. The model found decreased concentrations downwind of the barrier and estimated that higher barriers would result in greater downwind reductions [50].

The South Coast Air Quality Management District recently funded a study to investigate the effect of roadside barriers on dispersion from roadways [49, 130]. Using semi-empirical modeling approaches, the study found that barrier height, freeway width, and atmospheric turbulence were key factors determining pollutant dispersion. Results from Schulte et al. are consistent with the studies above that look specifically at varying barrier heights and atmospheric stability [130].

**Appropriate context & other considerations**

Research shows that solid barriers can be effective at reducing near-roadway pollution concentrations, but many other considerations should be taken into account before deciding to implement these as a means to reduce near-roadway pollution exposure. Local planners should consider consulting with highway experts at FHWA or Caltrans and referencing some of the many resources that are available to assist with the selection, planning, and design of solid barriers, including (but not limited to) the following:

- FHWA Highway Noise Barrier Design Handbook: *http://www.fhwa.dot.gov/environment/noise/noise_barriers/design_construction/design/index.cfm*
- FHWA Guide to Visual Quality in Noise Barrier Design *http://www.fhwa.dot.gov/environment/noise/noise_barriers/design_construction/visql/index.cfm*
- FHWA Brochure, "Keeping the Noise Down: Highway Traffic Noise Barriers" *http://www.fhwa.dot.gov/environment/noise/noise_barriers/design_construction/keepdown.pdf*
- Caltrans Highway Design Manual, Chapter 1100 Highway Traffic Noise Abatement *http://www.dot.ca.gov/hq/oppd/hdm/pdf/english/chp1100.pdf*
- Caltrans Project Development Procedures Manual, Chapter 30 Highway Traffic Noise Abatement: *http://www.dot.ca.gov/hq/oppd/pdpm/chap_pdf/chapt30.pdf*

Solid barriers are only appropriate for installation along freeways. When implemented in non-freeway settings, solid barriers can increase vehicle miles traveled, disrupt community connectivity, and counteract planners' efforts to encourage walking, biking, and complete streets designs.

Research shows that there are design features of solid barriers that should be avoided in order to maximize their effectiveness in reducing pollutant concentrations near high-volume roadways. For example, gaps and edges are places where pollutants can concentrate and creep around barriers, so gaps should be avoided and edges should occur where sensitive uses will not be exposed to elevated pollution levels [50].

Some studies indicate that barriers may result in increased on-road pollution concentrations, as was discussed previously under "*Important overarching considerations in selecting strategies*" that users of this Technical Advisory should take into account. This is not observed in all cases, but it is worth considering whether or not the site-specific conditions will result in very high on-road concentrations and additional exposure reduction strategies that could be implemented in concert to reduce them. Possibilities include other strategies that would reduce roadway volumes and thereby bring down the emissions rates of the roadway segment where a barrier may be implemented.

Before implementing solid barriers, planners should inform nearby residents and the public to ensure that the community is involved in the proposal and planning of the barrier before it is implemented. FHWA finds that people's reactions to noise barriers can be mixed. In the past, residents that live near roadways reported that solid barriers make conversations and sleeping easier in their homes and that, as a result of the barrier, they are more likely to open windows and spend time outdoors. Others have complained that solid barriers restrict views, contribute to a sense of confinement, reduce circulation, and can create an eyesore if the barrier is not maintained or designed with aesthetics in mind. Additionally, if solid barriers disrupt existing

network connectivity, they could also result in an increase in vehicle miles traveled [131]. Planners should also consult with their local air quality management district to see if it provides additional recommendations for this type of strategy.

In addition to mitigating pollution exposure, solid barriers benefit near-roadway populations by reducing noise from roadways or freeways. Several studies have shown an association between roadway noise to a variety of physical and psychological health outcomes. Because noise can cause stress in humans, it may be linked to a variety of stress-related diseases, including hypertension, anxiety, and heart disease [132]. The negative health outcomes of stress are particularly serious if noise causes disruption in sleep cycles [133]. One survey of residents near a sound wall found that most felt that sleeping conditions were improved after the barrier was built [134]. Solid barriers and sound walls can reduce the loudness of traffic noise by as much as 50 percent [135].

### 6: Vegetation for pollutant dispersion

**FINDING:** Studies indicate that vegetation has the potential to alter pollutant transport and dispersion. In some studies, specific locations and conditions translated to air quality benefits (e.g., pollution concentrations of up to 20 percent on the leeward side of the tree line). It should be noted that most studies were conducted on the East Coast and in Europe where vegetation types and densities differ from what is found in California.

**APPROPRIATE CONTEXT & OTHER CONSIDERATIONS:** Online tools are available to assist with the selection of appropriate vegetation considering allergen impacts, watering needs, and other factors. Maximum benefits have been shown to occur when vegetation is combined with solid barriers.

Vegetation, including plants and trees, has been studied as a means of improving air quality by assisting in the dispersion of near-roadway pollution. Jeanjean et al. [136] modeled the effectiveness of trees at dispersing road traffic emissions and found that they can reduce ambient pollutant concentrations by increasing turbulence. Other studies have included the effect of urban parks and green belts. Experimental studies measured reductions of PM (and gases) attributable to urban parks and forests by measuring within, near and away from urban parks, finding reduced levels of PM and other pollutants ($NO_2$, $SO_2$) within and near park areas [137, 138]. Similarly, strategies such as creating green belts have been used as an environmental management strategy and appear to be successful in reducing air pollution [139, 140].

An emerging area of study examines the potential air quality impact of vegetation as a barrier and vegetation combined with solid barriers. Brantley et al. found that black carbon on the leeward side of the tree line was reduced up to 22 percent compared to the BC levels measured on the traffic adjacent side of the tree line, indicating that trees may provide some air quality improvement [141]. Baldauf et al. conducted a field study at a site in Raleigh, North Carolina that provided an opportunity to evaluate near-road air quality with no barriers, with a noise barrier only, and with a noise barrier and vegetation adjacent to the road. The study results suggested that the presence of mature trees (~10 m tall) in addition to the barrier lowered PM number concentrations beyond what was observed in the barrier-only scenario. Researchers attributed this additional reduction to increased turbulence and mixing created by the presence of the trees [48]. However, a subsequent study by Hagler et al. showed mixed results for vegetative barriers. UFP concentrations were sometimes higher and sometimes lower at the two vegetative barrier sites, which were characterized by relatively thin tree stands, one evergreen, and one deciduous (all sites were in central North Carolina). The researchers posit that study and site-specific conditions may have influenced these results, including the relative sparseness of the tree stands that acted as vegetative barriers [124].

Modeling studies also support the air quality improvement potential of vegetative barriers [128, 142, 143]. Fuller et al. [143] modeled a vegetation screen separating a freeway in Davis, California from a nearby elementary school. The modeling showed that—with the tree configurations studied—74 percent of PM impacted a tree surface. This means that the particles did not merely pass by the tree, but rather impacted and may have deposited on the tree itself. The modeling study also found that installing multiple rows of trees maximized the potential for impaction. The most recent modeling study, by Tong et al., found that the greatest reduction in downwind particle concentration was associated with a vegetation-solid barrier combination, whereby trees are planted next to a solid barrier [144]. However, the modeling for this configuration also showed significant increases in on-road particle concentrations.

A recent study has also investigated the effect of tree stands on indoor PM levels. While being indoors provides some protection from pollution exposure, Maher et al. [145] found that trees planted outside the home can provide substantial reductions in PM inside the home (>50 percent reduction).

It is worth noting that these measurement studies take advantage of existing tree stands or vegetative barriers with various densities, plant species, leaf shapes, and other variables, and it is difficult to isolate the variables that most strongly contribute to potential air quality improvement. In addition, these studies have been mostly conducted in the U.K. or on the east coast of the U.S., and the greatest effectiveness has been observed with extremely dense vegetative stands that provide a solid barrier (with no gaps, from ground-level to top of the canopy) between roadways and people that live or spend time in near roadway environments.

A recent ARB-funded study examined vegetation in combination with solid barriers in California. At the time of the writing of this Technical Advisory, the final report on the study was not yet available, but upon finalization, it will be published at the associated ARB Research webpage.[26] Measurements from the study show that the combination of vegetation (trees) and soundwalls is associated with a reduction in BC, UFP, PM2.5, and $NO_x$ concentrations, when ideal or perpendicular wind conditions are present. The concentration reductions vary from 4.8 percent to 28 percent, depending on the location and wind conditions. The study looked at many wind conditions outside of the simple perpendicular wind pattern and found that the soundwall/tree combination barrier may have little or no effect in very high wind cases and in parallel wind cases. A useful table summarizing conditions and measured values will appear in the final report. Additionally, the research project included the development of a model to estimate the reduction in pollution concentrations for combined soundwall and vegetation barriers. This model will also be made publicly available when this project is finalized later in 2017.

**Appropriate context & other considerations**

While much research is still underway to assess the effectiveness of vegetative barriers and solid barriers plus vegetation as a means for reducing near-roadway pollution concentrations, the U.S. EPA has synthesized research to date into a recent publication, "Recommendations for Constructing Roadside Vegetation Barriers to Improve Near-Road Air Quality."[27] The document summarizes research findings on the best practices for building roadside vegetative barriers to improve air quality, and includes examples of effective and ineffective vegetative barrier designs and also discussions of vegetation characteristics and how these may affect exposure reduction potential. Specifically, the document emphasizes that higher and thicker vegetation results in the greatest downwind pollution reduction. Research has shown that pollutants can meander around edges and through gaps, so vegetation should be densely planted and well-maintained to prevent gaps created by dead or dying trees. Figure 6, from U.S. EPA's publication provides examples of (a) effective barriers that have full coverage from ground to top of canopy and (b) ineffective vegetation barriers that may result in increased pollutant concentrations because of gaps and edge effects.

26 *https://www.arb.ca.gov/research/single-project.php?row_id=65195*

27 *https://www.epa.gov/air-research/recommendations-constructing-roadside-vegetation-barriers-improve-near-road-air-quality*.

**Figure 6: Examples of effective and ineffective vegetative barriers. Image: U.S. EPA 2016.**

| EFFECTIVE | INEFFECTIVE |
| --- | --- |
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|  |  |
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This document also highlights a variety of non-air quality related considerations that should be weighed when considering planting trees or vegetation to mitigate pollution near high-volumes roadways. One important consideration is what to install and where to install it order to minimize potential negative impacts, including allergen production, water need, cost, and safety hazards. The overarching best management practice for urban forestry is to plant a diversity of species in accordance with the 30/20/10 rule: no more than 30 percent of trees should be species within the

same family, no more than 20 percent should be from the same genus, and no more than 10 percent should be the same species. Diversity not only reduces concentrations of allergens, but also protects against pests, invasive species, climate change, and severe weather.

In February 2017, the Sacramento Metropolitan Air Quality Management District released a draft document, "Landscaping Guidance for Improving Air Quality near Roadways."[28] The document translates findings and recommendations from the above mentioned U.S. EPA document so that they can be applied in the unique conditions and circumstances found in the Sacramento region.

For tree installations, CAL FIRE and the USDA Forest Service have funded the Urban Forest Ecosystems Institute website, which includes a tree selection software tool called Selectree.[29] This online tool allows users to search for low allergen and drought resistant trees and to select for other characteristics that best fit the context of where they will be planted. To avoid over- or under-watering trees, "Save Our Water and Our Trees" guidance can be consulted.[30] Planners should also consult with their local air quality management district to see if it provides additional recommendations for this type of strategy.

As stated in the research summary above, wind conditions—including wind speed and direction—influence the effect of adding vegetation to a solid barrier. The local meteorological conditions displayed in a wind rose can help planners decide how much of an air quality benefit can be realized from the addition of trees to a soundwall. Some communities prefer to plant low growing vegetation near soundwalls or near freeways out of concerns for pedestrian safety, to reduce shelter for vermin, and to discourage illegal camping.

A potential co-benefit is the possibility that this action may help to mitigate the urban heat island effect.[31] If trees or vegetation replace or are installed over non-reflective, heat-absorbing surfaces, they can reflect light that may have otherwise been converted into heat. This reduction in heat can have important air quality and energy use benefits, since it may translate to reductions in the use of electricity for air conditioning. Additionally, trees and vegetation can encourage outdoor activity, walking and other non-vehicle modes, and improve the street aesthetic.

While trees and vegetation can increase pollutant dispersion and thereby improve air quality, some studies show that they can increase street-level pollutant levels under certain circumstances. The effectiveness of trees in mitigating pollution in urban street canyons depends on three major factors: (1) ventilation, (2) tree planting density/size of canopy, and (3) street width to building height ratio. In street canyons, roadside vegetation may lead to increased pollutant levels in the street canyon at the street level, as the presence of trees can reduce ventilation, effectively trapping pollutants in the canyon; this aerodynamic effect has been shown to be much stronger than the pollutant removal from trees [146]. Increasing tree planting density reduces the effect of ventilation and can result in increased pollutant concentrations under the tree canopy [117, 147-149]. Larger tree crowns were associated with increasing concentrations [150]. However, increased ventilation can mitigate these effects [117, 149]. In addition to ventilation, the ratio of building height to street width (h/w) also is an important variable in describing the effect of trees in an urban canyon. Large h/w ratios reduce the trapping effect of trees by increasing ventilation in the local area [147, 149]. Finally, some tree species may contribute to the worsening of air quality by producing VOCs that can lead to ozone formation [151]. These species should be avoided, and online tools and expert consultations are helpful resources for planners as they choose tree species for installation.

28 *http://www.airquality.org/Residents/CEQA-Land-Use-Planning/Roadway-Protocol*
29 *http://ufei.calpoly.edu/index.lasso*
30 *http://saveourwater.com/what-you-can-do/tips/landscaping/save-our-water-and-our-trees/*
31 Urban air temperature is elevated compared to rural areas because of the prevalence of roofs and pavements that absorb heat and radiate it back into the ambient environment.

## Strategies that remove pollution from the air

### 7: Indoor high efficiency filtration

**FINDING:** Studies show that particle filtration systems and devices, specifically high-efficiency filtration with mechanical ventilation or portable high efficiency air cleaners, can be highly effective for reducing indoor pollution concentrations. High efficiency filters in ventilation systems, for example, can remove 50-99 percent of particles in the air. However, research shows that filtration technologies for gaseous pollutants (VOCs) are variable in their effectiveness; some remove certain VOCs well, but not others.

**APPROPRIATE CONTEXT & OTHER CONSIDERATIONS:** Planners should be aware of current state and local building codes and their respective air filtration requirements, including requirements for amending code standards. Regular operation and maintenance is necessary for highest filter and ventilation efficiency, and is required by regulation in commercial buildings.

Reducing the entry of air pollutants into indoor environments from nearby roadways is critical for mitigating adverse health impacts. Research shows that both high efficiency filtration in central ventilation systems and portable air cleaners can effectively remove particles in most circumstances. Depending on particle size and other factors, central ventilation systems with high efficiency filtration remove about 50-99 percent and portable air cleaners remove about 30-90 percent of the particles in the air. Unlike particle filtration, filtration technologies for gaseous pollutants can be useful in some circumstances but generally are not as effective as particle filters.

Filter efficiency is rated using several scales, the most common of which is the minimum efficiency reporting value (MERV) rating system. A table illustrating the features and characteristics of MERV rated filters can be found in Appendix B. Flat, one-inch fiberglass filters are the most commonly used filters in residential heating and air systems. They remove only a portion of the largest particles in the airstream that passes through the filter and are typically rated no higher than MERV 4. MERV 5 to MERV 8 filters are medium efficiency filters that remove some additional types of particles such as mold spores and cat and dog dander, but they still do not remove the finer particles produced on roadways. MERV 9 to MERV 12 filters begin to remove particles in the smaller fraction of PM2.5. Higher efficiency MERV 13 to MERV 16 filters remove a portion of the ultrafine and submicron particles emitted from vehicles. True HEPA (high efficiency particulate arrestance) filters—equivalent to MERV 17 to MERV 20—remove 99.97 percent to 99.999 percent of particles less than 0.3 microns (μm). HEPA filters are available for use in residential applications, but they are not yet in widespread use in residences.

#### High efficiency filtration with mechanical ventilation

Mechanical ventilation integrated with in-duct filters removes some air pollutants when outdoor air passes through the filters and through deposition in the ducts. The amount of air pollutants removed depends on the air flow passing through the filters and the filtration efficiency of the filters. The performance of high efficiency filtration with mechanical ventilation has been evaluated by both field measurements and modeling simulations for residences, schools, and commercial buildings.

In residences, field studies of high efficiency filtration with mechanical ventilation have found that these systems can reduce air pollutants of outdoor origin by 50-98 percent [152-154]. In a seven-home study in northern California, Bhangar et al. [152] found that when filtration was active (systems turned on) at the two homes with active filtration in a mechanical system, the portion of indoor particles from outdoors was lower by 54 percent and 74 percent respectively, than when they were turned off (no filtration). In the most recent ARB-funded study in a test

home, Singer et al. [154] measured indoor reductions of incoming outdoor PM2.5 particles up to 97-98 percent with MERV 16 filtration on a supply ventilation system and one central ventilation system configuration. MacIntosh et al. [155] measured particle removal rates of various in-duct filters that varied in thickness and found that, compared to a 1-inch filter, using a 5-inch MERV 8 filter increased the PM2.5 removal rates by 4.6 times. Stephens et al. [156] used four different methods to estimate the particle removal efficiencies of filters in the heating, ventilation, and air conditioning (HVAC) system of a test house, and found that all methods showed significantly higher removal efficiencies for MERV 11 filters than MERV 7 or lower filters across the size range (0.3-10 μm) measured, by about 20-50 percent. Modeling simulations show similar results. Brown et al. [157] found that, compared to a MERV 1 fiberglass filter, a MERV 12 or higher filter can effectively remove 63-76 percent more PM2.5 of outdoor origin. Using the same model as Brown et al., MacIntosh et al. [158] found an indoor/outdoor ratio of 0.1 for PM2.5 (a reduction of 90 percent) for homes with a high efficiency electrostatic air cleaner in the HVAC systems. This was significantly lower than the ratio of 0.35 (65 percent reduction) found in homes with a one-inch media filter and 0.57 (43 percent reduction) for homes with natural ventilation.

Although the MERV rating system does not specify removal efficiencies for particles smaller than 0.3 μm in diameter, a few studies have evaluated the performance of high efficiency filtration on UFPs. In a recent study of various filtration levels and types of mechanical ventilation in a test home, Singer et al. found good removal of UFP, including up to 99 percent removal of incoming UFP from the outdoors with a MERV 16 filter on either a supply ventilation system or a central system [154]. The researchers also measured air flow resistance for the highest MERV filters tested, and found that it was not an issue; a deep pleat MERV16 filter reduced airflow by just 2.7 percent and a 1-inch MERV13 filter reduced airflow by 4.9 percent. Stephens and Siegel [159] found that achieving substantial removal of UFPs in real residential environments (>50 percent removal efficiency) requires higher efficiency filters (e.g., MERV 13 or higher) than those typically used in homes. A field study in a radio station surrounded by busy roads in Australia showed that adding a MERV 7-8 equivalent pre-filter and a MERV 14-15 equivalent filter to the HVAC system increased overall removal efficiency for UFPs by 48 percent [160]. In a modeling study, Azimi et al. [161] used about 200 outdoor particle size distributions and the single-pass filter removal efficiencies obtained from the literature to estimate the removal efficiencies for UFPs of outdoor origin. This study found that, assuming an HVAC system operates with 100 percent outdoor air, the UFP removal efficiencies for MERV 16 or higher filters were over 98 percent, compared to 12 percent for MERV 7 or lower filters.

Similar findings on high efficiency filtration with mechanical ventilation were also reported in schools and other commercial buildings. In a study of a single school in Utah, indoor submicron particle counts were reduced to just one-eighth of the outdoor levels in a building with a mechanical system using a MERV 8 filter, indicating substantial protection of air filtration in the HVAC system against exposure to outdoor submicron particles [162]. In a pilot study in three southern California schools, a combination of MERV 16 filters used as a replacement for the normal panel filter in the ventilation system and in a separate filtration unit reduced indoor levels of outdoor-generated black carbon, UFPs and PM2.5 by 87-96 percent [163]. Use of the MERV 16 panel filter alone in the HVAC system achieved average particle reductions of nearly 90 percent. Wu et al. [164] found that in small and medium commercial buildings, indoor/outdoor ratios of black carbon were lower for those with MERV 6-8 filters in the HVAC systems, compared to the building with MERV 4 or lower filters, although the difference was not statistically significant. Zaatari et al. [165] estimated that the removal efficiencies of PM2.5 for the rooftop HVAC units in commercial buildings increased by 2.9-3.8 times after upgrading filters from MERV 8 to MERV 13-14.

**High efficiency portable air cleaning devices**

For homes and schools without forced air HVAC systems, portable or stand-alone air cleaning devices can be used to provide filtration. When portable air cleaners use high efficiency or HEPA filters and are appropriately sized for the space to be treated, they can typically achieve 30-60 percent removal of particles and sometimes up to 90 percent removal [166-169]. In the pilot study conducted in three southern California schools (discussed above), a large stand-alone air cleaner with MERV 16 filters reduced black carbon, UFP and PM2.5 by 90 percent or more, and PM2.5 mass by 75 percent, when the HVAC system was not running [163]. However, portable air cleaning devices are generally not as capable as in-duct air cleaners and those associated with mechanical ventilation systems for cleaning large areas. The review by Sublett [170] indicated that portable air cleaners with HEPA filters can lower particle levels indoors, but their effectiveness is limited to a single room and not the entire dwelling. The results from the field study by MacIntosh et al. [155] showed that five portable HEPA air cleaners operating at the same time were needed to achieve the same PM2.5 removal rate of an in-duct MERV 8 filter in a test house.

**Appropriate context & other considerations**

There are several California state building codes that relate to indoor air filtration in residences and commercial buildings, including offices. For workplaces, State regulation (California Labor Code, Title 8, Section 5142) requires that mechanical ventilation systems be operated as designed to provide the required amounts of outdoor air exchange during occupied periods. This includes properly servicing and maintaining filtration equipment. For residences, California building codes [2016 California Energy Code, Section 150.0 (m)(12)(B)] require mechanical ventilation in new construction; however, the current building code only requires a minimum filtration efficiency of MERV 6, which is rated lower than what is likely needed to adequately protect residents' health when homes are located near roadways. Local jurisdictions and planners should consider opportunities to revise local codes to include recommendations that filtration with a higher efficiency rating be installed when new housing is planned near roadways. Installation at the time of construction involves minimal incremental costs (equal to a two-inch or larger filter slot vs. the typical one-inch slot) and costs less than retrofitting existing buildings. Airflow resistance issues can be avoided by using deeper pleat filters, and there are high efficiency filters on the market that do not produce airflow resistance issues. This is true for retrofitting existing buildings as well, although costs may be higher depending on the nature and extent of the retrofit. The 2016 California Energy Code [Section 150.0 (m)(12)(C)] also requires mechanical systems, including heating and air conditioning systems, to be designed to accommodate the system's air filter media rated pressure drop for the system design airflow rate. Planners should also consult with their local air quality management district to see if it provides additional recommendations for this type of strategy.

Stand-alone air cleaners are less relevant for new homes which are now required to include mechanical ventilation, but good quality high-efficiency portable models can be useful in reducing indoor exposure to pollutants in existing homes that do not have mechanical ventilation. Also, they can be useful in homes that use bathroom exhaust type mechanical ventilation systems, which by their design cannot incorporate filtration of the incoming air because the supply air enters through leakage points throughout the building.

In general, particles are typically of greatest concern and pose the highest health risk, so HEPA filtration is likely to provide the highest degree of public health protection in near-roadway buildings. However, when VOC levels are of concern for a specific site, planners should consider additional options and consult with filtration experts. As described in more detail in Appendix A, adsorption using activated charcoal, sometimes with a catalyst such as potassium permanganate, is most commonly used, and while its effectiveness varies, it generally reduces VOCs, including VOCs commonly emitted from vehicles such as benzene and xylenes. Other methods may effectively reduce gaseous pollutants, but they also present the possibility of producing harmful byproducts. These technologies should be used with caution and in consultation with indoor air quality and filtration experts. Those seeking information on air cleaning devices can also consult

the ARB document, "Air Cleaning Devices for the Home: Frequently Asked Questions."[32] The document discusses situations where an air cleaning device can help improve indoor air quality describes central system filtration and portable air cleaning technologies and the benefits of each.

Indoor high efficiency filtration is linked to a number of co-benefits. First, filtration can help reduce the dust and soot that collects in building interiors, making it easier to maintain a clean and hygienic environment. Additionally, some studies have shown improved employee health and reduced absences with reduced exposure to pollution. Indoor filtration is among a very small number of exposure reduction strategies that can be implemented in existing buildings.

32 *https://www.arb.ca.gov/research/indoor/acdsumm.pdf*

# III. Conclusions

The implementation of SB 375 and other long-range land use and transportation planning efforts are important for California to meet its greenhouse gas emission reduction goals, to reduce pollution, to protect natural and working lands, and to promote equity and environmental justice. Many of these efforts focus on increasing development density as a means to reduce the frequency and length of automobile trips. In addition, greater density facilitates alternative modes of transportation, including transit, biking, and walking.

In some parts of the state, efforts to increase development density may result in infill development located near high-traffic roadways. The people that spend time in and around buildings located on these infill parcels will likely experience heightened exposures to traffic emissions, even as the vehicle fleet gets cleaner over time. Decades of research show an association between exposure to traffic emissions and serious health impacts, including cardiovascular and respiratory impacts. For new development, setbacks and buffers separating roadways from housing, offices, and other uses have been the primary defense against traffic emissions exposure and its public health impacts. This is largely because the distance-decay gradients for traffic-related pollutants is well studied and understood, and setbacks and buffers are effective ways to protect against the public health impacts of traffic pollution. However, given the significant population already living near high-volume roadways, and with the growing need to develop infill parcels to meet other state goals, ARB has funded and examined research that assesses other ways to reduce pollution exposure in near-roadway developments.

As this document shows, there are a variety of scientifically supported strategies to reduce near-roadway pollution exposure. Not only are these strategies well-studied and consistently effective, but they also fall into diverse categories. Urban design characteristics, roadside features, street design and traffic management strategies, and pollutant removal technologies outlined in this document give local planners and decision-makers options and thus the opportunity to find a strategy that best fits the local context.

As emphasized throughout this document, however, it is important that planners and decision-makers consider a variety of variables and tradeoffs when deciding which exposure reduction strategies make the most sense. Important points for consideration include (but are not limited to) the following:

- Site specific factors and conditions;
- Potential co-benefits, drawbacks, and direct and indirect effects;
- Interaction of the exposure reduction strategy with other local, regional, and state goals and policies;
- Community well-being and concerns, including safety and equity;
- Long-term effects of implementing strategies;
- Importance of implementing strategies in concert to enhance their effectiveness; and
- Other policies may need to be implemented concurrently to counter any potential drawbacks of the near-roadway strategy.

Many resources are available to assist local governments and other stakeholders to help them determine which exposure reduction strategies are appropriate for their community, including documents and guidance mentioned throughout this report. Various public and non-

governmental agencies may also be able to provide expert assistance, including ARB, Caltrans, the Office of Planning and Research, CA Department of Housing and Community Development, CAL FIRE, CA Department of Public Health, FHWA, U.S. EPA, MPOs, regional air districts, and local community groups.

Finally, many studies exploring this topic are currently underway and more will be published in the years to come. ARB will continue to review and analyze this research on a periodic basis. Updates to this document will be posted to ARB's website at: *https://www.arb.ca.gov/ch/landuse.htm*.

# Appendix A: Strategies not meeting ARB's criteria at this time

This appendix contains a summary of findings for other potential exposure reduction strategies that ARB evaluated in its review of scientific, peer-reviewed literature. The following are not included in the main section of this document because they did not meet all of the following criteria at the time of the 2016 literature review.

1. Consistent findings from multiple studies support the strategy as a means for reducing pollution concentrations or emissions rates or for improving air flow to disperse pollutants.
2. Significant evidence of effective emissions reductions is documented in the scientific literature.
3. Diversity in the study methods supports consistent findings (such that strategies do not exclusively rely on one method of investigation).

The table that precedes each strategy indicates the criteria that were (þ) and were not (o) met.

## Strategies that reduce traffic emissions

### Onboard traffic signal system

| | | |
|---|---|---|
| ☐ | **Criterion 1** | Consistent findings from multiple studies support the strategy as a means for reducing pollution concentrations, etc. |
| ☑ | **Criterion 2** | Significant evidence of effective emissions reductions is documented in the scientific literature. |
| ☐ | **Criterion 3** | Diversity in the study methods supports consistent findings (such that strategies do not exclusively rely on one method). |

To reduce the stop-and-go activities at intersections, in-vehicle signal systems that help drivers anticipate signals and speed limit have been introduced. One in-vehicle advanced driving alert system (ADAS) which provides real time information on traffic signal status to help drivers avoid hard braking at intersections was investigated for its potential to change drivers' behavior and reduce vehicle emissions [171]. A modeling simulation shows that ADAS can help reduce vehicle fuel consumption and $CO_2$ emissions both by 26-40 percent in a single vehicle in the tested hypothetical conditions. Another in-vehicle signal system which had been studied for its effect on traffic emissions is Intelligent Speed Adaptation (ISA) system [172]. ISA consists of a GPS navigation system that locates a vehicle on a digital map with speed limits for each street, and a device that can control fuel supply. It provides speed limit warnings and can cap the maximum driving speed automatically to comply with speed limits. This study found that with an ISA on board, there was a significant reduction in averge speed, but no statistically significant change in $NO_x$ and PM emissions, and even a small increase in volatile organic compound (VOC) emissions.

## Road pricing

| | | |
|---|---|---|
| ☐ | **Criterion 1** | Consistent findings from multiple studies support the strategy as a means for reducing pollution concentrations, etc. |
| ☑ | **Criterion 2** | Significant evidence of effective emissions reductions is documented in the scientific literature. |
| ☑ | **Criterion 3** | Diversity in the study methods supports consistent findings (such that strategies do not exclusively rely on one method). |

For a few decades, road pricing has been considered to be an effective way to manage traffic demand and generate revenue. In 1975, Singapore implemented the world's first congestion pricing scheme and since then, pricing schemes have been adopted in many cities worldwide. Road pricing programs, including the London Congestion Charging Scheme (CCS) and the Stockholm Congestion Tax Scheme, have been studied for their roles in reducing vehicular emissions.

Implemented in February 2003, the London Congestion Charging Scheme (CCS) assesses a single charge for vehicles entering a central London zone between 07:00–18:30 on weekdays, with several vehicle types exempt from the charge. Since the program's inception, vehicle kilometers travelled within the zone reduced by 15 percent and the average speed increased by 20 percent. Based on the measurements from a single roadside monitor within the CCS Zone, roadside levels of $NO_X$ and NO dropped by 5 percent and 9.5 percent, respectively, but concentrations of $NO_2$ and PM10 increased by 2.1 percent and 5.6 percent, respectively [173]. Interestingly, similar changes were observed during the same hours during weekends when the scheme was not operating. This may be due to the exceptional meteorological conditions of 2003, when concentrations of PM10, $NO_2$ and $O_3$ were higher than those in 2002, perhaps causing the impacts of the implementation of the CCS zone to be concealed. In an attempt to understand the role meteorology might have played in the observations, a modeling simulation was conducted and found that total $NO_X$ and PM10 emissions in the CCS zone were reduced by 12.0 percent and 11.9 percent, respectively [174]. Furthermore, Tonne et al. [175] conducted more extensive air pollution concentration modeling combining exposure-response relationships from the literature to predict the life expectancy impact of the CCS. This study estimated that 183 years of life per 100,000 people would be gained within the CCS zone.

The Stockholm Congestion Tax Scheme was employed between January 3 and July 31, 2006. Vehicles travelling into and out of the affected area were charged for every passage during weekdays. Based on measured and modelled changes in road traffic, this scheme resulted in a 15 percent reduction in total road use within the affected area. Total traffic emissions of $NO_X$ and PM10 in this area fell by 8.5 and 13 percent, respectively [176]. It was estimated that with a permanent congestion tax system, the annual average $NO_X$ concentrations would drop up to 12 percent and PM10 concentrations would drop up to 7 percent along the most densely trafficked streets.

## Low emission zones

| | | |
|---|---|---|
| ☐ | **Criterion 1** | Consistent findings from multiple studies support the strategy as a means for reducing pollution concentrations, etc. |
| ☐ | **Criterion 2** | Significant evidence of effective emissions reductions is documented in the scientific literature. |
| ☑ | **Criterion 3** | Diversity in the study methods supports consistent findings (such that strategies do not exclusively rely on one method). |

Low Emission Zones (LEZ) vary in terms of their parameters, but usually involve limiting vehicles into part or all of an urban area. Generally, there are three types of LEZs. An air quality based LEZ triggers action when air quality in the LEZ exceeds or is predicted to exceed a certain threshold. A technology based LEZ restricts certain vehicle types (i.e., vehicles that do not meet certain emission standards) from entering the designated zone. A transport-based LEZ usually aims to restrict, prioritize, and optimize traffic flow in order to reduce emissions.

A London-based study used empirical prediction models to evaluate the impacts of different LEZ scenarios on annual mean $NO_2$ concentrations in central London [177]. By reducing all road traffic in central London by 10 percent or 20 percent, the concentrations of $NO_2$ were decreased by 1.4-3.4 percent or 2.9-7.1 percent, respectively. Removing all pre-Euro I cars and light-goods vehicles reduced $NO_2$ level in London by 1.8-5.2 percent. Further removing all pre-Euro III heavy-goods vehicles and buses reduced $NO_2$ by 3.6-11.1 percent. A similar regulation implemented in Amsterdam excluded Euro 0, I and II heavy-duty vehicles from entering Amsterdam's Low Emission Zone (LEZA). Data from two monitoring sites within the LEZA showed that the traffic-contributed concentrations decreased by 4.9 percent for $NO_2$, 5.9 percent for $NO_X$, 5.8 percent for PM10, 7.7 percent for absorbance, and 12.9 percent for elemental carbon (EC) [178]. Boogaard et al. [179] investigated air pollution at street level before and after implementation of LEZ in the inner-city of five Dutch cities. The Dutch LEZ restricts old heavy-duty vehicles entering the LEZ, including all Euro-0, I, II trucks and Euro-III trucks if older than 8 years or not retrofitted with particle filters. The results showed that the traffic-related pollutants monitored, including 'soot', $NO_X$, and elemental composition (Cr, Cu, Fe), did not decrease significantly. Only PM2.5 reductions, which fell 30 percent, were large compared to the observed reductions at the corresponding suburban control location (22 percent). While overall, the Dutch study did not find reductions in soot, $NO_X$, and $NO_2$, in one urban street where traffic intensity was reduced 50 percent, they were found to be reduced by 41, 36, and 25 percent, respectively, compared to reductions at the suburban control location (22, 14, and 7 percent, respectively). Acero et al. [180] studied the emission reductions related to a minor extension of a pre-existing LEZ. This LEZ is around 0.1 kilometer$^2$ with 60 percent of the area occupied by buildings. Only resident and commercial vehicles can operate within this LEZ during certain hours. The modeling simulation showed that if the LEZ is extended to include a 170 meter street during weekend, there will be a reduction of 6.4 percent for PM10 and 6.6 percent for $NO_2$ within the LEZ. But the impact outside the LEZ was negligible.

An extreme case of LEZ is called a pedestrianization scheme, which forbids any vehicles entering a small region, usually a commercial or residential area. Chiquetto [181] analyzed the influence of a pedestrianization scheme in Chester, UK on total vehicle exhaust emissions, local levels of air pollution concentration, and noise from traffic. The results showed that the pedestrianization scheme reduced air pollution in the pedestrian area 70-80 percent. However, the subsequent re-routing of traffic increased average air pollutant concentrations in the city as a whole by 6 percent.

## Road surface designs

| | | |
|---|---|---|
| ☐ | **Criterion 1** | Consistent findings from multiple studies support the strategy as a means for reducing pollution concentrations, etc. |
| ☑ | **Criterion 2** | Significant evidence of effective emissions reductions is documented in the scientific literature. |
| ☐ | **Criterion 3** | Diversity in the study methods supports consistent findings (such that strategies do not exclusively rely on one method). |

Special road surface designs, including speed humps and bumps, pavement treatments, chicanes, and raised crosswalks and speed tables have been used for decades to reduce driving speed and improve pedestrian safety. Most drivers will slow down when driving over these structures, which results in a series of accelerations and decelerations, and are anticipated to have adverse impact on vehicle emissions. A few studies have investigated the impacts of some road surface designs on emissions from vehicles driving on roadways. A case study in Gothenburg, Sweden used a simulation model to investigate the environmental impacts of speed humps for different traffic intensities and driving speed limits and found that speed humps increased fuel consumption estimates by 3-19 percent. Accordingly, the introduction of speed bumps increased the emissions from a singular vehicle by 7-62 percent for HC, 0.4-32 percent for CO, and 5-26 percent for $NO_X$ [182]. Similarly, Ahn and Rakha [53] simulated vehicle emissions using vehicle driving data and energy and emission modeling, and found the installation of speed humps and bumps increased fuel consumption by 53 percent, and the emissions of HC, CO, $NO_X$, and $CO_2$ by 51, 44, 110, and 52 percent, respectively.

Strategies that increase dispersion of traffic pollution

## Taller buildings/pollution dispersion along vertical gradients

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| ☐ | **Criterion 1** | Consistent findings from multiple studies support the strategy as a means for reducing pollution concentrations, etc. |
| ☑ | **Criterion 2** | Significant evidence of effective emissions reductions is documented in the scientific literature. |
| ☑ | **Criterion 3** | Diversity in the study methods supports consistent findings (such that strategies do not exclusively rely on one method). |

A handful of studies have examined how pollution concentrations change along a vertical gradient with increasing distance from ground-level. These studies help to shed light on exposure levels that may be experienced by people that spend prolonged periods of time above ground-level along street corridors (e.g., in offices, homes, etc.).

Morawska et al. [183] examined both horizontal and vertical pollutant concentration gradients near busy roadways in Brisbane, Australia (not an urban canyon site). The researchers found that fine and ultrafine particle concentrations outside buildings with 9 to 26 stories were not significant and can be highly variable, depending on other local sources and local meteorological conditions. Also, they found no correlation between particle concentration and height for buildings 15 meters or more from the freeway. For buildings in the immediate proximity of the roadway, pollutant concentrations throughout the building envelope were very high, comparable to those in the immediate vicinity of the road, indicating that undiluted concentrations drawn directly from the freeway encircled the buildings.

In contrast, several studies from urban areas in Asia show statistically significant reductions in pollutant concentrations with increasing distance from ground-level [184-186]. However, for some

pollutants (e.g. polycyclic aromatic hydrocarbons, PAHs, and PM2.5), the attenuation rate slows above a certain threshold, indicating that concentrations drop off more sharply closer to pollution sources. In a study conducted in Macao, China, Wu et al. [184] found that the mass concentrations of PM10, PM2.5, and PM1 decreased by 40, 38, and 20 percent respectively at 79 meters (~26 floors) above ground level, and maximum mass concentrations were measured at 2 meters above the ground. Li et al. [185] studied changes in PM2.5 and PAH concentrations along a vertical gradient at a residential building adjacent to a busy roadway in Guangzhou, China. The study found that both pollutants decreased significantly at heights above ground level at an urban study site. At 24 meters (~8 stories), PM2.5 concentrations had decreased by 36 percent from the maximum, but the rate of decrease slowed at a height of 36 meters (~12 stories). PAH concentrations showed a similar vertical tapering off; at a height of 33 meters (~11 stories), PAH concentrations had fallen to 51 percent of the maximum. Tao et al. [186] confirmed these prior results via measurements collected along a meteorological tower in Beijing during the winter.

Recent studies in the U.S. agree with the directionality of these Asian studies but differ in the magnitude of the pollutant concentration reductions observed. Wu et al. [187] studied particle number concentration and particulate matter mass concentration by hoisting instruments up the vertical face of an 11-story (35 meter) building in Boston's Chinatown. The researchers found that particle number concentration decreased by 7.7 percent and PM2.5 concentration decreased 3.6 percent with increasing height from 0 to 35 meters. Another study in New York found that outdoor black carbon and polycyclic aromatic hydrocarbons were significantly reduced for floors 6 through 32 during the non-heating season only [188]. Researchers also measured the highest median concentrations for outdoor pollutants at floors 3 to 5, but this trend was not statistically significant and the elevated pollutants were believed to come from nearby rooftop exhausts.

Finally, in a modeling study, Zhou and Levy [189] found that—in a street canyon with a height of 60 meters and a width of 30 meters—approximately 30 percent of the ground-level concentrations of PM10, PM2.5, CO, and NO remains at the top of the street canyon. For $NO_2$, 50 percent of the ground-level concentration remains at the top of the street canyon. Overall, the sharpest decline in pollutant concentration occurred within 15 meters (~50 feet) of the ground.

While the research literature shows that transportation related pollutants may decline with increasing distance from the roadway along a vertical gradient, there are many other factors at play, including local meteorological conditions, seasonal differences, and other local pollution sources. Studies that observed higher concentrations several floors up attributed these to other pollution sources, like exhaust vents on adjacent buildings. Thus, while multi-story housing may reduce exposure in some situations, further research is needed to determine conditions under which tall buildings might provide a reliable approach to reduce exposure near busy roadways.

## Air intake location

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| ☑ | **Criterion 1** | Consistent findings from multiple studies support the strategy as a means for reducing pollution concentrations, etc. |
| ☐ | **Criterion 2** | Significant evidence of effective emissions reductions is documented in the scientific literature. |
| ☑ | **Criterion 3** | Diversity in the study methods supports consistent findings (such that strategies do not exclusively rely on one method). |

Although locating air intakes for mechanical ventilation systems on the opposite side of the building from the nearby outdoor source and prevailing wind direction seems logical, there is little scientific evidence that this practice results in significant indoor air quality improvement, and the limited research indicates that many site-specific factors influence effectiveness. Specifically, the reduction of pollutant entry depends on the distance of the intake from the outdoor source, the consistency of the prevailing wind direction, and any local geographical or

structural objects that might produce wind turbulence or eddies near the building and the air intake. It is likely that moving the air intake would be somewhat beneficial if the outdoor source is very near the intake and the intake is moved fairly far away. Otherwise, because particles tend to disperse quickly and particle plumes "flow" around buildings, elevated particle concentrations around the building will be fairly consistent. Also, according to the abovementioned Australian study, researchers found consistently high submicron particle concentrations enveloping a building located within 15 meters of the roadway [183]. Thus, while there may be some benefit to moving the intake in certain circumstances, that benefit likely will be very small, and is not reliable or quantifiable at this time.

### Roadway elevation

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| ☐ | **Criterion 1** | Consistent findings from multiple studies support the strategy as a means for reducing pollution concentrations, etc. |
| ☐ | **Criterion 2** | Significant evidence of effective emissions reductions is documented in the scientific literature. |
| ☑ | **Criterion 3** | Diversity in the study methods supports consistent findings (such that strategies do not exclusively rely on one method). |

Elevation of the road surface plays an important role in the transport and dispersion of traffic-emitted air pollutants in the near-road environment [190]. A wind tunnel study indicates that at-grade roadways experience the least amount of pollutant mixing if no other structures exist near the road, while depressed or elevated roadways result in higher pollutant mixing and dispersion, and therefore lower near-road concentrations of air pollutants [129]. Field measurements have also evaluated the impact of road grade on local air pollution, finding depressed configurations are associated with lower pollutant levels for downwind near-road environments. For instance, size-resolved PM samples collected upwind and downwind of five urban freeways in Los Angeles, CA with different road configurations (i.e., at-grade, sloped depressed section, and elevated fill section) indicated that depressed sections resulted in lower downwind concentration [191]. Similarly, a study in Santa Monica, CA investigated particulate dispersion from highways located along depressed sections, and found lower near-road pollutant concentrations compared with theoretical dispersion model predictions for at-grade roadways [192]. By monitoring PM2.5, $NO_x$, elemental carbon, and particle number concentration, one study in Antwerp, Belgium found that taking into account confounding parameters (i.e., time of day, day of the week, distance to the road and wind speed), the contribution of traffic to air pollutant concentrations in the near-roadway environment is significantly higher for a ground level motorway than a motorway flyover [193]. Similarly, a study by Nikolaou et al. [194] found that elevated freeways had slightly lower levels of near-road pollution while depressed freeways were similar to at-grade roads.

### Sidewalk and bicycle lane placement

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| ☐ | **Criterion 1** | Consistent findings from multiple studies support the strategy as a means for reducing pollution concentrations, etc. |
| ☑ | **Criterion 2** | Significant evidence of effective emissions reductions is documented in the scientific literature. |
| ☑ | **Criterion 3** | Diversity in the study methods supports consistent findings (such that strategies do not exclusively rely on one method). |

The separation of a pedestrian or cyclist from the roadway may be an effective mitigation measure for walkers and bikers, but not necessarily for people that dwell in buildings near-roadways.

Studies have shown that route choice (walking or biking on less trafficked roads) or location of a walkway or bike lane with respect to a busy roadway (at or below grade, roadside boundary wall or parked cars separating street from foot path) can significantly reduce exposure to air pollution [126, 195-198]. McNabola et al. [126] found that PM2.5 levels on a boardwalk 1-3 meters from the road were almost three times lower than PM2.5 levels on a sidewalk immediately adjacent to the road. Kendrick et al. [196] conducted a similar study in Seattle with bicycle lanes adjacent to the roadway or a few meters away, separated by parked cars. They found up to 40 percent reduction in UFP concentrations when the bicycle lane was further away from the road.

Proper route choice and time of commute can also reduce exposure. In Copenhagen, Hertel et al. [195] not only found that low trafficked routes were beneficial in terms of air pollutant exposure, travel during non-rush hour commutes also reduced exposures by 5-20 percent. In Australia, a study showed UFP concentrations that are two times higher on average on routes with high traffic [197]. Such studies suggest alternate routes and commute times may reduce exposure to traffic-related pollutants. Hatzopoulou et al. [198] developed a web-based planning tool to reduce such exposures for cyclists in Montreal and found that decreased exposure could be achieved with only a small increase in overall route length.

## Truck rerouting

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| ☐ | **Criterion 1** | Consistent findings from multiple studies support the strategy as a means for reducing pollution concentrations, etc. |
| ☑ | **Criterion 2** | Significant evidence of effective emissions reductions is documented in the scientific literature. |
| ☑ | **Criterion 3** | Diversity in the study methods supports consistent findings (such that strategies do not exclusively rely on one method). |

Field measurements before and after local traffic rerouting interventions were in place agree that these interventions improve local air quality [199, 200]. After a by-pass was operational in North Wales, PM concentrations decreased between 23-29 percent in nearby residential streets as heavy-duty traffic decreased almost in half [200]. Similarly, opening of a tunnel in Australia led to a redistribution of $NO_2$ concentrations with the greatest decrease occurring along the bypassed main road [199]. Modeling studies have confirmed that rerouting traffic decreases localized air pollution [201, 202]. For example, rerouting trucks weighing over 5 tons away from residential streets in San Diego, CA is estimated to have decreased diesel particulate matter by 99 percent near residences and schools [201]. Truck restrictions in the Philippines were also shown to have decreased CO, $NO_X$, and PM in the zone closest to the restrictions [202]. Despite local improvements in air quality, regional emissions increased because trucks were required to drive longer distances [199-202]. Because air pollutant concentrations decline with distance as one moves away from heavily trafficked roads [17], the improvements from these local interventions are expected to be limited to about 500 feet from the intervention site. Therefore, these local traffic interventions could have a significant impact in areas with a high density of residences, schools, or hospitals nearby. However, results from a health questionnaire indicate that health improvements of residents were fairly modest after trucks were rerouted off the local streets through a by-pass [200].

A microscopic modeling study of freeway traffic emissions determined that hydrocarbon, CO, and $NO_X$ emissions from heavy-duty vehicles during road-work congestion were highest followed by rush-hour congestion compared with periods of free-flowing traffic [203]. External parameters that impact $CO_2$ truck emissions include travel speed, road gradient, whether congestion is present, temperature, wind, and road surface [204].

## Strategies that remove pollution from the air

### Removal of gaseous pollutants by filtration

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| ☐ | **Criterion 1** | Consistent findings from multiple studies support the strategy as a means for reducing pollution concentrations, etc. |
| ☐ | **Criterion 2** | Significant evidence of effective emissions reductions is documented in the scientific literature. |
| ☑ | **Criterion 3** | Diversity in the study methods supports consistent findings (such that strategies do not exclusively rely on one method). |

As pointed out in the review by Zhang et al. [205], mechanical filters can efficiently remove particles, but are not as effective for gaseous pollutants. Many technologies have been developed to address indoor air quality issues related to gaseous pollutants. One of the most common methods is adsorption whereby the pollutant is transferred from a gaseous phase to a solid phase, usually via activated carbon. Because a wide range of gaseous pollutants with different attractive forces to different sorbents are present indoors, and testing conditions such as temperature and relative humidity differed, the removal efficiencies of adsorption reported in the literature vary greatly. In the study by Batterman et al. [206], a portable air cleaner with an activated carbon pre-filter and a HEPA filter removed 30-70 percent of particles in cigarette smokers' houses, but did not change the concentration of volatile organic chemicals (VOCs). Chen et al. [207] tested the initial performance of 15 air cleaners with a mixture of 16 representative VOCs in a chamber study, and found that sorption filtration removed some but not all VOCs (light and very volatile gases such as aldehydes and dichloromethane were not well removed). However, devices that included sorption media such as activated alumina impregnated with potassium permanganate showed better VOC removal efficiencies. Using a modeling analysis, Sidheswaran et al. [208] estimated that the combination of using activated carbon fiber filters for air cleaning in HVAC systems and a 50 percent reduction in ventilation could decrease indoor concentrations of VOCs by 60-80 percent and reduce formaldehyde concentrations by 12-40 percent. In the southern California schools study discussed above, the stand-alone unit used in one of the schools included charcoal sorbent for removal of gaseous pollutants; it removed 52 percent of the benzene indoors and 15 percent of total VOCs when operated with the HVAC turned off [163]. In addition to activated carbon, various adsorbents for VOC removal had been studied, but their removal efficiencies under real world conditions were not conclusive [209-212].

Other available technologies for gaseous pollutant removal include photocatalytic oxidation (PCO), ozone-oxidation, non-thermal plasma, and other technologies. PCO systems combine ultraviolet rays with a catalyst, usually a titanium oxide-coated filter. This interaction produces highly reactive electrons that in turn combine with and break down VOCs and other pollutants in the air. Hodgson et al. [213] found that, when challenged with complex VOC mixtures, ultraviolet PCO systems achieved 20-80 percent VOC conversion efficiencies. However, due to incomplete mineralization of common VOCs, this device also produced formaldehyde, acetaldehyde, acetone, formic acid and acetic acid as by-products. The formation of secondary air pollutants was also reported in a recent ARB-funded study [214]. Ozone oxidation is generally not recommended as a means for removing gaseous pollutants in indoor environments because the oxidation process can produce other air pollutants like formaldehyde and UFPs, which also have serious adverse health impacts [215-217]. To protect Californians from adverse health effects related to ozone-emitting air cleaning devices, ARB adopted a regulation in September 2007 to limit the ozone emissions from indoor air cleaning devices to no more than 50 ppb.[33] Non-thermal plasma has been found to effectively remove VOCs in some laboratory studies. Quoc An et al. [218] reported that the toluene removal efficiencies were in the 55-60 percent range with non-thermal plasma only, and increased to 96 percent when combined with a catalyst. But removal efficiencies of

33 *https://www.arb.ca.gov/regs/regs-17.htm*

this technology were much lower under real world conditions, and like PCO, the process can also produce harmful byproducts, including aldehydes and ketones. The ARB-funded study discussed above [219] also tested a plasma generator. While the device removed 29 percent of VOCs from the chamber, small amounts of ozone and formaldehyde were emitted.

Overall, the literature shows highly variable removal efficiencies for gaseous pollutants, ranging from 0 to 80 percent. Some technologies have been found to generate harmful by-products during the removal process. Specifically, they either re-emit VOCs that have been removed over time, or emit potentially harmful reaction products from the process during which VOCs are removed. Thus, these VOC removal technologies are not always reliable, and caution should be taken when using these technologies for indoor environments.

### Removal of air pollution via vegetation

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| ☑ | **Criterion 1** | Consistent findings from multiple studies support the strategy as a means for reducing pollution concentrations, etc. |
| ☐ | **Criterion 2** | Significant evidence of effective emissions reductions is documented in the scientific literature. |
| ☑ | **Criterion 3** | Diversity in the study methods supports consistent findings (such that strategies do not exclusively rely on one method). |

The ability of plants to remove pollutants from the atmosphere depends on absorption and deposition onto vegetative material. The scientific literature contains both modeling and measurement studies that characterize this removal process. An early study indicated that vegetation could effectively absorb gaseous air pollutants including $NO_2$ and ozone [220]. Later studies have investigated the ability of trees to act as an effective particle sink. A review of the literature [221] and measurement studies [222] found that coniferous species had the greatest potential to capture particles compared to their deciduous counterparts, although the deposition of PM on surfaces by particle size varies with different plant species [223]. For UFPs, the capture efficiency of vegetation tends to decrease with increasing particle size, increasing wind speed, and decreasing packing density, which in wind tunnel studies is the volume fraction of the wind tunnel occupied by the branches [224].

Many studies have modeled the application and effectiveness of vegetation in urban areas to remove pollution by deposition [225-228]. These studies have shown that trees and other vegetation have the ability to remove pollutants from the atmosphere in urban contexts. Separate from such processes; however, some trees can also emit volatile organic compounds (VOCs) that can lead to the formation of ozone [151]. As such, some tree species may be more advantageous than others, in terms of air quality. In the United Kingdom one study suggests an index to rank trees in order of their potential to improve air quality using an atmospheric chemistry model [229]. In this study, researchers used species-specific VOCs emission rates, pollutant deposition rates, and tree cover data to develop an urban tree air quality score. Conifers and silver birch were found to have the highest potential to improve air quality while several deciduous tree species such as oak and poplar had the greatest potential to worsen air quality when planted in large numbers. These results are consistent with other studies discussed previously.

The application of trees and vegetation to remove air pollutants have been studied from a city-wide [230, 231] to microscale (e.g., street canyon) level [232, 233]. Although trees and vegetation have the potential to remove large quantities of air pollutants from ambient air, the process of pollutant removal through dry deposition alone can only improve air quality by a small fraction (<5 percent), particularly in urban areas [225-228, 231, 234, 235]. However, Pugh et al. [236] found that, in the street canyon microenvironment, pollutant removal through green walls and roofs reduced levels of $NO_2$ and PM by 40-60 percent, respectively. Another study by Baik et al. [232] used computational fluid dynamics (CFD) modeling to illustrate how greening cools surrounding

air to strengthen air flow in a street canyon, thereby reducing pollutant concentrations. These two studies suggest vegetation in the form of green walls and roofs is an effective mitigation measure for reducing exposure to traffic-related pollutants in urban street canyons. However, it is important to note that pollutant removal effectiveness increases as dispersion decreases, so these two mitigation goals may be at odds with one another (e.g., green walls and roofs may be less effective if mitigation to improve pollutant dispersion has been successfully implemented).

# Appendix B: Characteristics of MERV-Rated Filters

| MERV rating | Removal rate according to average particle size | | | Typical controlled contaminant or material sources (ASHRAE 52.2) | Typical building applications |
|---|---|---|---|---|---|
| | 0.3-1.0 | 1.0-3.0 | 3.0-10.0 | | |
| 1-4 | — | — | < 20% | > 10 µm<br>textile fibers, dust mites dust, pollen | Window AC units, common residential, minimal filtration |
| 5 | — | — | 20-35% | 3.0-10.0 µm<br>cement dust, mold spores, dusting aids | Industrial workplace, better residential, commercial |
| 8 | — | — | > 70% | | |
| 9 | — | < 50% | > 85% | 1.0-3.0 µm<br>legionella, some auto emissions, humidifier dust | Hospital laboratories, better commercial, superior residential |
| 12 | — | > 80% | > 90% | | |
| 13 | < 75% | > 90% | > 90% | 0.3 to 1.0 µm<br>bacteria, droplet nuclei (sneeze), most tobacco smoke, insecticide dust | Superior commercial, smoking lounge, hospital care, general surgery |
| 16 | > 95% | > 95% | > 95% | | |
| 17** | > 99.97% | | | <0.3 µm<br>(HEPA/ULPA filters)**, viruses, carbon dust, fine combustion smoke | Clean rooms, carcinogenic & radioactive materials, orthopedic surgery |
| 18** | > 99.99% | | | | |
| 19, 20** | > 99.999% | | | | |

* Adapted from EPA 2009; originally from ANSI/ASHRAE Standard 52.2-2007.
** Not part of the official ASHRAE Standard 52.2 test, but added by ASHRAE for comparison purposes.

# Acronyms

| | |
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| ARB | Air Resources Board |
| APCD | Air Pollution Control District |
| AQMD | Air Quality Management District |
| BAAQMD | Bay Area Air Quality Management District |
| BC | black carbon |
| CCS | Congestion Charging Scheme |
| CFD | computational fluid dynamics |
| CO | carbon monoxide |
| $CO_2$ | carbon dioxide |
| DPM | diesel particulate matter |
| EC | elemental carbon |
| FHWA | Federal Highway Administration |
| GHG | greenhouse gas |
| HC | hydrocarbon |
| HDV | heavy-duty vehicle |
| HEPA | high-efficiency particulate arrestance |
| HVAC | heating, ventilation, and air conditioning |
| ICE | Intersection Control Evaluation |
| ICEV | internal combustion engine vehicle |
| I/O | ratio of in-cabin to on-roadway pollution concentrations |
| kph | kilometers per hour |
| LDV | light-duty vehicle |
| LEZ | low emission zone |
| MERV | minimum efficiency reporting value |
| mph | miles per hour |
| MPO | metropolitan planning organization |
| MUTCD | California Manual of Uniform Traffic Control Devices |
| NCHRP | National Cooperative Highway Research Program |
| $NO_X$ | mono-nitrogen oxides (NO and $NO_2$) |
| OEHHA | Office of Environmental Health Hazard Assessment |
| PAH | polycyclic aromatic hydrocarbon |
| PCO | photocatalytic oxidation |
| PHEV | plug-in electric hybrid vehicle |

| | |
|---|---|
| PM10 | particulate matter with an aerodynamic diameter of 10 micrometers or less |
| PM2.5 | particulate matter with an aerodynamic diameter of 2.5 micrometers or less |
| ppb | parts per billion |
| ppm | parts per million |
| RTP | regional transportation plan |
| SB 375 | Senate Bill 375 |
| SCS | Sustainable Communities Strategy |
| TAC | toxic air contaminants |
| UFP | ultrafine particulate matter with an aerodynamic diameter of 0.1 micrometers or less |
| U.S. EPA | United States Environmental Protection Agency |
| VMT | vehicle miles traveled |
| VOC | volatile organic compound |
| ZEV | zero emission vehicle |

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**EXHIBIT 2**

# Scenic Highways - Frequently Asked Questions

## What is the California Scenic Highway Program and when did it start?

Many State highways are surrounded by outstanding natural beauty. California's Scenic Highway Program was created by the Legislature in 1963. Its purpose is to protect and enhance the natural scenic beauty of California highways and adjacent corridors, through special conservation treatment. The State laws governing the Scenic Highway Program are found in the Streets and Highways Code, Sections 260 through 263.

## What elements make a highway "scenic"?

A highway may be designated as scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

## What does the "State Scenic Highway System" include?

The State Scenic Highway System includes a list of highways that are either eligible for designation as State scenic highways or have been officially designated. These highways are identified in Section 263 of the Streets and Highways Code and can be found under the **Scenic Highway System List.**

## What is the difference between an "eligible" and an "officially designated" scenic highway?

An eligible State highway becomes officially designated through a process in which the local governing body applies to Caltrans for scenic highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a State Scenic Highway by the Caltrans Director.

## What is a Corridor Protection Program?

When a city or county nominates an eligible scenic highway for official designation, it must identify and define the scenic corridor of the highway. Scenic corridors are defined as corridors that possesses highly scenic and natural features, as viewed from the highway. Topography, vegetation,

viewing distance, and/or jurisdictional lines determine the corridor boundaries. The CPP summarizes the city or county ordinances, zoning and/or planning policies (collectively called “visual quality protection measures”) that preserve the scenic quality of the corridor. The visual quality protection measures and the CPP should be written in sufficient detail as to avoid broad discretionary interpretation; and need to demonstrate a concise strategy to effectively maintain the scenic character of the corridor. If the visual quality protection measures do not already exist at that local level, additional protection measures would need to be adopted by the local government(s) in order to fulfill the five elements required by legislation defined in the Streets and Highways Code (see below).

## What is included in a Corridor Protection Program?

The CPP describes visual quality protection measures that exist at the local level in five legislatively required areas:

1. Regulation of land use and density of development;
2. Detailed land and site planning;
3. Control of outdoor advertising;
4. Careful attention to and control of earthmoving and landscaping; and
5. The design and appearance of structures and equipment.

Public participation in developing any new elements, and the CPP, is very important if the program is to have popular support.

## What steps are necessary to receive official designation?

If a route is included on the list of State Scenic Highways eligible for official designation per the California Streets and Highways code, contact the Caltrans District Scenic Highway Coordinator. For contact information for Scenic Highway Coordinators, contact the Caltrans Division of Design online:

https://dot.ca.gov/contact-us

The steps for nominating and designating an eligible scenic highway are provided in detail in the **Scenic Highway Guidelines**. In summary: local governmental body/bodies with jurisdiction over lands adjacent to the highway must take the following steps to pursue nomination of an eligible route: 1. Conduct a Visual Assessment (VA) of the route to determine if it meets the current scenic highway criteria and to what extent, if any, development has intruded on the scenic views. 2. Submit a Scenic Highway Proposal to the District Scenic Highway Coordinator. The package should include a letter of intent by the local governing body, maps showing the scenic corridor and existing zoning, a map overlay of development in the corridor, and a narrative description of the scenic elements. The District and State Scenic Highway Coordinators review the proposal and if it is determined that the corridor meets the scenic criteria, the applicant proceeds to the next step. If the route fails this review, it is not advisable to continue seeking official designation. 3. Prepare and adopt a Corridor Protection Program (CPP). The District and State Scenic Highway Coordinators review the CPP. If it is determined that the program meets the legislative standards, a recommendation to designate the highway as scenic is forwarded to the Caltrans Director. The Caltrans Director makes the final determination of whether the segment will receive official designation.

## Can highways be added to the scenic highway system?

Yes. A city or county may propose adding routes with outstanding scenic elements to the list of eligible State highways in the California Streets and Highways Code. However, additions can only be made through legislative action. Consult with the District Scenic Highway Coordinator before initiating action, to ensure that the route qualifies.

## Can county roads become part of the scenic highway system?

Yes. Although there is no official list of county highways eligible for scenic designation, county highways that have outstanding scenic qualities are considered eligible and do not require legislation. To receive official designation, the county must follow the same process required for official designation of State scenic highways.

## How are officially designated scenic highways identified

The California poppy serves as the logo for the State Scenic Highway Program. Caltrans places signs with this logo along officially designated routes.

## Is there special funding for the State Scenic Highway Program?

There is no special State funding source for the planning or preparation of State scenic highway nominations, marketing materials, or built projects related to scenic highways.

## Can scenic highways be widened or otherwise changed?

Yes. However, Caltrans works with appropriate agencies to ensure the protection of scenic corridors to the maximum extent feasible. It identifies impacts to scenic corridors (i.e., degradation and obstruction of scenic views) as an integral part of its project planning, project development and maintenance operations.

## Does official designation preclude development?

No, but an effective Corridor Protection Program, enforced by the applicable local government(s) ensures that development activities within the scenic corridor are compatible with scenic resource protection and community values.

## Can official scenic highway designations be revoked?

The most critical element of the Scenic Highway Program is implementation and enforcement of the Corridor Protection Program by applicable local governments. Revocation of a scenic highway designation can occur if Caltrans determines that the Corridor Protection Program or the scenic quality of the corridor is no longer in compliance. A city or county may request revocation if it no longer wishes to be part of the program.

## What are some of the benefits of official scenic highway designation?

Official designation requires a local governing body to enact a Corridor Protection Program that protects and enhances scenic resources along the highway. A program that is properly enforced by the applicable local government(s) can:

- Minimize the encroachment of incompatible land uses such as junkyards, dumps, concrete plants, and gravel pits, etc. along the scenic corridor.
- Emphasize the preservation of visual quality through aesthetic siting, landscaping or screening.
- Prohibit billboards and regulate on-site signs so that they do not detract from scenic views.
- Encourage development that is more compatible with the environment and in harmony with the surroundings.
- Regulate grading to prevent erosion and cause minimal alteration of existing contours and to preserve important vegetative features along the highway.
- Preserve views of hillsides by minimizing development on steep slopes and along ridgelines.
- Reduce the need for noise barriers (sound walls) by requiring a minimum setback for residential development adjacent to a scenic highway.

## In addition, official scenic highway designation may:

- Enhance community identity and pride, encouraging citizen commitment to preserve community values.
- Enhance land values by maintaining the scenic character of the corridor.
- Provide a vehicle for the community to promote local tourism that is consistent with the community's scenic values


## Statewide Campaigns

- ADA Access
- Adopt-A-Highway
- Amber Alert
- Be Work Zone Alert
- CAL FIRE
- Cal OES: Power Outage and Fire Recovery Resources
- California Climate Investments
- California Connected
- California Transportation Plan 2050
- Clean California
- Go Safely California
- HeatReadyCA.com
- Move Over Law
- REAL ID
- Save Our Water
- Stormwater Education Campaign
- Tenant and Landlord Resources

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**EXHIBIT 3**

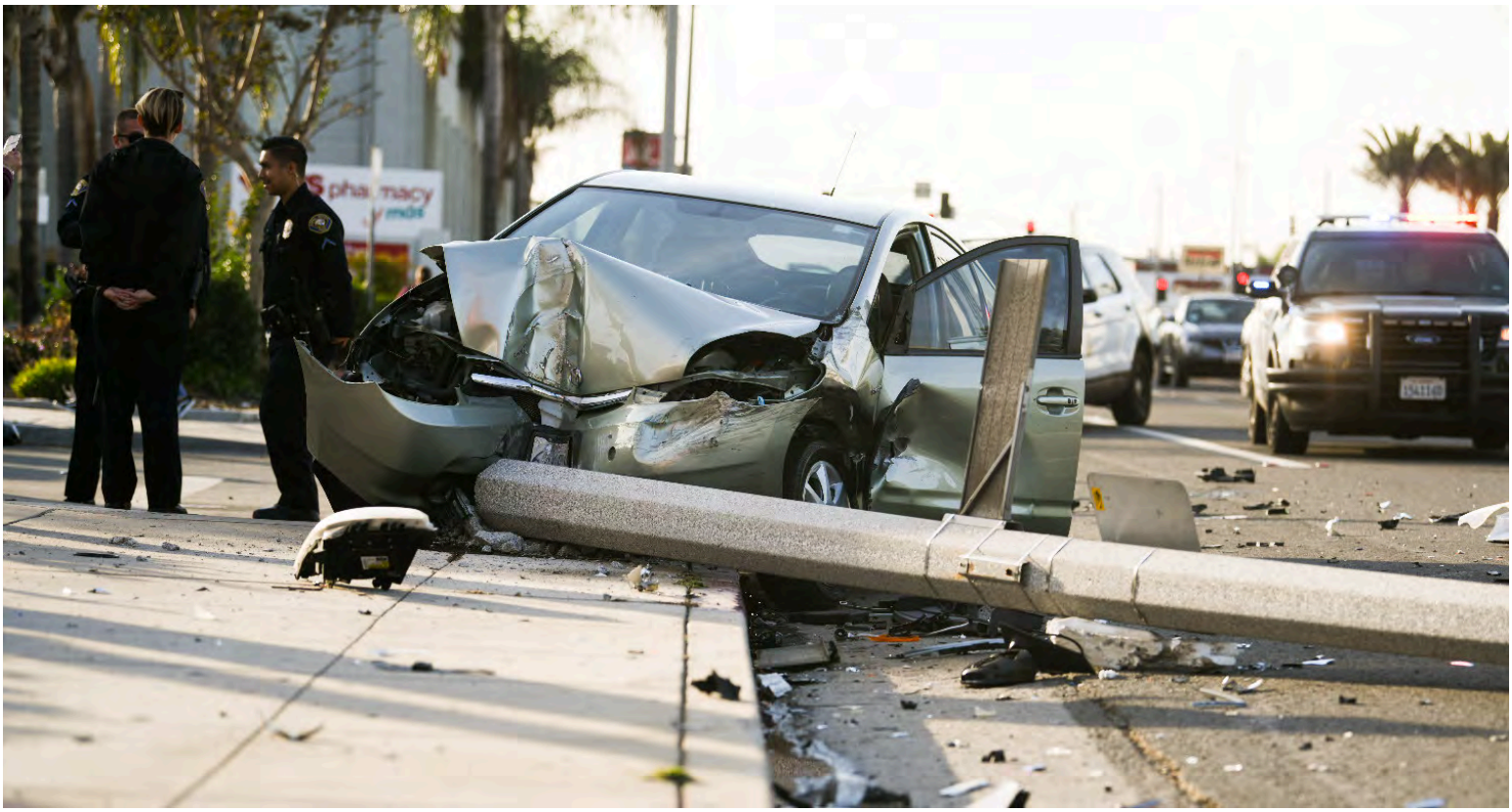
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LONG BEACH POST News

NEWS

# Pacific Coast Highway, one of Long Beach's deadliest streets, may get protected bike lanes



by **Jeremiah Dobruck**
May 29, 2024



A car crashed into a pole on Pacific Coast Highway near Gundry Avenue on Monday, Dec. 2, 2019. Photo by Thomas R. Cordova.

Caltrans is considering adding bike lanes to a stretch of Pacific Coast Highway between the Los Angeles River and The Traffic Circle, a move the agency hopes will protect cyclists and pedestrians.

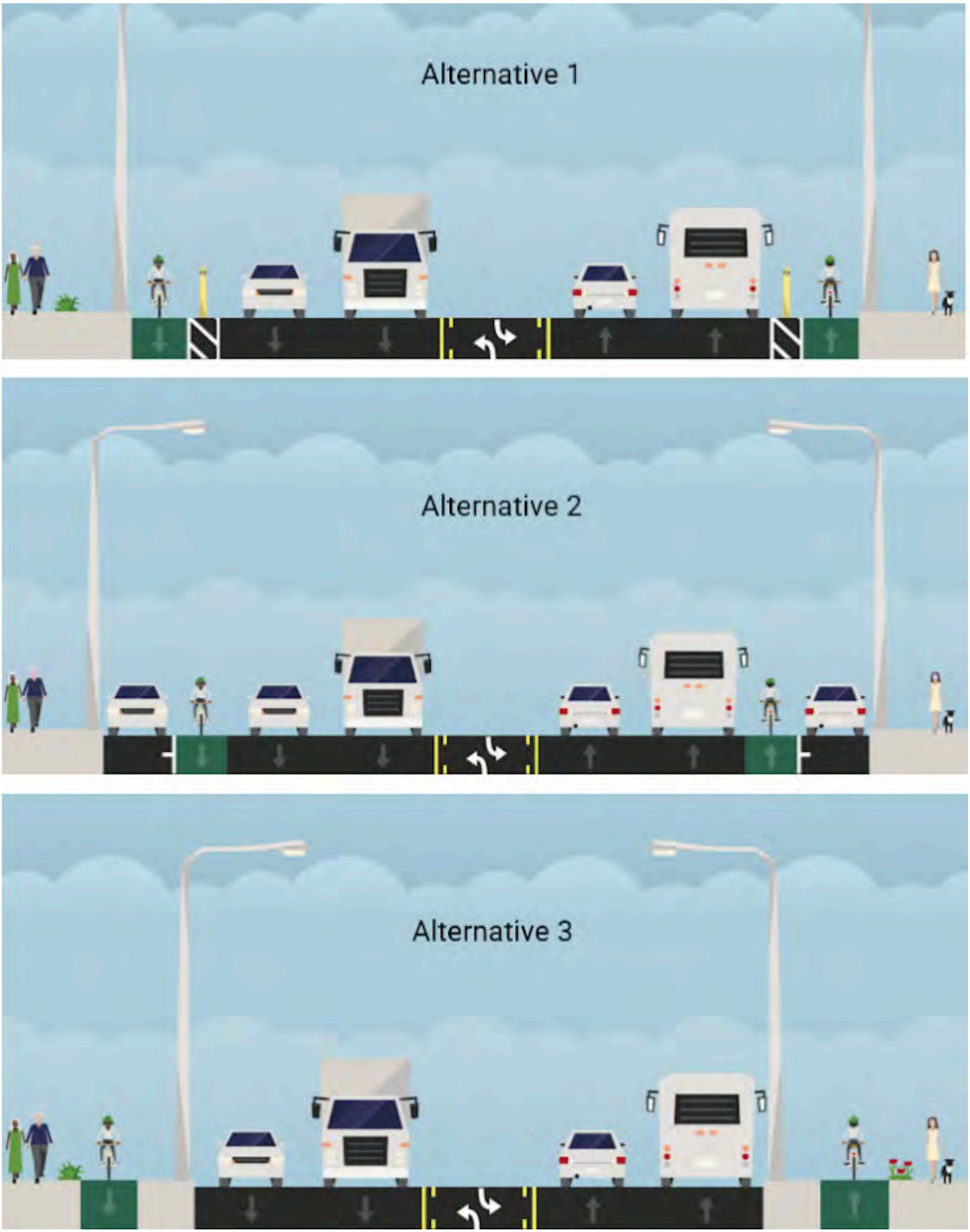
Last year, five people either on foot or on a scooter were **killed in traffic collisions** along that stretch of roadway, something that helped make PCH one of **the city's deadliest roads**.

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Caltrans is now exploring three options to install bike lanes that range from painting new street lines to building a raised median that protects the bike lane and sidewalk.

PCH currently has three lanes of travel in each direction with the curbside lanes being used for parking during non-peak hours. The graphics released by Caltrans show the roadway being potentially narrowed to two lanes in each direction.




A graphic provided by Caltrans shows options for adding bike lanes to Pacific Coast Highway in Long Beach.

Caltrans said the new bike lanes will connect cyclists to the LA River bike path and encourage people to get out of their cars and use other modes of transportation.

In **a Tweet**, Councilmember Suely Saro, whose district is traversed by the project, said she was excited about the plan.

"This initiative will close gaps and significantly enhance safety and accessibility for all riders," she wrote.

*Residents who want to weigh in on the project can fill out a survey at **bit.ly/pch-bikelane** or attend an in-person meeting on June 6 from 6 to 7 p.m. at The Guidance Center, 1301 Pine Ave., Long Beach.*

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LONG BEACH POST News

NEWS

# Fewer people died in traffic last year, but Long Beach is still far from its goal of zero deaths



by **Fernando Haro Garcia**
Feb 18, 2024




Long Beach police investigate a crash at Martin Luther King Jr. Avenue and Pacific Coast Highway on Monday, Nov. 13, 2023. Photo by Fernando Haro Garcia.

Thirty-six people were killed in traffic collisions last year in Long Beach, a significant decline from 45 killed in 2022 but still more than were dying pre-pandemic.

Fatal crashes spiked in Long Beach in 2020, with 49 people killed across the city. From 2013 to 2019 the city averaged only 27 traffic deaths per year. Forty-seven people were killed in 2021. Officials have pointed to an increase in speeding as one of the main factors in the spike.

Most of the people killed in crashes were pedestrians — 102 out of 176 since 2020. The Long Beach Police Department has pointed to people walking into lanes of traffic or outside of a marked crosswalk as another major factor in the surge of deaths.

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The drop to 36 deaths last year comes as Long Beach has put an emphasis on building safer streets and slowing down cars.

“We are beginning to see the results of those actions,” said Joy Contreras, spokesperson for the Long Beach Public Works Department said.

Long Beach is aiming to **eliminate all traffic-related deaths and serious injuries by 2026,** a lofty goal that drew a laugh from John Yi, executive director of **Los Angeles Walks**, a nonprofit that helps community members advocate for safer infrastructure on their streets.

“The plans have not worked,” Yi said of Long Beach’s Safe Streets initiative and similar plans — often called “Vision Zero” initiatives — across the country.

Cities like Long Beach and Los Angeles are still too car-centric, he said; they need to shift their focus and build long-term upgrades for pedestrian and public transit infrastructure.




“The state of pedestrian safety is often a measurement of how healthy a community is,” Yi said. “If you have a community where you can’t walk … you have an unhealthy community.”

Long Beach officials say they are focusing on redesigning streets to create more protected bike lanes, reduce vehicle speeds on major roadways and educate people on road safety.

“Public Works is using a two-pronged approach to building a pedestrian, bicyclist, driver safe environment: in the short term, we are streamlining crosswalk evaluation practices, standardizing ‘quick-build’ elements,” said Joy Contreras, spokesperson for the Public Works Department.

“In the longer term, street repair projects are being scoped as holistic efforts, which include roadway safety features in the initial design phase, with priority given to higher-speed arterials where the risk of severe or fatal crashes is the highest.”

Recently, Long Beach redesigned Spring Street between Studebaker and the 605 Freeway to slow cars down by 10 mph. Before the redesign, 62% of drivers in that roadway were moving faster than the posted speed limit, according to the Public Works Department. After the redesign, where new bike lanes were installed, only 4% of all drivers were speeding.

The department also has dozens of roadway safety projects in the works. Some are already under construction, including **the makeover of Artesia Boulevard,** which will slow down drivers with medians and eliminate some left turn lanes.

The Long Beach Police Department said it's also partnering with Public Works to identify roadways with a history of serious crashes. Police plan to focus on those areas when enforcing the speed limit, educating people about risks and discouraging driving under the influence.

"Individual decisions are also essential to realizing our goal of safer streets," Contreras said. "People who have opted to take more transit, drive smaller vehicles, travel at the speed limit, and avoid roadway distractions also deserve credit for the recent decline in fatal crashes."

One of the deadliest roads in Long Beach, however, remains out of city officials' control.

Data shows that 29 out of 176 fatal crashes since 2020 happened on Pacific Coast Highway, which is controlled by Caltrans, a state agency.

Caltrans has set a goal of eliminating all traffic-related deaths by 2050, but factors such as speeding, aggressive driving or texting while driving continue to drive up the number of crashes.

Caltrans spokesperson Allison Colburn said the department has made several upgrades to the 8-mile stretch of PCH in Long Beach. They include protected left turns, audible pedestrian signals, pavement delineation, signage and speed feedback devices, she said.

Caltrans also has two safety projects currently under construction in Long Beach that will improve ramp access at crosswalks, they said.

**A new bill presented by state Sen. Scott Wiener** could also prompt Caltrans to make pedestrian and bicycle safety upgrades to all state roads — including PCH.

The bill would require Caltrans to do things like adding crosswalks and curb extensions on state-owned surface streets, according to a **statement from the senator's office**. Another bill, SB 961, could also require carmakers to install new technology in vehicles that would put new limits on how fast a driver can travel.

"The alarming surge in road deaths is unbearable and demands an urgent response," Wiener said in a statement.

The 36 people who died in Long Beach crashes last year outpaces the number of people killed in homicides: 26.

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LONG BEACH POST Voices

OPINION

# Column: Long Beach is trying to end traffic deaths, but one of its deadliest roads poses a complex problem



by Jake Gotta
December 5, 2023




Long Beach police investigate a crash at Martin Luther King Jr. Avenue and Pacific Coast Highway on Monday, Nov. 13, 2023. Photo by Fernando Haro Garcia.

**Last month,** a man was sitting at a bus stop on Pacific Coast Highway near Martin Luther King Jr. Avenue when a speeding car hit and killed him.

He was one of eight people who have been killed by traffic on Pacific Coast Highway this year, making it one of Long Beach's deadliest roads. This would seem like a perfect target for the city's **Safe Streets initiative** aimed at stemming the rising number of traffic deaths and ultimately eliminating them altogether.

Long Beach's Department of Public Works does have projects in the pipeline on dozens of roadways intended to decrease speeds and increase safety, but Pacific Coast Highway is not among them because — as a state route — it is managed by Caltrans, not the city. This designation adds another layer of complexity to getting any improvements done because multiple different groups must coordinate with each other to make changes.

To that end, some local politicians are trying to better coordinate with Caltrans. After this most recent fatality, I called Assemblymember Josh Lowenthal, whose 69th District covers most of Long Beach and a stretch of PCH from the 110 Freeway to Seal Beach. He says he has created a task force of local and state officials to address roadway safety on this state-managed road.

"I'm not only looking in my capacity as a lawmaker and a legislator but I'm a resident and part of that community," he told me. "I live [near the 2ND & PCH shopping center] so I'm a stakeholder. It concerns my family's safety, and my neighborhood."

He said that a few months ago he met with Long Beach City Councilmember Kristina Duggan, who represents Council District 3 in southeast Long Beach, and they agreed to create a Caltrans 'task force.' It includes the city traffic engineer Paul van Dyke; Shane Weaver, government affairs liaison from Caltrans District 7; and Nick Kaspar, chief of staff to Councilmember Duggan.

They have met twice so far, with various members from Caltrans and the city in attendance, according to Clayton Heard, senior field representative for Lowenthal's office. The next meeting will be in the new year, where they plan to discuss their near-term goal of improving traffic light timing and identifying signals that need to be adapted.

While the short-term goals are "not super exciting," according to Heard, the plan is that this group could be the starting point for much bigger ideas.

"I think it's too early to identify any specific infrastructure projects," Heard said in an email. "Right now we are really focused on bringing the different parties together to establish a more regular communication."

"The whole idea," Lowenthal said, "is to bring all these groups together to improve coordination between all of these different stakeholders."

Hopefully, down the line, he said, the task force can discuss ideas or projects that will come from city and Caltrans engineers.

“We, the Office of Assemblymember Lowenthal, don’t really have any say over infrastructure projects,” Heard said. “That’s up [to] the City or Caltrans, we are just encouraging them to really consider the safety and traffic impacts in this area, and elevate the constituent concerns that we have received.”

With several major housing projects coming to the area, Lowenthal said we need to prepare and make sure these streets are safe and can handle car, pedestrian and bicycle traffic.

He’s right to be **concerned about this** with more than 1,200 new housing units slated to be built at the already notoriously busy intersection of Second Street and PCH.

“Overall we just need to continue investing in multi-modal transportation,” Lowenthal said, “and make sure the streets are safe for everybody.”

Hopefully, others in the task force will agree, and start working on plans to invest in transit and pedestrian and bike safety on the road that bisects our city. Every person walking, riding a bike, or taking transit is one less car on the road, and that makes our streets safer for everybody.

Do you have ideas for the task force? *Assemblymember Lowenthal’s office can be reached **here**. Caltrans also has a standing email address for service requests: **csr@csr.dot.ca.gov.***

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**EXHIBIT 4**

# BIXBY VILLAGE PLAZA

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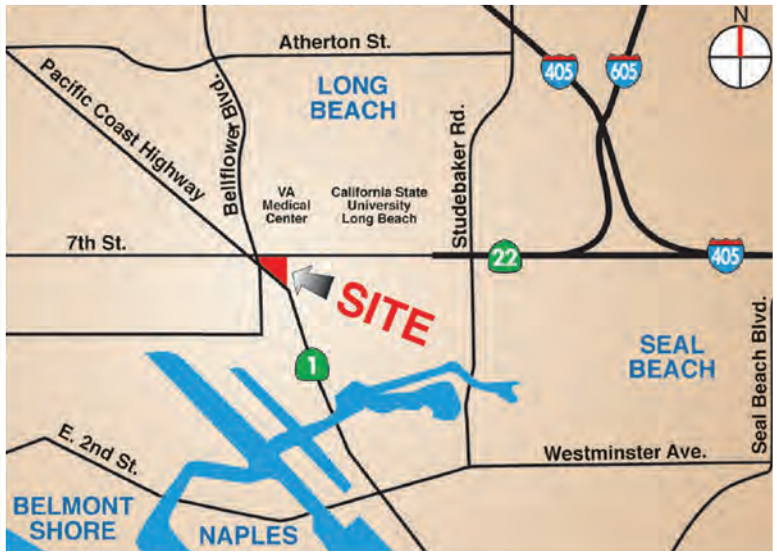


## HIGHLIGHTS

- 76,883 square foot neighborhood shopping center
- Three major intersections of 7th St., Bellflower Blvd., & Pacific Coast Highway
- Anchored by Target & CVS Pharmacy
- Located in the affluent area of Long Beach adjacent to California State University, Long Beach, the VA Medical Center & Belmont Shore.

## TRAFFIC COUNT

- 142,240 average cars per day on 7th Street and Pacific Coast Highway







## 2017 DEMOGRAPHICS (Alteryx)

| | ESTIMATED POPULATION | AVERAGE H.H. INCOME | DAYTIME POPULATION |
|---|---|---|---|
| 1 MILE | 15,169 | $151,096 | 45,533 |
| 3 MILE | 192,837 | $97,851 | 203,883 |
| 5 MILE | 450,147 | $90,731 | 451,902 |





WESTAR ASSOCIATES

5760 E 7th St | Long Beach, CA 90803

For More Information, Contact:
**(800) 353 7822**
**www.WestarAssociates.com**
CA License NO: 00655156

# BIXBY VILLAGE PLAZA

## LONG BEACH, CALIFORNIA

| UNIT | TENANT | SQ. FT |
|---|---|---|
| Bldg - A | CVS | 14,000sf |
| Bldg - D | Target | 33,382sf |
| Pad - C | Chevron Station | 2,000sf |
| B-1 | After's Ice Cream | 1,340sf |
| B-2 | Yogurtland | 1,448sf |
| B-3 | Finest Nails | 1,085sf |
| B-4 | J's Cleaners | 1,584sf |
| B-5 | NAM Vietnamese Eatery | 1,368sf |
| B-6 | L & L Hawaiian BBQ | 1,368sf |
| B-7 | Zpizza | 1,440sf |
| B-8 | Cha For Tea | 1,440sf |
| B-9 | Hour Eye Care | 1,440sf |
| B-10 | Available | 1,668sf |
| E-1 | Sapporo Sushi | 4,000sf |
| E-2 | Ike's Love & Sandwiches | 1,860sf |
| E-3 | Caffé Bene | 1,860sf |
| E-4 | East Coast Bagels | 1,240sf |
| E-5 | On the Rocks Bar & Grill | 3,720sf |
| E-6 | US Bank | 2,640sf |





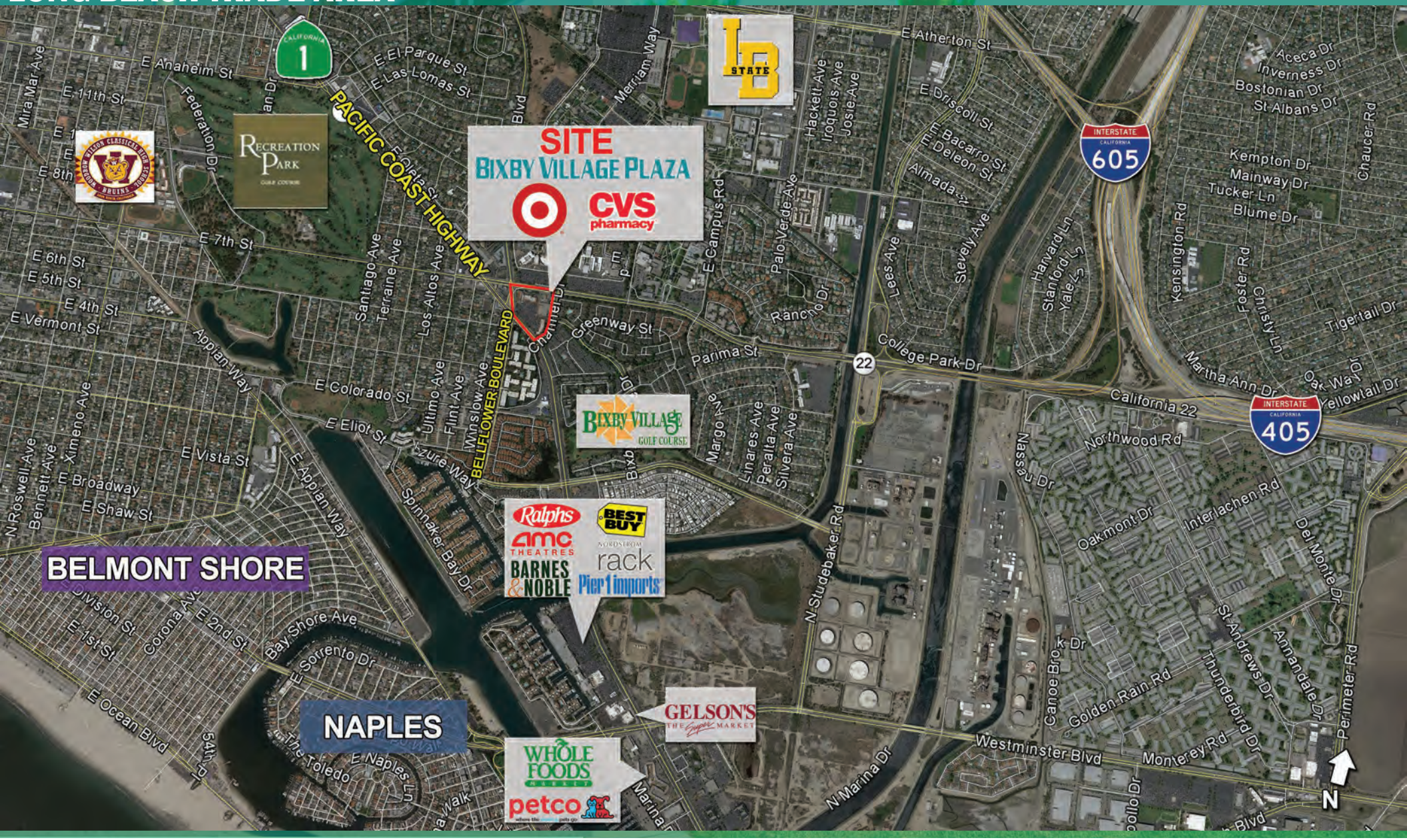
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# BIXBY VILLAGE PLAZA
## LONG BEACH, CALIFORNIA

## LONG BEACH TRADE AREA





WESTAR ASSOCIATES

5760 E 7th St | Long Beach, CA 90803

For More Information, Contact:
**(800) 353 7822**
**www.WestarAssociates.com**
CA License NO: 00655156




# 2ND & PCH

LONG BEACH, CA

6400 E. Pacific Coast Highway, Long Beach, CA







# Why 2ND & PCH

LONG BEACH, CA

**Average Household Income of $200,000+** within our immediate trade area.

**Impressive sales-volume restaurants** with 180 degree water views of the Alamitos Bay and marina.

**Incredible Co-Tenancy** with High Performing Whole Foods, Sephora, Nike By Long Beach, lululemon, Shake Shack, Ola Mexican Kitchen and more.

**Positioned at the cream of the demographic** - the under-served market of Naples Island, Belmont Shore, Park Estates, Palos Verdes & Seal Beach.

# 2ND & PCH

LONG BEACH, CA



2ND & PCH sits at the **gateway between Orange County** and **Long Beach**





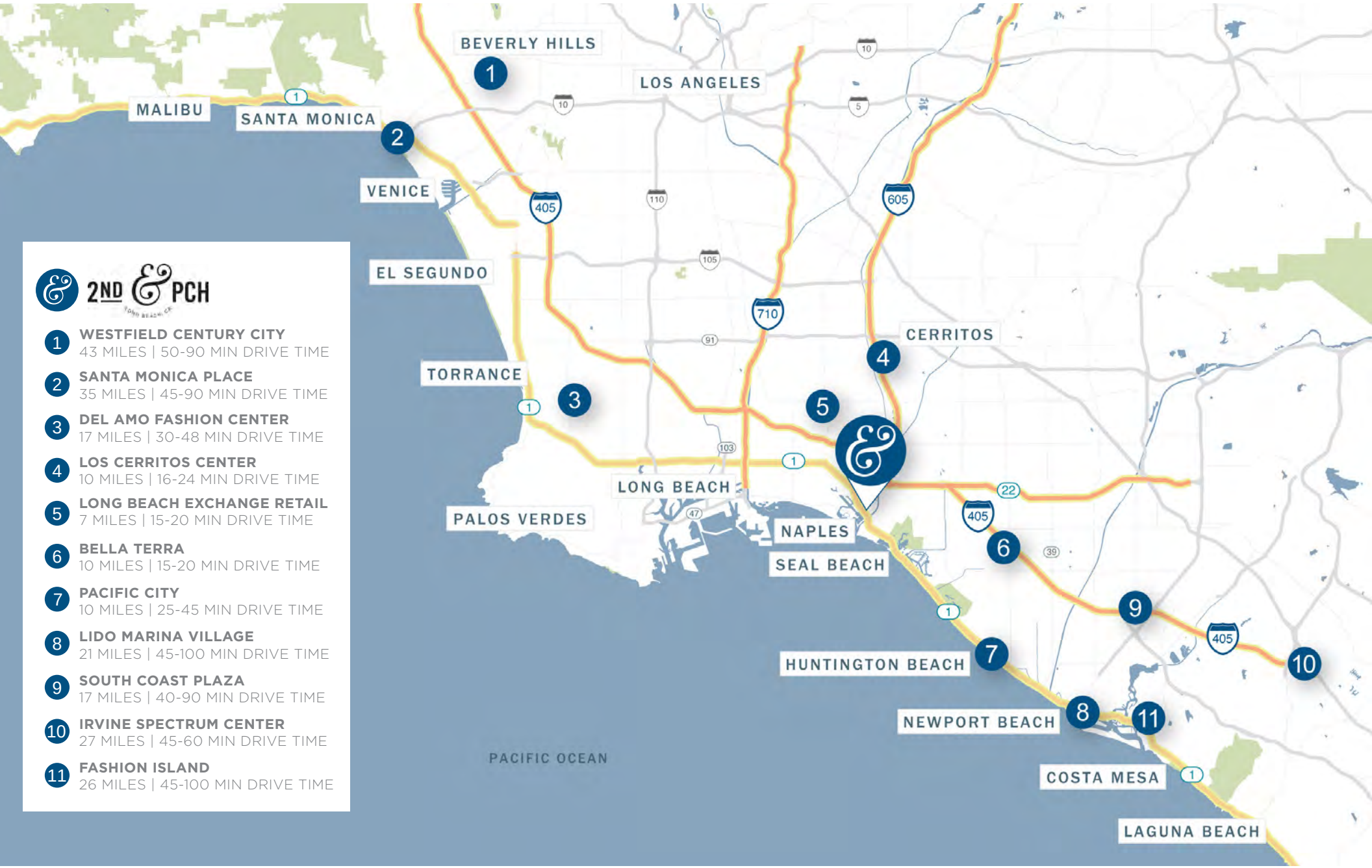
**UNPARALLELED ACCESS**

minutes from the 405, 605, 710 & 22

**$220,970**

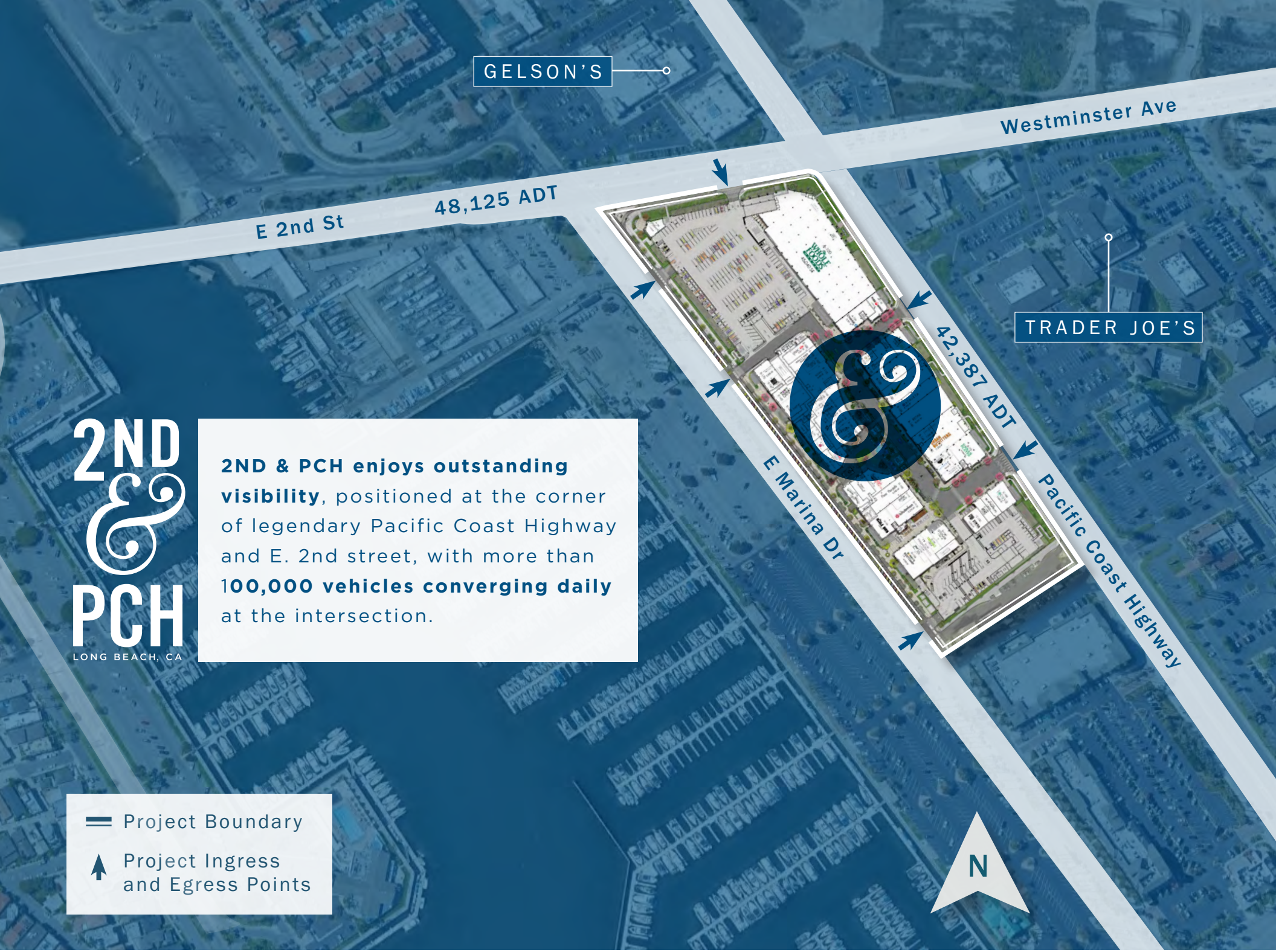
2022 Estimate 1-Mile Avg. Household Income

# *Retail* LANDSCAPE




& 2ND & PCH

1. **WESTFIELD CENTURY CITY**
   43 MILES | 50-90 MIN DRIVE TIME
2. **SANTA MONICA PLACE**
   35 MILES | 45-90 MIN DRIVE TIME
3. **DEL AMO FASHION CENTER**
   17 MILES | 30-48 MIN DRIVE TIME
4. **LOS CERRITOS CENTER**
   10 MILES | 16-24 MIN DRIVE TIME
5. **LONG BEACH EXCHANGE RETAIL**
   7 MILES | 15-20 MIN DRIVE TIME
6. **BELLA TERRA**
   10 MILES | 15-20 MIN DRIVE TIME
7. **PACIFIC CITY**
   10 MILES | 25-45 MIN DRIVE TIME
8. **LIDO MARINA VILLAGE**
   21 MILES | 45-100 MIN DRIVE TIME
9. **SOUTH COAST PLAZA**
   17 MILES | 40-90 MIN DRIVE TIME
10. **IRVINE SPECTRUM CENTER**
    27 MILES | 45-60 MIN DRIVE TIME
11. **FASHION ISLAND**
    26 MILES | 45-100 MIN DRIVE TIME



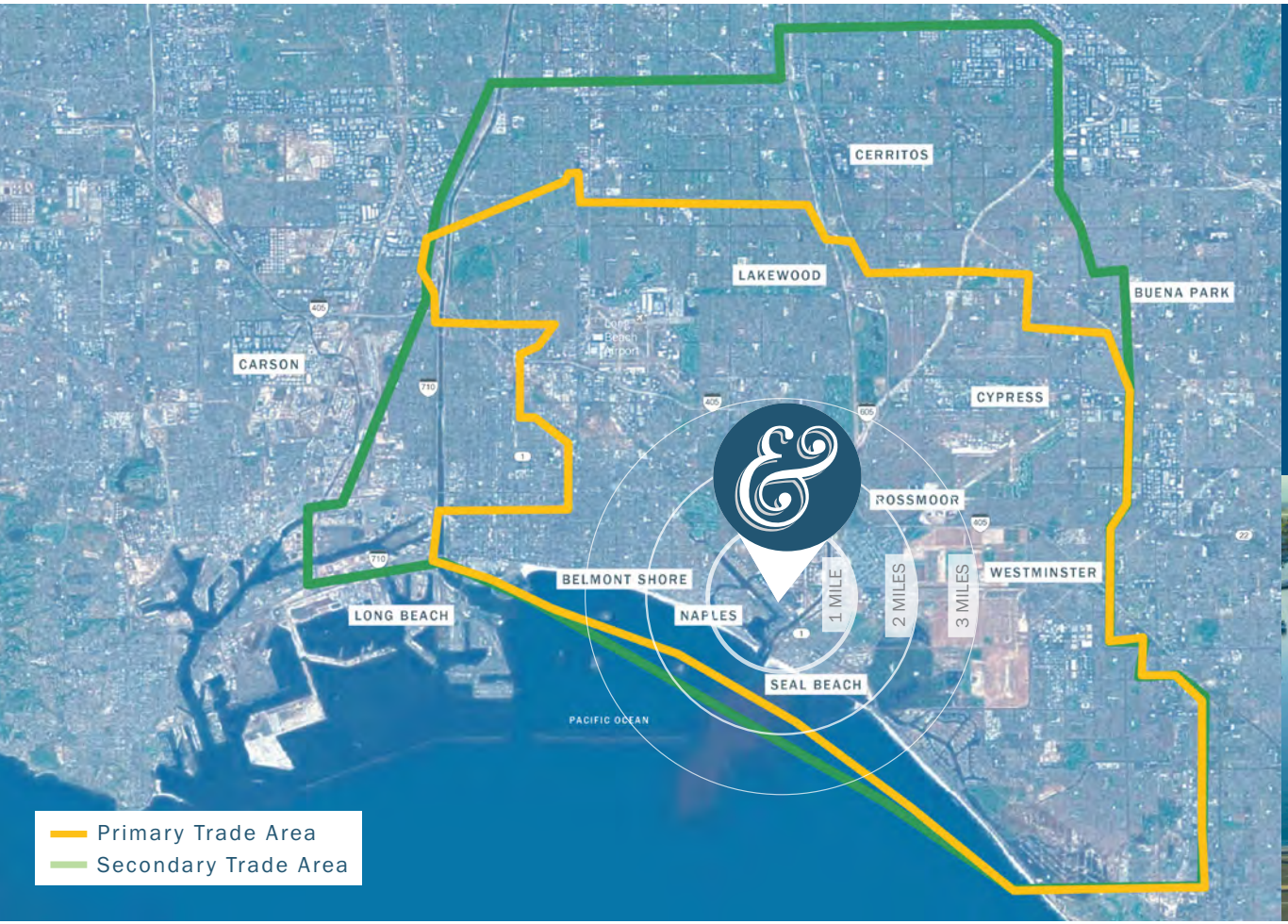

2ND & PCH
LONG BEACH, CA

**2ND & PCH enjoys outstanding visibility**, positioned at the corner of legendary Pacific Coast Highway and E. 2nd street, with more than 1**00,000 vehicles converging daily** at the intersection.

Project Boundary

Project Ingress and Egress Points

# Trade AREA



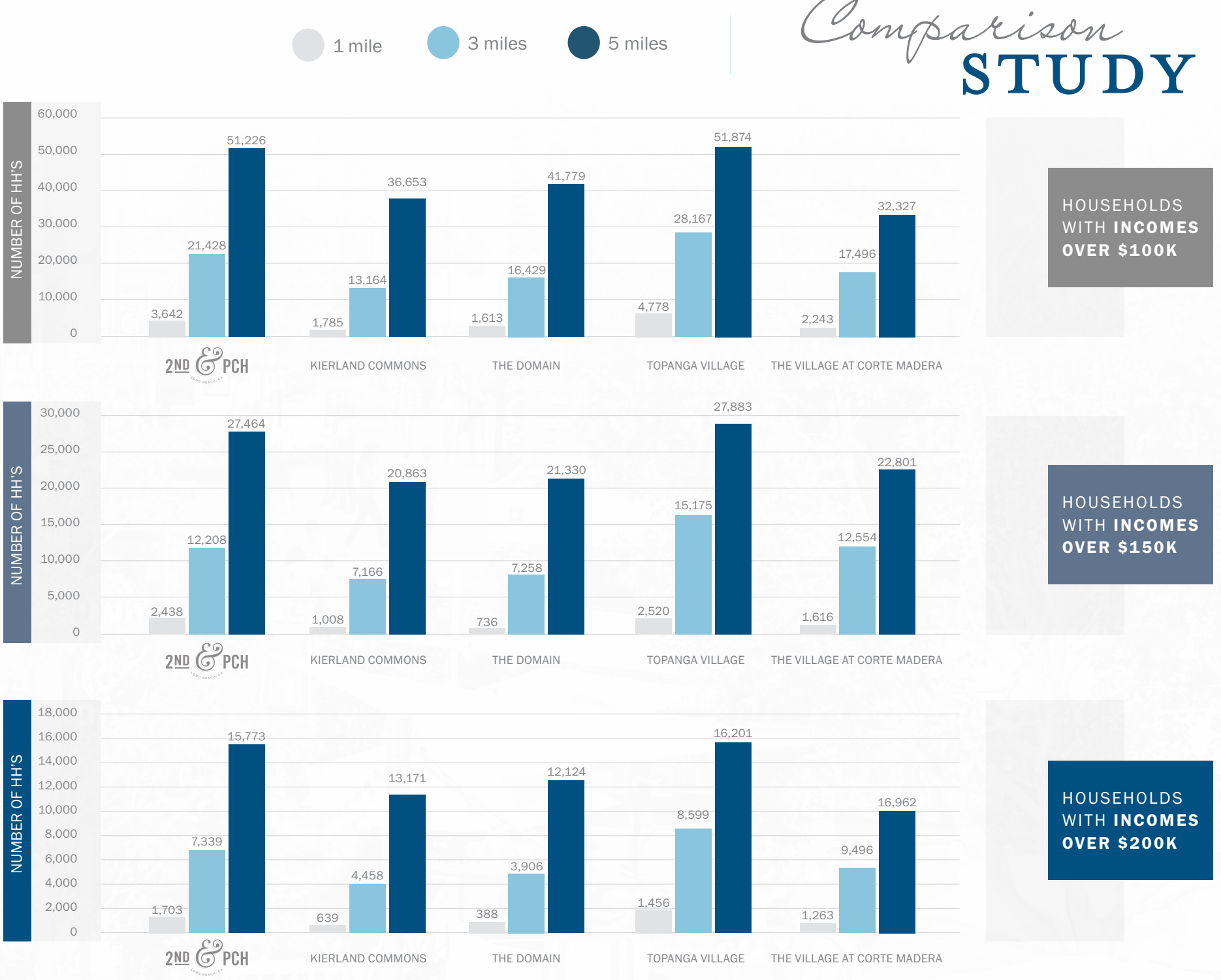

MOBILE TRADE AREA COMPARISON

| Site | 3 mile radius | 15 min Drive | Total Mobile Trade Area |
|---|---|---|---|
| 2ND&PCH | 111,145 | 701,206 | 1,417,955 |
| The Point | 180,740 | 570,153 | 960,004 |
| Fashion Island | 93,765 | 365,928 | 1,875,276 |



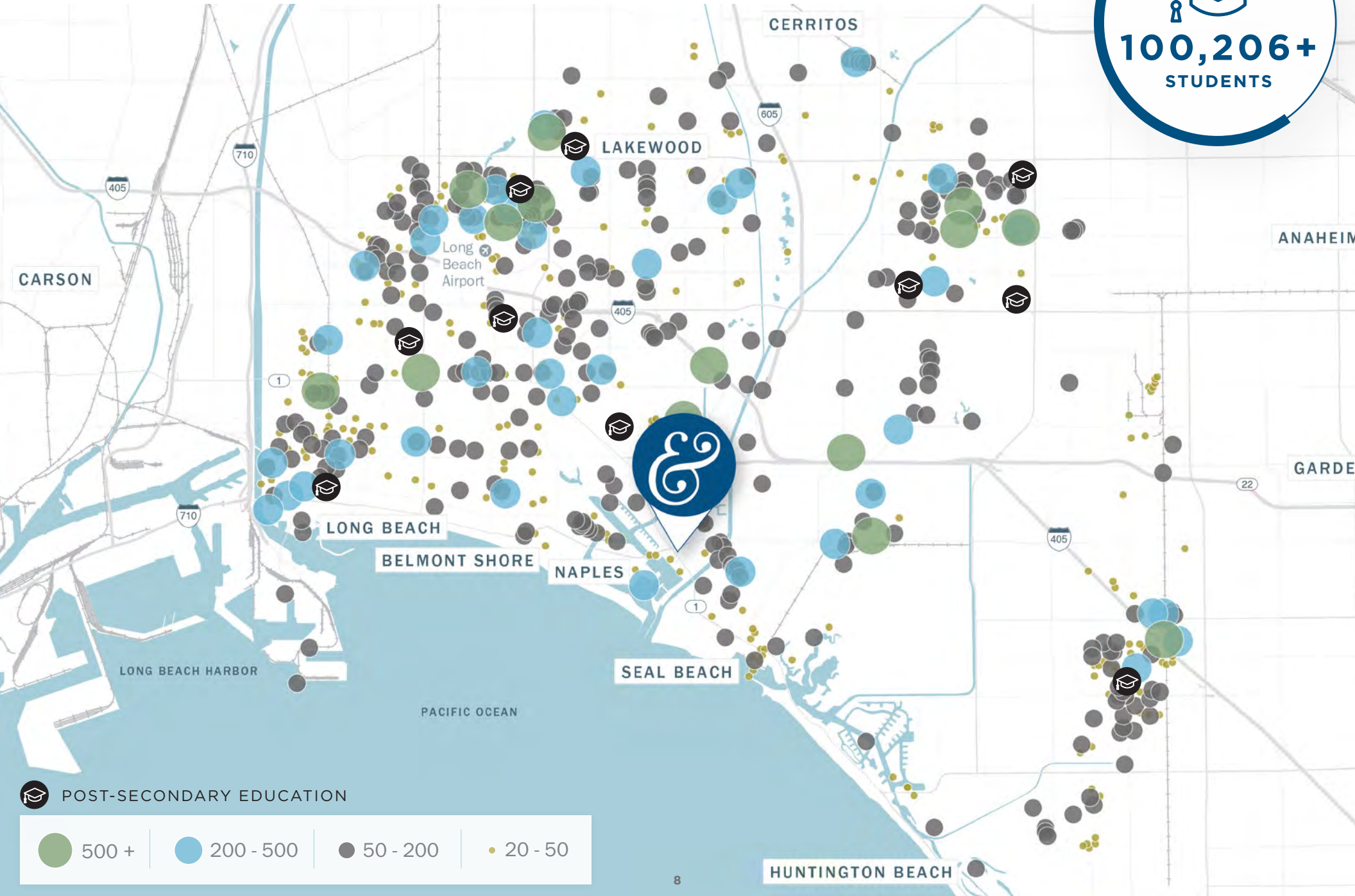
| | 1-mile radius | 2-mile radius | 3-mile radius |
|---|---|---|---|
| Population Growth | 13,686 | 51,007 | 111,145 |
| Avg. Household Income | $220,970 | $149,962 | $139,901 |
| Any College + | 9,148 / 84.8% | 32,925 / 83.7% | 66,820 / 81.5% |
| College Degree + | 6,193 / 57.4% | 21,433 /54.5% | 42,425 / 51.8% |

# Comparison STUDY



# *Day Population*
# & BUSINESSES

**100,206+**
**STUDENTS**







# Day Population & BUSINESSES

| BUSINESS | # OF EMPLOYEES |
|---|---|
| Long Beach City Hall | 5,000 |
| California State University | 3,057 |
| VA LB Primary Care | 2,500 |
| US Veterans Medical Ctr | 2,500 |
| US Health Care Svc | 2,000 |
| LB Chief of Police Office | 1,600 |
| Long Beach Police Dept | 1,500 |
| St Mary's Medical Ctr | 1,203 |
| WGA Consulting LLC | 1,001 |
| Gulfstream Aerospace Corp | 900 |
| Los Alamitos Medical Ctr | 875 |
| Long Beach Transit | 780 |
| Trend Offset Printing Svc Inc | 600 |
| Arrowhead Products | 600 |
| Avida Caregivers of Long Beach | 550 |
| Zodiac Aerospace | 505 |
| SCAN Health Plan | 500 |
| Office Depot | 500 |
| Walters Wholesale | 500 |
| Moffatt & Nichol | 500 |
| Community Hospital LB | 452 |
| Hyatt Regency LB | 450 |
| Keller Williams Realty | 400 |
| Health Care PArtners-Urgent | 375 |
| LB Health & Human Svc | 360 |
| Boardriders Inc | 349 |
| Target | 335 |
| Thumsco | 300 |
| SMG Catering | 300 |
| Westin LB | 300 |
| Cambro Manufacturing Co | 300 |
| Epson America | 300 |
| Jet Blue Airways | 300 |
| Robert A Millikan High School | 300 |
| Rossmoor Homeowners Assn | 300 |

| BUSINESS | # OF EMPLOYEES |
|---|---|
| Woodrow Wilson High School | 300 |
| National Emblem Inc | 295 |
| Renaissance | 280 |
| Aquarium of the Pacific | 275 |
| 265 Children Youth & Home | 265 |
| Los Alamitos High School | 260 |
| LB Refuse Collection | 250 |
| California Resources Corp | 250 |
| Costco Wholesale | 250 |
| Home Depot | 250 |
| Roger Cleveland Golf Co | 250 |
| Colonial Care Ctr | 240 |
| LB Environmental Svc | 240 |
| LB Polytechnic High | 230 |
| Marriott LB | 208 |
| Golden Rain Foundation | 201 |
| Katella Deli-Restaurant-Bakery | 201 |
| Harbor Distributing LLC | 200 |
| Sam's Club | 200 |
| Health Care Partners | 200 |
| LB United School Dist | 200 |
| Home Depot | 200 |
| Action RE School | 200 |
| Century 21 Action RE | 200 |
| Excel Paving Co | 200 |
| LB Police Dept - Traffic | 200 |
| LB Police - South Div | 200 |
| Designory Inc | 200 |
| Allen Supply Co | 200 |
| Rossmoor Realtors | 200 |
| LB Youth Ctr | 200 |
| Qwickey | 200 |
| Magensa | 200 |
| Keller Williams Realty | 200 |
| **Total** | **39,937** |

*The Outdoor*

# ACTIVE LIFESTYLE...

2ND & PCH IS A MAGNET FOR THE OUTDOOR ENTHUSIAST

BOATING, KAYAKING, SWIMMING, PADDLE-BOARDING

ALONG WITH OUR OWN DEDICATED BIKE LANES

THE MARINA AND ALAMITOS BAY












**SOCIAL HUB**
AND COMMUNITY
GATHERING PLACE

# Area HOTELS


HOTEL
LAKEWOOD
BUENA PARK
Long Beach Airport
CARSON
CYPRESS
ROSSMOOR
LONG BEACH
WESTMINSTER
BELMONT SHORE
NAPLES
SEAL BEACH
PACIFIC OCEAN
HUNTINGTON BEACH
405
710
1
605
NEARLY
3,000
HOTEL ROOMS
MORE THAN
6 MILLION
TOURISTS
ANNUALLY




MAY 2023 (NTS) Not to scale

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LEVEL 2

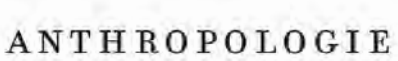
MAY 2023 (NTS) Not to scale

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WHOLE FOODS MARKET


lululemon


ATHLETA


ANTHROPOLOGIE


The NOW


one medical


BARRY'S


Beachwood
BREWING


BE Fit
MODERN PILATES


BOBA GUYS


A


Caffe Luxxe
AN ARTISANAL EXPERIENCE


CHASE


dan
modern chinese


Madewell


the Bungalow Kitchen
BY MICHAEL MINA


gorjana


MADISONREED


NIKE
BY LONG BEACH


woofpak


URBAN OUTFITTERS


JOHNNY WAS


jolie


PAPER SOURCE


COMPASS


free people


BRIXTON


SEPHORA


SHAKE SHACK


SKIN SPIRIT


JINYA
RAMEN BAR


WARBY PARKER


URBAN PLATES


OLA
MEXICAN KITCHEN


tocaya
MODERN MEXICAN


UNTUCKit




CENTERCAL PROPERTIES, LLC

**GRACE YANG**
917.828.4049 | gyang@centercal.com

**HEDY VEVERKA**
415.613.5813 | hveverka@centercal.com

**EXHIBIT 5**

CALIFORNIA STATE UNIVERSITY
LONG BEACH

January 23, 2025

To: Department of Development Services, Planning Bureau
ATTN: Gina Casillas, Planner
411 W. Ocean Boulevard, 3rd Floor
Long Beach, CA 90802

From: Melissa Soto, Manager of Capital Program Development
Design & Construction Services

**Re: Comments on the Park Tower Student Housing Project Draft Environmental Impact Report (EIR)**

On behalf of California State University, Long Beach (CSULB), the Board of Trustees of the California State University (CSU) appreciates the opportunity to review the DEIR for the "Park Tower Student Housing Project" (the "Project"). The Project aims to adapt a seven-story office building with three levels of subterranean parking into what it describes as a private dormitory or housing for students. CSULB offers the following comments in response to the DEIR:

1. **Project Title**. CSULB has serious concerns that the members of the public will be misled or confused into believing that the Project, which includes the terms "Student Housing" in its title, is affiliated with CSULB or with the nearby CSU-owned Beachside Village student housing complex. CSULB is in no way associated with this project and has neither endorsed nor participated in any aspect of its development. In order to avoid confusion that the proposed project is owned or affiliated with the CSU, the project title should be modified to clarify the term "student" as follows: Park Tower Private Student Housing Project, or Park Tower Non-university Student Housing Project, or similar. References to the Project should take care to avoid any suggestion that the Project is affiliated in any manner with the CSU and/or CSULB.

2. **Project Description**. Although some references to CSULB have been removed from the Project Description, Figures 2-6 and 2-7 continue to incorrectly refer to CSULB's Beachside shuttle service as available public transit in the project area. Furthermore, the Project Description continues to indicate that the proposed project would convert an existing office building into a "private dormitory (housing for students)." These references are misleading and confusing. The Beachside shuttle service is not available public transit in the project area, as the Beachside shuttle service is exclusively reserved for use by residents of the CSU-owned Beachside Village student housing complex. The Beachside shuttle service would not provide shuttle service for residents traveling to or from the Project. The Draft EIR should not refer to the Beachside shuttle service as public transit, and the Draft EIR should be revised accordingly.

   In addition, it remains unclear what is meant by the terms "private dormitory" and "student housing." No information is given as to which "students" would be eligible to

live in the proposed development or how residents of the new units would be selected. Given that the proposed development is not a CSULB-endorsed or affiliated project, it is misleading to characterize the proposed project as either a "dormitory" or "student housing," particularly when doing so in a context that references CSULB-owned or operated programs, such as CSULB's Beachside Shuttle program. Continued references to "students" in the project description are likely to confuse the public into believing the Project is directly or indirectly affiliated with CSULB when there is no affiliation of any kind between the Project and the CSU. Accordingly, all references and mentions of the CSU, CSULB, and/or CSULB-owned or operated programs, should be stricken from the Draft EIR. Furthermore, the Draft EIR should explicitly state that the proposed project has no affiliation with, or relation to, CSULB.

3. **Section 4.15, Public Services**. The impact analysis for parks states that impacts to park land and recreation would have a less than significant impact because the proposed project would be required to pay park impact fees. It is also stated, however, that residents would likely primarily utilize amenities on-campus at CSULB. As indicated above, the proposed project is not affiliated with CSULB nor its student housing programs and facilities. Accordingly, the proposed project would not be allowed to offer CSU or CSULB-owned or operated facilities or programs to its residents. The Draft EIR should remove the assumption that residents would utilize campus facilities, and the project developer should refrain from advancing this assumption as a basis for the impact analysis.

4. **Section 4.16, Recreation**. The impact analysis for recreation states that impacts to recreational facilities would have a less than significant impact because the proposed project would be required to pay park impact fees. It is also stated, however, that residents would likely primarily utilize recreational amenities on-campus. As discussed above, the proposed project is not affiliated with CSULB nor its student housing programs and facilities; therefore, the proposed project and its residents would not be allowed to utilize CSU or CSULB-owned or operated facilities. The Draft EIR should remove the assumption that residents would utilize campus facilities and should not use this assumption as a basis for the impact analysis.

5. **Technical Appendices**. Appendix H (Trip Generation Analysis and VMT screening) states that the analysis of vehicle trips for the project was prepared based on the ITE Trip Generation Rate for Off-Campus Student Apartment land use with a subcategory of "adjacent to campus." The proposed project is not affiliated with CSULB, nor its student housing programs and facilities; therefore, utilizing the land use category of "Off-Campus Student Apartment" is inaccurate. The proposed project and its residents would not be considered Off-Campus housing as that terminology is strictly utilized by CSU or CSULB-affiliated student housing. The Draft EIR and all associated technical analyses should remove the assumption that residents of the proposed project are CSU or CSULB students and should not use this assumption as a basis for the impact analysis. In addition, as stated above, the CSU-owned Beachside shuttle service would not be available to residents of the proposed project, and the Draft EIR should not use this assumption as part of its transportation analysis.

Thank you for your consideration of CSULB's comments.

*Melissa Soto*

Melissa Soto, Manager of Capital Program Development
CSULB Design & Construction Services

## Gina Casillas

**From:** Derek Burnham <derek@burnhamdevelopment.com>
**Sent:** Monday, October 21, 2024 2:30 PM
**To:** Gina Casillas
**Cc:** Amy Harbin
**Subject:** Re: 5150 E Pacific Coast Hwy

-EXTERNAL-

Hi Gina,

The shuttle stop is shown as a "potential" component on the plans as opposed to something definite, and ownership would like to leave that open as a possibility, with either the operator providing this or subsequent discussions with CSULB. Further, Studio 111 is not engaged on the project at the moment, so there is a rather large logistical challenge with getting any revised plans. Given that it is shown as a potential element only, I'm hopeful we can move forward without the need for revisions.

Thanks.

**Derek Burnham**
Principal, Burnham Planning & Development
p:562.354.1430 | m:[redacted] | e:derek@burnhamdevelopment.com | w:burnhamdevelopme

Sent from my iPad

On Oct 21, 2024, at 1:45 PM, Gina Casillas <Gina.Casillas@longbeach.gov> wrote:

Hi Derek

We are moving along with the DEIR for 5150 East Pacific Coast Hwy. We need the plans revised, to rove reference to the shuttle service/stop which is no longer part of this project. Please remove all reference to this from the plan set.

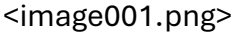
After reviewing the plans, specifically:
Page 5, Page 11 Overall Concept Site Plan, Page 12, Page 13, Page 14 and Page 32.

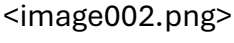
Please let me know when they can completed.

Thank you!

Respectfully,

**Gina Casillas**
*Planner*
**Community Development | Planning Bureau**
411 W. Ocean Blvd., 3rd Fl. | Long Beach, CA 90802
Office: 562.570.6879 | Email: gina.casillas@longbeach.gov





## Gina Casillas

**From:** Christopher Koontz
**Sent:** Friday, December 20, 2024 2:37 PM
**To:** Gina Casillas; CD - Communications Division; Alison Spindler-Ruiz; Amy Harbin
**Subject:** 5150 PCH, immediate problem

Gina, Comms and team,

CSULB notified me about this project. Our project description references Cal State Long Beach, which apparently the applicant does not have the rights to do and has been sent multiple cease and desist letters from the University. The university is also saying they will not be running shuttles or otherwise facilitating or cooperating with this development in any way. I'm not sure what we assumed in the EIR.

Immediately, the request from the university is at least on our website please removed the words California State University Long Beach from all project descriptions and notices, web content, etc.

I'm hoping Comms can process that while we figure out the bigger problem.

As one example we could adjust the text as follows:

The project would adaptively reuse the existing office building into private housing for students ~~enrolled in California State University, Long Beach~~ with 149 student residential suites (593 beds), totaling approximately 73,486 sf of residential area.

I know it does say private, its picky, but I don't want to start a fight with CSULB, and I'm now a little worried about this applicant and application.

Let me know when we make progress, thank you,

**Christopher Koontz**
*Director*

**Community Development**
411 W. Ocean Blvd., 3rd Fl. | Long Beach, CA 90802
Office: 562.570.6288

LONGBEACH COMMUNITY DEVELOPMENT

**EXHIBIT 6**

LONG BEACH
UNIFIED • SCHOOL • DISTRICT

Business Services Department
Facilities Development & Planning
2425 Webster Avenue, Long Beach, CA 90810
Phone: (562) 997-7550 | Fax: (562) 595-8644
www.lbschoolbonds.net

September 11, 2024

VIA EMAIL

Gina Casillas
City of Long Beach – Department of Development Services
411 W. Ocean Blvd., 3rd Floor
Long Beach, CA 90802
LBDS-EIR-Comments@longbeach.gov

RE: Park Tower Student Housing Project – Notice of Preparation of an Environmental Impact Report

Dear Development Services:

The Long Beach Unified School District ("District") is in receipt of the City of Long Beach's ("City") Notice of Preparation of an Environmental Impact Report, regarding the Park Tower Student Housing Project, located at 5150 Pacific Coast Highway, within the City of Long Beach.

The project would adaptively reuse the existing office building into private housing for students enrolled in California State University, Long Beach with 149 student residential suites (593 beds), totaling approximately 73,486 sf of residential area. The project would also construct a new 728 sf pavilion building that is designed to activate the street front along Clark Avenue. The project would incorporate approximately 22,523 sf of new accessible at-grade open space as well as indoor and outdoor common and private open space for project residents and guests. The project would utilize the three levels of existing subterranean vehicular parking and would include a total of 364 parking stalls (218 standard spaces, 19 accessible spaces, 127 tandem spaces). The project would also include 150 bicycle parking spaces on the first level of subterranean parking. The majority of construction would involve tenant improvements to the interior of the building. The project would largely maintain the exterior of the existing building.

We appreciate the opportunity to review and offer feedback on this significant project that will adaptively reuse the existing office building into student housing for California State University, Long Beach.

- **Traffic and Transportation**
  The project's plan to incorporate 364 parking stalls and 150 bicycle parking spaces is commendable. However, we recommend a detailed traffic impact analysis to evaluate how the addition of 149 student residential suites (593 beds) might affect traffic patterns, particularly around school zones and during peak hours. Coordination with the California Department of Transportation for the street

LONG BEACH
UNIFIED • SCHOOL • DISTRICT

Business Services Department
Facilities Development & Planning
2425 Webster Avenue, Long Beach, CA 90810
Phone: (562) 997-7550 | Fax: (562) 595-8644
www.lbschoolbonds.net

improvement encroachment permit should also address any potential impacts on Pacific Coast Highway and its intersections with Clark Avenue. Furthermore, it would be beneficial to confirm whether any of the parking stalls will be equipped with electric vehicle charging stations to accommodate and encourage the use of sustainable transportation options.

- **Environmental Considerations**
  Although the majority of construction will involve tenant improvements, the project's overall scope – including new open spaces and the adaptive reuse of the building – should be evaluated for any potential environmental impacts. We support a thorough environmental review to assess any effects related to construction noise, dust, and long-term sustainability practices.

The District appreciates the opportunity to review and comment on this project and would welcome an opportunity to discuss this matter with the City of Long Beach and to work together on addressing our concerns.
Please feel free to contact me at 562-997-7550 or DMiranda1@lbschools.net.

Sincerely,



David Miranda
Executive Director

**EXHIBIT 7**

**From:** LBDS-EIR-Comments <LBDS-EIR-Comments@longbeach.gov>
**Sent:** Monday, December 16, 2024 11:48 AM
**To:** Gina Casillas <Gina.Casillas@longbeach.gov>; Barkley, Jessie <Jessie.Barkley@kimley-horn.com>; Rous, Heidi <Heidi.Rous@kimley-horn.com>; Garcia, Mayra <Mayra.Garcia@kimley-horn.com>
**Subject:** FW: Park Tower Student Housing Project

Good morning,

We received this letter last week on the 5050 PCH Housing Project.

@Gina Casillas please upload this letter into the project file.

Thank you,
Amy

**Amy L. Harbin, AICP**
*Planner*

**Community Development | Planning Bureau**
411 W. Ocean Blvd., 3rd Fl. | Long Beach, CA 90802
Office: 562.570.6872

LONGBEACH COMMUNITY DEVELOPMENT

**From:** Connie Carter Lynsky <crafticonnie@gmail.com>
**Sent:** Tuesday, December 10, 2024 6:25 PM
**To:** LBDS-EIR-Comments <LBDS-EIR-Comments@longbeach.gov>
**Subject:** Park Tower Student Housing Project

-EXTERNAL-

After reviewing the proposed plan, my comments are:

Although the number of "net daily trips" are only expected to increase by 507, that number could have a big impact on a section of Clark that is already quite busy. Currently vehicles can turn left into the building parking structure (and possibly turn left onto Clark as they are leaving). When this occurs, there is a bottleneck for cars headed southbound. Having a "No Left Turn" with enforcement would eliminate the bottlenecks caused by left turns.

Parking in the residential area west of the proposed site is already difficult (preferential parking "V"). I don't know what would be required to expand the boundary for the "V" preferential parking and don't want to see students with this address being able to get parking permits for this section.

Also, I noticed that although the plan includes the number of proposed EV parking spaces, there is no mention of handicap parking spaces.

Thank you for considering the above.

Connie Lynsky
1331 Granada Avenue
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**EXHIBIT 8**

Duke | RESEARCH Blog

*Following the people and events that make up the research community at Duke*



# We Are Killing Birds. Solutions Exist. Research Can Help.

BY SOPHIE COX / ON APRIL 11, 2024

Look at the nearest window. What did you see first—the glass itself or what was on the other side? For birds, that distinction is a matter of life and death.



A dead red-eyed vireo above the entrance to the Brodhead Center at Duke. Every year, millions of birds die after colliding with windows. Buildings with lots of glass are particularly dangerous.

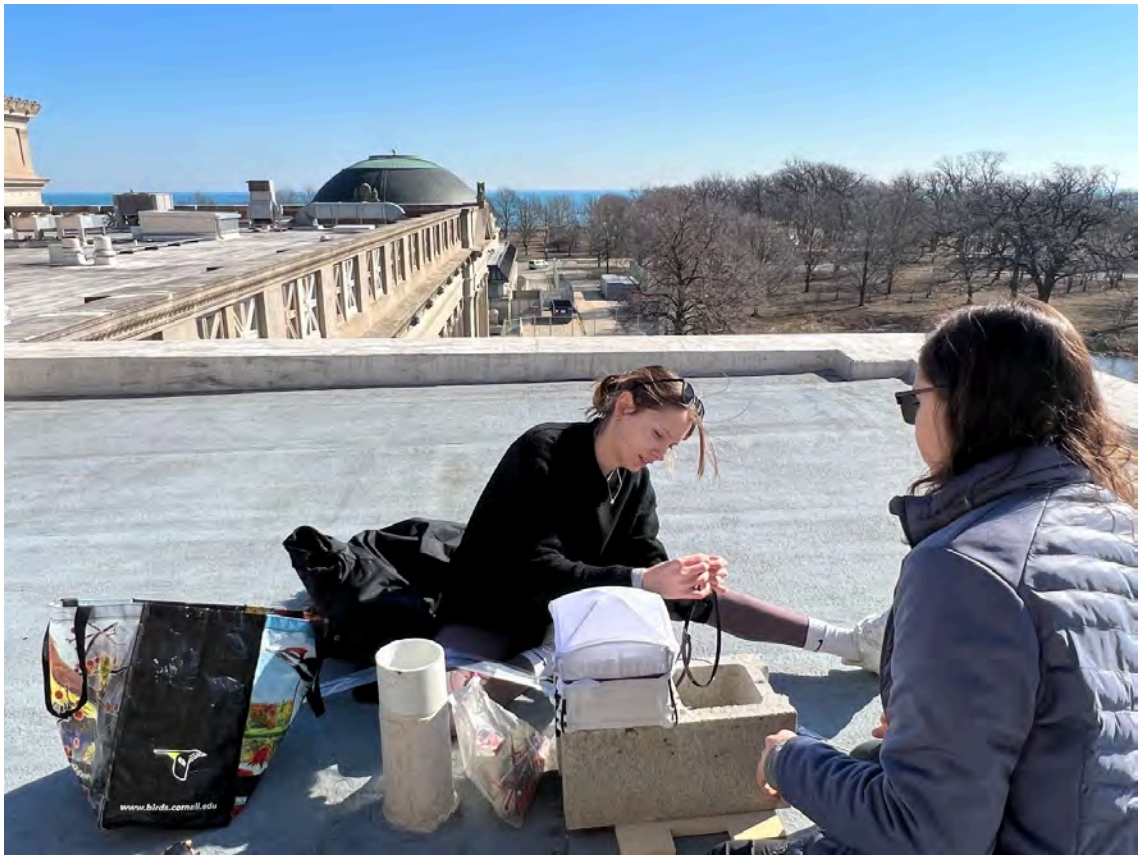
Every year, up to one billion birds die from hitting windows. Windows kill more birds than almost any other cause of human-related bird mortality, second only to feral and domestic cats. Both the transparency and reflectiveness of glass can confuse flying birds. They either don't see the glass at all and try to fly through it, or they're fooled by reflections of safe habitat or open sky. And at night, birds may be disoriented by lit-up buildings and end up hitting windows by mistake. In all cases, the result is usually the same. The majority of window collision victims die on impact. Even

the survivors may die soon after from internal bleeding, concussions, broken bones, or other injuries.

Madison Chudzik,  a biology Ph.D. student in the Lipshutz Lab at Duke, studies bird-window collisions and migrating birds. “Purely the fact that we’ve built buildings is killing those birds,” she says.

Every spring and fall, billions of birds in the United States alone migrate to breeding and wintering grounds. Many travel hundreds or thousands of miles. During peak migration, tens of thousands of birds may fly across Durham County in a single night. Not all of them make it.

Chudzik’s research focuses on nocturnal flight calls, which migrating birds use to communicate while they fly. Many window collision victims are nocturnal migrants lured to their deaths by windows and lights. Chudzik wants to know “how we can use nocturnal flight calls as an indicator to examine collision risks in species.”

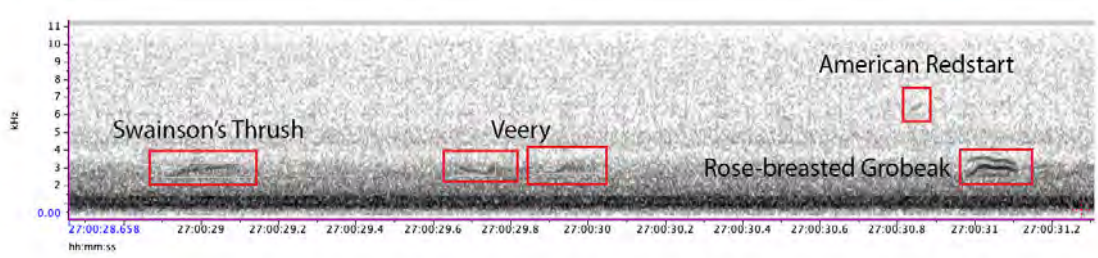



Chudzik (back) setting up one of her recording devices on the Museum of Science and Industry in Chicago. The devices record flight calls from birds migrating at night.
Image courtesy of Chudzik.

Previous research, Chudzik says, has identified a strong correlation between the number of flight calls recorded on a given night and the overall migration intensity that night. “If sparrows have a high number of detections, there is likely a high number migrating through the area,” Chudzik explains. But some species call more than others, and there is “taxonomic bias in collision risk,” with some species that call more colliding less and vice versa. Chudzik is exploring this relationship in her research.

Unlike bird songs, nocturnal flight calls are very short. The different calls are described with technical terms like “zeep” and “seep.” Chudzik is part of a small but passionate community of people with the impressive ability to identify species by the minute differences

between their flight calls. “It’s a whole other world of… language, basically,” Chudzik says.




Chudzik can identify a species not only by hearing its flight call but also by seeing its spectrogram, a visual representation of sound. This spectrogram, from a recording on Adler Planetarium, has flight calls from four species. The x-axis represents time, while the y-axis shows frequency. The brightness or intensity indicates amplitude.
Image from Chudzik.

She began studying nocturnal flight calls for research she did as an undergraduate, but her current project no longer needs to rely on talented humans to identify every individual call. A deep learning model called Nighthawk, trained on a wealth of meticulous flight call data, can identify calls from their spectrograms with 95% accuracy. It is free and accessible to anyone, and much of the data it’s been trained on comes from non-scientists, such as submissions from a Facebook community devoted to nocturnal flight calls. Chudzik estimates that perhaps a quarter of the people on that Facebook page are researchers. “The rest,” she says, “are people who somehow stumbled upon it and… fell in love with nocturnal flight calling.”

In addition to studying nocturnal flight calls, Chudzik’s research will investigate how topography, like Lake Michigan by Chicago, affects migration routes and behavior and how weather affects flight calls. Birds seem to communicate more during inclement weather, and bad weather sometimes triggers major collision events. Last fall in

Chicago, collisions with a single building killed hundreds of migratory birds in one night.

Chudzik had a recorder on that building. It had turned off before the peak of the collision event, but the flight call recordings from that night are still staggering. In one 40-second clip, there were 300 flight calls identified. Normally, Chudzik says, she might expect a maximum of about seven in that time period.

Nights like these, with enormous numbers of migrants navigating the skies, can be especially deadly. Fortunately, solutions exist. The problem often lies in convincing people to use them. There are misconceptions that extreme changes are required to protect birds from window collisions, but simple solutions can make a huge difference. “We’re not telling you to tear down that building,” Chudzik says. “There are so many tools to stop this from happening that… the argument of ‘well, it’s too expensive, I don’t want to do it…’ is just thrown out the window.”



A yellow-bellied sapsucker collision casualty in front of the French Family Science Center last year.

**What can individuals and institutions do to prevent bird-window collisions?**

**Turn off lights at night.**

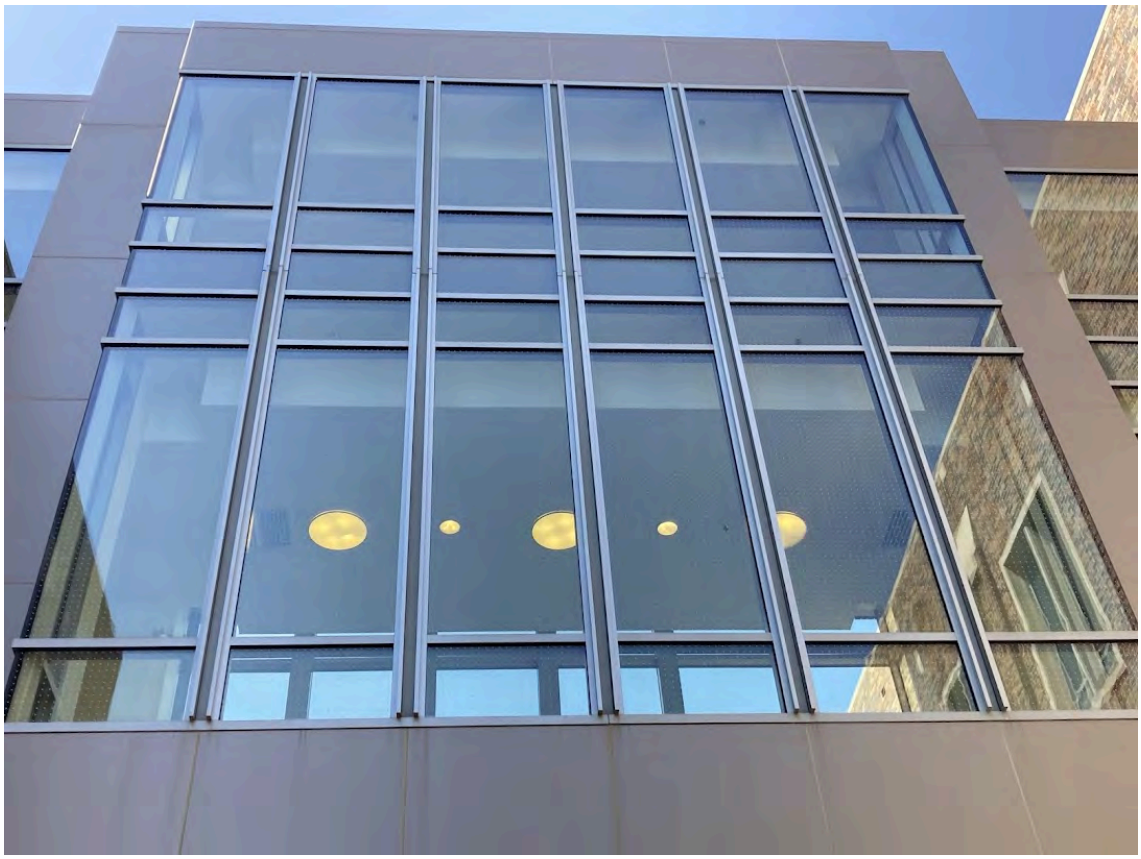
For reasons not completely understood, birds flying at night are attracted to lit-up urban areas, and lights left on at night can

become a death trap. Though window collisions are a year-round problem, migration nights can lead to high numbers of victims, and turning off non-essential lights can help significantly. One study on the same Chicago building where last year's mass collision event occurred found that halving lighted windows during migration could reduce bird-window collisions by more than 50%.

Chudzik is struck by "the fact that this is such a big conservation issue, but it literally just takes a flip of a switch." BirdCast and Audubon suggest taking actions like minimizing indoor and outdoor lights at night during spring and fall migration, keeping essential outdoor lights pointed down and adding motion sensors to reduce their use, and drawing blinds to help keep light from leaking out.

**Use window decals and other bird-friendly glass treatments.**

There are many products and DIY solutions intended to make windows safer for birds, like window decals, external screens, patterns of dots or lines, and strings hanging in front of a window at regular intervals. For window treatments to be most effective, they should be applied to the exterior of the glass, and any patterning should be no more than two inches apart vertically and horizontally. This helps protect even the smallest birds, like kinglets and hummingbirds.



It can be hard to see from a distance, but these windows on Duke's Fitzpatrick Center have been retrofitted with tiny white dots, an effective strategy to reduce bird-window collisions.

A 2016 window collision study at Duke conducted by several scientists, including Duke Professor Nicolette Cagle, Ph.D., identified the Fitzpatrick Center as a window collision hotspot. As a result, Duke retrofitted some of the building's most dangerous windows with bird-friendly dot patterning. Ongoing collision monitoring has revealed about a 70% reduction in collisions for that building since the dots were added.

One obstacle to widespread use of bird-friendly design practices and window treatments is concerns about aesthetics. But bird-friendly windows can be aesthetically pleasing, too, and "Dead birds hurt your aesthetic anyway."

**If nothing else, don't clean your windows.**

Bird-window collisions don't just happen in cities and on university campuses. In fact, most fatal collisions involve houses and other buildings less than four stories tall. Window treatments like the dots on the Fitzpatrick building can be costly for homeowners, but anything you can put on the outside of a window will help.

"Don't clean your windows," Chudzik suggests—smudges may also help birds recognize the glass as a barrier.

**Window collisions at Duke**

The best thing Duke could do, Chudzik says, is to be open to treating more windows. Every spring, students in Cagle's Wildlife Surveys class, which I am taking now, collect data on window collision victims found around several buildings on campus. Meanwhile, a citizen science iNaturalist project collects records of dead birds seen by anyone at campus. If you find a dead bird near a window at Duke, you can help by submitting it to the Bird-window collisions project on iNaturalist. Part of the goal is to identify window collision hotspots in order to advocate for more window treatments like the dots on the Fitzpatrick Center.

Spring migration is happening now. BirdCast's modeling tools estimate that 260,000 birds crossed Durham County last night. They are all protected under the Migratory Bird Treaty Act. However, Chudzik says, "We haven't thought to protect them while they're actually migrating." The law is intended to protect species that migrate, but "it's not saying 'while you are migrating you have more protections,'" Chudzik explains. Some have argued that it should, however, suggesting that the Migratory Bird Treaty Act should mandate safer windows to help protect migrants while they're actually migrating.



“This whole world comes alive while we’re asleep, and… most people have no idea,” Chudzik says about nocturnal flight calls. She is shown here on Northwestern University, one of the Chicago buildings where she has placed recorders for her research.
Photo courtesy of Chudzik.

We can’t protect every bird that passes overhead at night, but by making our buildings safer, we can all help more birds get one step

closer to where they need to go.



*Post by Sophie Cox, Class of 2025*

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# Why Birds Hit Windows—And How You Can Help Prevent It

**For birds, glass windows are worse than invisible.** By reflecting foliage or sky, they look like inviting places to fly into. And because the sheer number of windows is so great, their toll on birds is huge. Up to about 1 billion birds die from window strikes in the U.S. each year, according to a 2014 study.

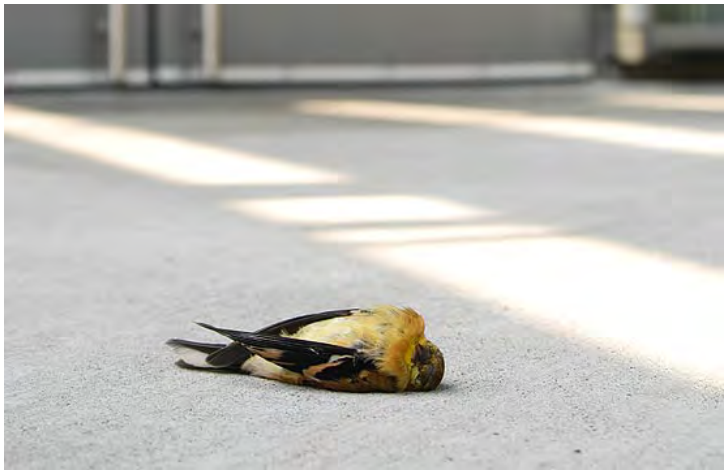


*Photo by Susan Spear/Cornell Lab.*

The good news is that **you can greatly reduce the danger** your home's windows pose to birds with some simple remedies, according to Christine Sheppard, who directs the Bird Collisions Program of the American Bird Conservancy. The group offers extensive information on preventing collisions on its website. The Fatal Light Awareness Program also offers great information on preventing bird collisions.

What happens to birds that hit windows? Sadly, the bird often dies, even when it is only temporarily stunned and manages to fly away. Many times these birds die later from internal bleeding or bruising, especially on the brain. Daniel Klem of

Muhlenberg College has researched this issue since the 1970s. He writes, “Glass is an indiscriminate killer that takes the fit as well as the unfit of a species’ population.”



Illustrations by 2023 Bartels Science Illustrator Maria Klos

## Why Birds Collide With Windows

There are two main types of window collisions: daytime and nighttime. In daylight, birds crash into windows **because they see reflections of vegetation** or see through the glass to potted plants or vegetation on the other side. At night, nocturnal migrants (including most songbirds) crash **because they fly into lighted windows**.


The window imprint left by a Mourning Dove. *Photo by Priscilla Bradley/PFW.*

For reasons not entirely understood, lights divert nocturnal migrants from their original path, especially in low-ceiling or foggy conditions. In the lighted area, they mill about, sometimes colliding with one another or the lighted structure. As a subsequent hazard, migrants drawn off course by urban lighting may roost safely nearby, only to become vulnerable to daytime reflections in windows the following day. The BirdCast project and the Fatal Light Awareness Program have more about this problem.

There’s one additional reason: birds sometimes see their reflection in a window and attack it. This happens most frequently in the spring when territoriality is high. Although it can be annoying to the homeowner, it’s seldom a threat to the bird’s

survival. Most of the remedies suggested below for window strikes will also help solve the problem of a bird attacking its reflection.

# How To Safeguard Your Windows For Birds



Reflected landscapes can confuse birds and cause deadly window strikes. *Photo by Susan Spear/Cornell Lab.*

Start by identifying dangerous windows, including large picture windows, paired windows at right angles to each other, or windows with feeders outside. Go outside and look at your windows from a bird's point of view. If you see branches or sky reflected in or visible through the glass, that's what the birds will see, too. Past recommendations about safe distances for feeders outside windows are no longer thought to be valid, Sheppard says. "If you've got windows near a bird feeder, you should make them bird friendly and don't worry about how far away they are."

## Treatments For Existing Windows

To deter small birds, markings such as decals on windows should ideally be spaced uniformly 2 inches apart across the entire outer surface of the glass. (This will safeguard the windows for even the smallest birds such as hummingbirds, gnatcatchers, siskins, kinglets, and the like.) Acopian BirdSavers, made of paracord, can be spaced 4 inches apart because of their greater visibility. All marking techniques should be applied to the outside of the window.

- **Tempera paint or soap.** Mark the outside of the window with soap or tempera paint, which is inexpensive and long lasting. You can use either a grid pattern of 2 inches by 2 inches (see above), or get creative and paint patterns or artwork on your window.

- **Decals.** Put decals, stickers, sun catchers, mylar strips, masking tape, or other objects (even sticky notes) on the outside surface of the window. These are only effective when spaced very closely (see above). **Note that hawk silhouettes do little to deter birds.** Remember: placing just one or two window stickers on a large window is not going to prevent collisions–they must cover most of the glass with the spaces between too narrow for birds to fly through.
- **Dot Patterns and Tape.** Long-lasting tape products offer an easier way to apply the correct spacing of dots across your window. Products such as those available at Feather Friendly work well in preventing collisions.
- **Acopian BirdSavers.** Also known as "zen curtains," these closely spaced cords hang down over windows. They do the work of tape or decals but are easier to install and can be aesthetically pleasing. They are highly effective and are the method we use to safeguard windows at the Cornell Lab headquarters. You can order them to fit your windows or make your own.
- **Screens.** Installing mosquito screens over your windows is very effective, as long as they are on the outside of the window and cover the entire surface.
- **Netting.** Cover the glass on the outside with netting at least 3 inches from the glass, taut enough to bounce birds off before they hit. Small-mesh netting (around 5/8″ or 1.6 cm) is best, so that birds don't get their heads or bodies entangled but will bounce off unharmed. You can mount the netting on a frame, such as a storm-window frame, for easy installation and removal.
- **One-way transparent film.** Products such as Collidescape permit people on the inside to see out, but makes the window appear opaque on the outside. They can reduce the amount of light that comes in your window (this can also reduce your cooling costs), according to Sheppard.

## New Homes And Remodels

- Install external shutters and keep them closed when you're not in the room or taking advantage of the light or view. (These can be huge energy savers, too!)

- Install external sun shades or awnings on windows, to block the reflection of sunlight. Remote controlled shades are available.
- On new construction or when putting in new windows, consider windows that have the screen on the entire outside of the glass.
- Add interior vertical blinds and keep the slats only half open.
- Avoid visual paths to sky and greenery. Bright windows on the opposite wall from your picture window may give the illusion of an open path to the other side. Closing a window shade or a door between rooms can sometimes solve this situation.

## Lights Out

Lights Out initiatives are gaining ground in U.S. cities including Dallas, Houston, Philadelphia, and New York. The all-night glow of office buildings and streetlights in cities is especially dangerous for drawing migrating birds off course, delaying their migrations and making them vulnerable to window collisions. Turning off nonessential lights and installing downward-facing lighting are relatively simple ways to reduce the problem of artificial light at night. It's still wise to take precautions against window collisions using any of the above methods, especially for homeowners.

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### HOW TO HELP A WINDOW COLLISION VICTIM

When a bird strikes a window, its best chance for recovery is to get help from a wildlife rehabilitation facility immediately. Window collision victims may suffer from pain and internal injuries that are not visible at first but will worsen with time. They are vulnerable to predators and pedestrian traffic if left alone. If you find a bird dazed from a window collision, here's what to do:

- **Try to capture and contain it.** Approach the bird from behind and use both hands to gently cover it. The bird may flutter or call out–don't be startled.

Note that small birds are very fragile, so don't close your fingers or hand tightly around their body–hold the bird gently but securely.

- **Find a suitable container** such as an unwaxed paper bag or small cardboard box lined with tissue paper or paper towel to allow the bird to grip. Place the closed container somewhere dark, quiet, warm, and away from children and pets.
- **Do not handle, feed, or water the bird** once it's in the container. Remember, wild birds may perceive humans as predators, so try not to stress the bird.
- **Find a rehabber near you** (via this online directory) and contact them for further instructions. If you are unable to transport the bird, let the wildlife rehab facility know and they may be able to offer other options.
- **If the facility instructs you to try releasing the bird**, take it to a wooded area (or other habitat as appropriate for the species) far away from buildings. Before releasing the bird, keep some distance from any trees/vegetation so you can assess the bird's flight. Point the bag/box in the direction of vegetation and slowly open the top. If the bird does not fly well, try to recapture it and reconnect with the wildlife rehab facility for more guidance.

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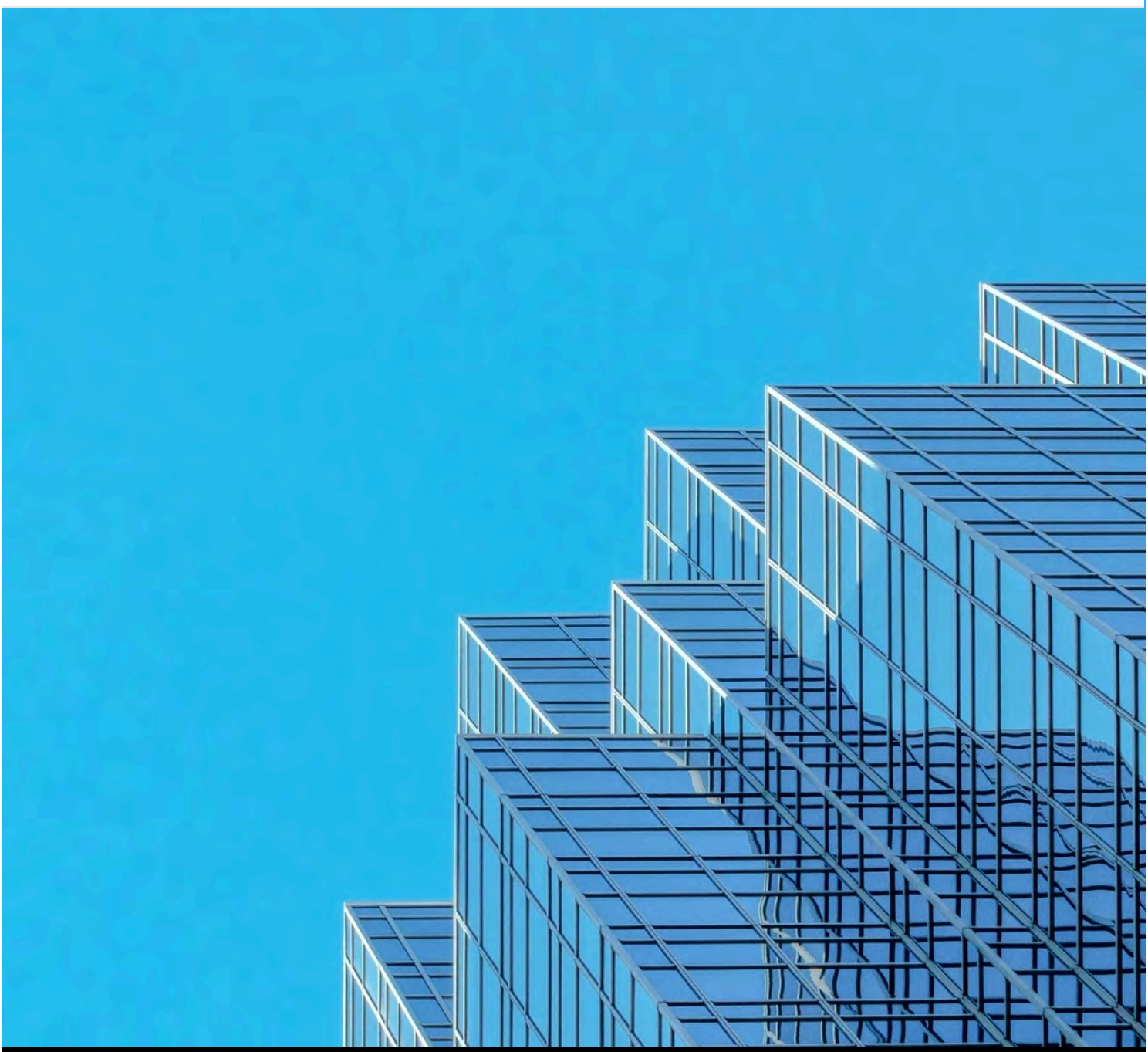
**EXHIBIT 9**

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URBAN TRANSFORMATION

# Low-emissivity glass is revolutionizing building efficiency. Here's how

Jun 7, 2024



When evaluating sustainability, it is crucial to consider the entire lifecycle of glass.
Image: Unsplash.

**Görkem Elverici**
**CEO,** Şişecam

- **Advances in glass technology are enabling the construction of more energy efficient buildings.**

- **There are, however, sustainability concerns about the lifecycle of glass production.**

For centuries, glass has been an integral part of human history, evolving into a key element in modern architecture, available in various forms. It is attractive for its aesthetic appeal, transparency, and ability to transmit natural light. Beautifully described by Jean-Jacques Rousseau as the "most innocent of stones", glass was primarily used in windows.

However, the sustainability of glass as a building material has gained wider attention in recent years, paralleling the growing demand for environmentally friendly construction practices. Innovative technologies have empowered architects to craft not only unconventional shapes but also sustainable products with this versatile material. In this article, we examine the sustainability of glass, evaluating its impact on the environment, energy efficiency, and resource consumption.

**Have you read?**

- **This technology turns windows into solar panels, here's how**
- **Retrofitted buildings are key to the energy transition. 5 ways to unlock progress**
- **Rethinking buildings is a climate imperative: Here's what to focus on**

# Innovations in glass technology

When we think of innovation, we think of advanced technology, robots that are thought to replace humans, or space science. Rarely, do we consider skyscrapers as hub of innovation. Nevertheless, the building industry is undergoing a revolution, one

Currently, the ratio of glass to other building materials may surprise you. In modern skyscrapers, glass usage is more than 50% of the exterior surface area. Advances in technology have given glass many new properties, changing how it looks and what it can do. Glass is now more than just see-through; it can also be translucent, reflective, and even produce and protect energy. And transparency isn't just about glass anymore.

Flat glass, commonly used in skyscrapers, has its disadvantages. It easily transfers heat from the inside to the outside because it conducts heat quickly. This can lead to higher energy consumption for heating and cooling. Also, its high light transmittance can result in too much sunlight inside and temperature swings.

## History of energy efficient windows

When the energy crisis of the 1970s emerged, European governments began to pursue policies to regulate energy consumption. The Ministry of Energy determined that approximately 25% of residential heating costs are a direct result of energy loss from buildings' windows. For this reason, it began funding research studies that could reduce the amount of energy leaking from buildings. In the 1970s, multi-pane windows reached the market and manufacturers began marketing energy-efficient windows for the first time.

Double glazed windows and doors have proven to be an effective solution as they significantly reduce heat transfer through the windows, minimizing the need for excessive heating or air conditioning. Low-emissivity (Low-e) windows also appeared in the 1970s. The first low-e coatings were made using thin layers of gold, creating a green hue. In 1981, the first colorless low-e coatings were produced using silver layers.

**What is the World Economic Forum doing to promote sustainable urban development?**

Show more

# What is Low-e glass and how is it more energy efficient?

Low-e glass was developed to solve these problems. Soft coatings, including Low-e glass, constitute 65% of the total coated market. Soft coated glass with a market value is approximately $28 million in 2022. The forecast for 2023-2028 predicts a compound annual growth rate of 9.23%, propelling the market value to an estimated $47 million by 2028, according to *Global Coated Glass Market Research Report, Analysis and Forecast till 2028*. The silver material in the nanometer scale found in low-e coated glasses is coated among other materials that provide various anti-reflective properties.

In this way, selectivity is achieved in the electromagnetic spectrum and allows daylight to enter the interior of the building. Low-e coated glasses on this nanometric scale have properties that protect the interior from the harmful effects of sunlight due to their infrared and ultraviolet reflective properties. With these optical properties low-e coated glass makes us feel more spacious in buildings.

Low-e glass is also widely used in buildings in their temperable versions, which enables them to provide solutions for different needs of buildings. In addition to its thermal insulation feature, Low-e glass with tempered properties also provide safety in buildings. It provides security features when laminated. As a result, low-e glasses significantly decreases energy consumption in the building, enhance indoor comfort, and create a healthier environment for building occupants.

developed and developing countries, the use of coated double or triple glass in new buildings becomes mandatory. At the same time, the global trend in increasing urbanization and increasing infrastructure projects plays an important role for the coated glass market.

## Advances in glass technology

The increasing demand for smart solutions in today's buildings is driving the adoption of smart glass, making it a major trend in the coated glass market. In parallel, key trends are shaping the market's future. Advancements in smart glass technologies, innovations in coating technologies, and a growing industry-wide dedication to sustainability are all contributing factors to the evolution of the coated market.

thermal insulation. Solar Low-e product group provides both heat and solar control at the same time with a single coating. Thanks to its coating that prevents the heat inside from escaping, it provides 50% better insulation than standard double glass and also has solar control properties. In this way, it contributes to reducing the heating and cooling loads of buildings.

There is a special project in Ankara, Türkiye, which meets all its heating, cooling and electrical energy needs with solar panels. Thanks to the triple-glazed insulating glass unit, that were used in the project, 81% thermal insulation and 57% more effective daylight control was achieved compared to the uncoated double-glazed insulating glass unit. The investment, made for the solar energy system, pays off in two-three years.

## How can we make the lifecycle of glass more sustainable?

Despite the contribution of the use of Low-e glass in the building industry to reducing the carbon footprint, there are still concerns about the sustainability of glass production, such as high energy consumption and use of natural resources. The use of fossil fuels contributes to greenhouse gas emissions and climate change. Additionally, the extraction and processing of raw materials required for glass production can damage natural ecosystems, especially because of activities such as sand mining.

For these reasons, glass production is often not sustainable. However, the glass industry can reduce these impacts by adopting more sustainable solutions. For example, it can reduce the environmental impacts of glass production by increasing the use of recycled glass, improving energy efficiency, and switching to renewable energy sources.

been able to reduce specific energy consumption by 12% in glass manufacturing over the last 15 years. We aim to expand renewable energy use at its plants eight-fold by 2030.

When evaluating sustainability, it is crucial to consider the entire lifecycle of glass, including its production, use, and disposal. This holistic approach allows informed decisions about using glass in buildings and promotes sustainable construction practices.

We have a responsibility to leave a healthy and sustainable world for future generations. Companies need to act on this responsibility. By implementing well-defined strategies focused on environmental protection, social responsibility, and positive societal impact, we can strive to create a sustainable future. I invite the glass industry to lead this journey toward a more sustainable future.

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Weatherwatch Energy efficiency

This article is more than **5 years old**

# Weatherwatch: glass skyscrapers are worst energy offenders

## Big windows and high air-conditioning needs mean radical new approaches are needed



London skyscrapers, including the Shard and One Blackfriars. Photograph: Alamy

**Jeremy Plester**

Mon 30 Sep 2019 16.30 EDT

Whatever you think of skyscrapers, they guzzle energy. One study revealed that electricity use per square metre of floor area was nearly two and a half times greater in high-rise office buildings (20 or more storeys) than in low-rises (six storeys or less).

The gas use for heating was about 40% more for tall buildings, and the total carbon emissions from these buildings was twice as high.

Glass skyscrapers are the worst offenders. Large windows may provide magnificent views but they leak heat in cold weather; even triple glazed windows lose far more heat than a well-insulated brick wall.

In hot weather, glass windows turn building interiors into ovens, and temperatures rise even further with the heat from people and computers in an office. It was only the development of modern air-conditioning that made the interior of glass buildings tolerable in summer, but carbon emissions from air-conditioned offices are about 60% higher than offices with natural or mechanical ventilation.

Air-conditioning is rising worldwide - by 2050 it is predicted that the energy consumption for air-conditioning could triple. It would be a challenge for renewable energy to meet all this demand and if we are to truly tackle climate change, a radical new way of designing multiple occupancy office space needs to be found.


## Why you can rely on the Guardian not to bow to Trump – or anyone

I hope you appreciated this article. Before you move on, I wanted to ask whether you could support the Guardian's journalism as we face the unprecedented challenges of covering the second Trump administration.

As Trump himself observed: "The first term, everybody was fighting me. In this term, everybody wants to be my friend."

He's not entirely wrong. All around us, media organizations have begun to capitulate. First, two news outlets pulled election endorsements at the behest of their billionaire owners. Next, prominent reporters bent the knee at Mar-a-Lago. And then a major network - ABC News - rolled over in response to Trump's legal challenges and agreed to a $16m million settlement in his favor.

The Guardian is clear: we have no interest in being Donald Trump's - or any politician's - friend. Our allegiance as independent journalists is not to those in power but to the public. Whatever happens in the coming months and years, you can rely on the Guardian never to bow down to power, nor back down from truth.

How are we able to stand firm in the face of intimidation and threats? As journalists say: follow the money. The Guardian has neither a self-interested billionaire owner nor profit-seeking corporate henchmen pressuring us to appease the rich and powerful. We are funded by our readers and owned by the Scott Trust - whose only financial obligation is to preserve our journalistic mission in perpetuity.

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news.

**With the new administration boasting about its desire to punish journalists, and Trump and his allies already pursuing lawsuits against newspapers whose stories they don't like, it has never been more urgent, or more perilous, to pursue fair, accurate reporting. Can you support the Guardian today?**

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**Betsy Reed**
*Editor, Guardian US*

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# Airport Influence Area

Authoritative

**Daniel Hoffman**
County of Los Angeles

## Summary

Airport Influence Area for airports in Los Angeles County.

State law requires sellers of real property to disclose "any fact materially affecting the value and desirability of the property". Assembly Bill 2776, which went into effect January 1, 2004, requires such disclosure when the property is either within two miles of an airport or if it is within an "airport influence area". The disclosure notice must state that the property may be subject to noise, vibration, odors or other annoyances or inconveniences "associated with proximity to airport operations". This law defines the "airport influence area" as the area where airport-related factors "may significantly affect land uses or necessitate restrictions on those uses as determined by an airport land use commission". The California Public Utilities Code establishes airport land use commissions in every county to provide for the orderly development of air transportation and ensure compatible land uses around airports which are open to public use. According to the State Division of Aeronautics, the "airport influence area" is usually the planning area designated by an airport land use commission for each airport.

Please click here to see the Los Angeles County Airport Land Use Commission portion of our

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# LETTER 7

**From:** Connie Carter Lynsky <crafticonnie@gmail.com>
**Sent:** Tuesday, December 10, 2024 6:25 PM
**To:** LBDS-EIR-Comments <LBDS-EIR-Comments@longbeach.gov>
**Subject:** Park Tower Student Housing Project

**-EXTERNAL-**

After reviewing the proposed plan, my comments are:

Although the number of "net daily trips" are only expected to increase by 507, that number could have a big impact on a section of Clark that is already quite busy. Currently vehicles can turn left into the building parking structure (and possibly turn left onto Clark as they are leaving). When this occurs, there is a bottleneck for cars headed southbound. Having a "No Left Turn" with enforcement would eliminate the bottlenecks caused by left turns.

Parking in the residential area west of the proposed site is already difficult (preferential parking "V"). I don't know what would be required to expand the boundary for the "V" preferential parking and don't want to see students with this address being able to get parking permits for this section.

Also, I noticed that although the plan includes the number of proposed EV parking spaces, there is no mention of handicap parking spaces.

Thank you for considering the above.

Connie Lynsky
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